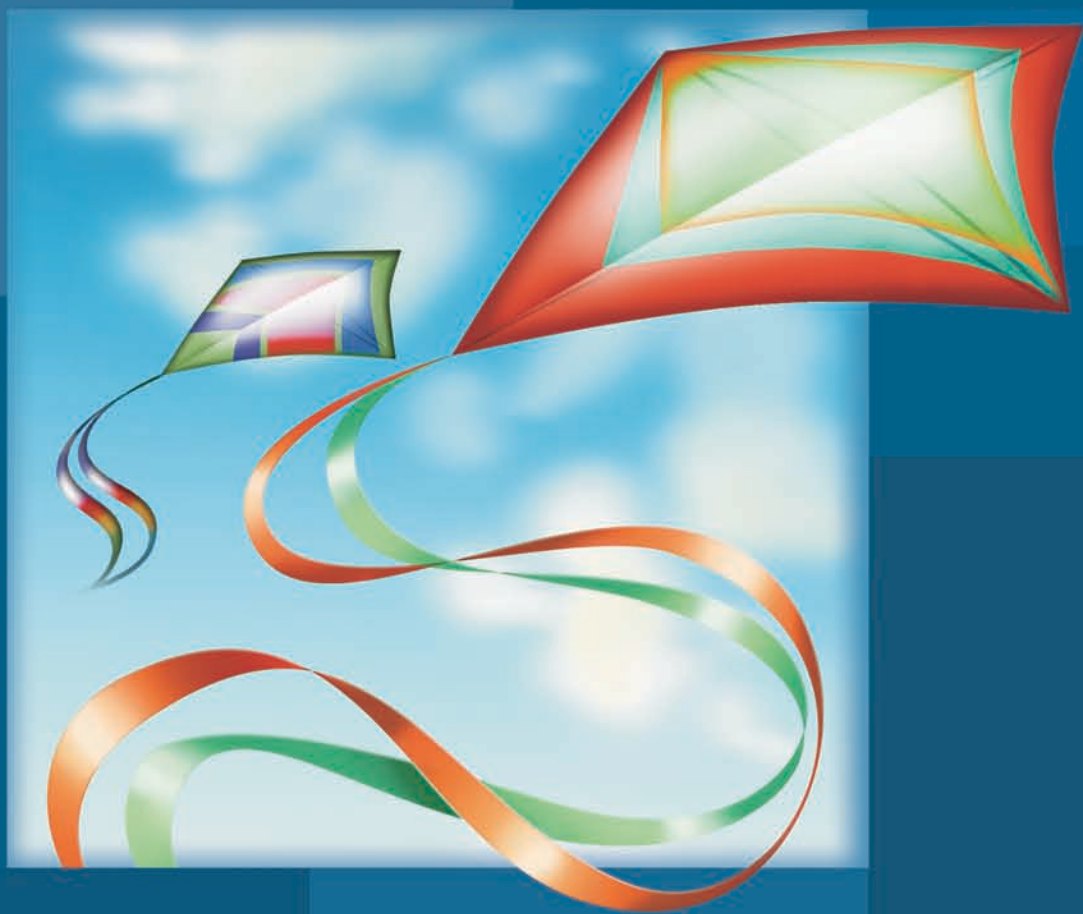


Addressing Barriers to Learning

A South African
Perspective



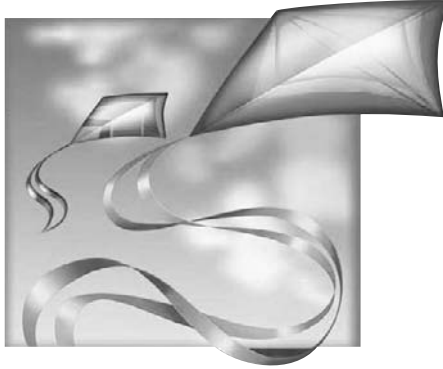
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ASSISTANT EDITORS

VS 90 *Years*
Year

Addressing Barriers to Learning

A SOUTH AFRICAN PERSPECTIVE



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DEDICATION

To all sung and unsung heroes, including inspirational educators, who have surpassed barriers and, in particular, to Mr Nelson Mandela for his inclusive approach, setting a nation free.

In 1997, Mr Mandela welcomed the then president of Ghana to the Union Buildings in Pretoria. On this occasion, Mr Mandela suddenly said: “Call that child”. To everyone’s amazement, an eleven-year-old Afrikaans boy, in his school uniform, was brought to the president. He asked the boy’s name, turned to his important guest and introduced them to each other! The two shook hands and the president rubbed the boy’s head. Then Mr Mandela said goodbye to the boy. What does this tell you? To us it means that this statesman could even include a young boy in his official duties. It never occurred to Mandela that he was too important, or that the boy was too insignificant.

There are countless similar examples. Journalists tell how he was interested in them as people. Tim Modise says that Mr Mandela invited his whole family to dinner after Tim’s wife died. He asked a TV journalist, Debra Patta, if he could help her carry her heavy equipment! A woman, Elsa Krüger, tells how when she was waiting for her father in the doctor’s consulting rooms, Mr Mandela, who was also at the doctor, shook hands with everyone and asked after their health.

How does he include everyone? He gives support when people mourn over loved ones and lets them share in his hospitality, he respects people, offers help and does not think himself better than them, he is humane, thoughtful and friendly. You can do these things too. As an icon, Nelson Mandela proves that his pursuit of equality for all is genuine when he shows us how it should be done.

Inclusiveness is no new idea – it involves an ideology that liberates people from their own prejudices and short-sightedness. In the process other people are therefore also freed from the “imprisonment” of their prejudices, and everyone is included in a liberated community. The road to this kind of freedom might be a long one, but each step brings us closer.

Sources: Van Wyk, M. 2004. Trots Suid-Afrikaans: Madiba magic. *Sarie*, May, 46–50; Krüger, D. & Groenewald, S. 2004a. *A practical guide for educators to accommodate diversities in inclusive education: secondary schools and colleges*. Bapsfontein: OBE Publishers; and Krüger, D. & Groenewald, S. 2004b. *A practical guide for learners to accommodate diversities in inclusive education: secondary schools and colleges*. Bapsfontein: OBE Publishers.

TABLE OF CONTENTS

SECTION A: INTRODUCTION

Chapter 1: A framework for understanding inclusion

1.1	Introduction	3
1.2	What is inclusion?	3
1.3	Inclusion in an international context	4
1.3.1	Changing paradigms	4
1.3.2	The medical model	5
1.3.3	The social ecological model	6
1.4	Bronfenbrenner's ecological and bio-ecological models	9
1.5	Inclusion in the South African context	15
1.5.1	Special needs education prior to inclusion	15
1.5.2	From exclusion to inclusion	16
1.6	Implications of inclusion for South African schools and education	18
1.7	Conclusion	20

SECTION B: ADDRESSING SOCIO-ECONOMIC BARRIERS

Chapter 2: Socio-economic barriers to learning in contemporary society

2.1	Introduction	27
2.2	The culture of poverty in South Africa	28
2.2.1	Overview	28
2.2.2	Unplanned urbanisation and unemployment	28
2.3	Moral confusion and an uncertainty about values	29
2.4	The HIV/Aids pandemic	31
2.4.1	The Tirisano plan for HIV/Aids intervention	32
2.5	The disintegration of family life and the abuse of children	33
2.5.1	Effects of the disintegration of family life	33
2.5.2	Child abuse	34
2.6	Language and cultural differences	37
2.7	Addressing the anti-child climate in contemporary society	38
2.7.1	Community education	38
2.7.2	Educational programmes	38

2.7.3	Counteracting the fate of street children	38
2.7.4	Health programmes	38
2.7.5	Campaign against child abuse	40
2.8	Conclusion	41

SECTION C: ADDRESSING EDUCATIONAL BARRIERS

Chapter 3: Identification and assessment of barriers to learning

3.1	Introduction	45
3.2	The purpose of assessment when learners appear to flounder	46
3.2.1	On what should you be setting your sights?	46
3.2.2	Learning support	47
3.2.3	The ground to cover	48
3.3	A framework of theory	50
3.3.1	Orientation	50
3.3.2	The bio-ecological model of development	50
3.3.3	The asset-based approach	51
3.3.4	Dynamic assessment	54
3.3.5	Accommodations in assessment	56
3.4	Strategies and techniques in assessing for learning support	57
3.4.1	Orientation	57
3.4.2	Strategies in assessment	57
3.4.3	Assessment techniques	58
3.5	Conclusion	59

Chapter 4: Learning support

4.1	Introduction	61
4.2	Learning support in South Africa	62
4.2.1	<i>Education White Paper 6</i> and its implementation	62
4.2.2	Network of support within each education district	64
4.2.3	Learning support in schools	66
4.3	Cooperative learning and teaching strategies	71
4.3.1	Characteristics of and requirements for successful cooperative learning	71

4.3.2	The size of the group	72
4.3.3	The group members	73
4.3.4	Classroom management for group work	73
4.3.5	The roles of each group member	74
4.3.6	Explaining the assignment	74
4.3.7	Problem-based learning	75
4.3.8	Conclusion	75
4.4	An individual learning support programme	75
4.4.1	Assessing the knowledge, skills and attitudes the learner has thus far achieved	75
4.4.2	Outcomes	76
4.4.3	Selecting the curriculum contents	76
4.4.4	Choosing learning support strategies and methods	76
4.4.5	Assessment	76
4.5	Conclusion	77

Chapter 5: Early childhood intervention

5.1	Early childhood education: a South African policy perspective	79
5.2	Early childhood intervention: a bio-ecological approach	80
5.2.1	Application of a bio-ecological analysis	81
5.2.2	A bio-ecological approach to early childhood intervention: focusing on assets and resources	82
5.3	How can the educator use a resource-based approach to facilitate early childhood education?	83
5.3.1	Involving parents in the early education programme	84
5.3.2	Strategies for building partnerships between educators and parents	85
5.4	Different approaches to early intervention: the importance of social inclusion	87
5.5	Classroom ecological variables	88
5.5.1	Physical ecological variables	88
5.5.2	Social ecological variables	88
5.6	Learning through communication	91
5.7	Principles of early learning	91
5.7.1	Relaxed modes of learning: play as the foundation for learning	91
5.7.2	Active participation as a prerequisite for learning	91
5.7.3	Developing positive attitudes and dispositions towards learning	91

5.7.4	Building foundations for learning and literacy by focusing on real-life contexts	92
5.7.5	Collaboration between children and educators and parents is at the heart of early childhood education	92
5.8	What is a respectful early childhood practitioner or educator?	92
5.9	Conclusion	93

Chapter 6: Addressing life skills problems

6.1	Introduction	96
6.2	Life skills as coping tools	97
6.3	Life skills problems	98
6.3.1	Problems in acquiring physical skills – physical intelligence (PQ)	99
6.3.2	Problems in acquiring emotional skills – emotional intelligence (EQ/EI)	100
6.3.3	Problems in acquiring social skills – social intelligence (SQ)	101
6.3.4	Problems in acquiring thinking skills (IQ)	103
6.3.5	Problems in acquiring motivational skills – motivational intelligence (MQ)	105
6.3.6	Problems in acquiring moral skills – moral intelligence (MQ/MI)	106
6.3.7	Situational intelligence (SQ)	107
6.4	Facilitating life skills acquisition – an integrated holistic life skills model	108
6.4.1	Introduction	108
6.4.2	The outcomes-based principles of a life skills model	108
6.4.3	An integrated holistic life skills model	109
6.4.4	An example of an intrapersonal life skills lesson	111
6.4.5	An example of an interpersonal life skills lesson	112
6.5	Barriers to implementing life skills programmes successfully	112
6.6	Conclusion	113

SECTION D: ADDRESSING LITERACY BARRIERS

Chapter 7: First language problems

7.1	Introduction	119
7.2	Language and communication	119
7.3	Spoken language	120
7.3.1	Cognition and language	120
7.3.2	Metacognition and metalinguistics	120

7.3.3	Dimensions of language	121		to learners with language and communication problems	138
7.3.4	The development of spoken language, reading and written language	122	7.11.2	Reading support	139
7.3.5	Relations between spoken language, reading and written language and their dimensions	122	7.11.3	Written language support	142
7.4	Reading	124	7.12	Conclusion	144
7.4.1	The involvement of the language dimensions in reading	124	Chapter 8: Second language difficulties in a South African context		
7.4.2	The components of reading	124	8.1	Introduction	150
7.5	Written language	127	8.2	English second language (ESL)	150
7.5.1	The elements of written language	127	8.2.1	Difficulties in ESL learning	151
7.6	Background to problems in spoken language, reading and writing and factors underlying these problems	128	8.3	Assessment of ESL learners	153
7.6.1	Absence of verbal language	129	8.4	Support for English second language learners	155
7.6.2	Qualitative language which differs from the language norm	129	8.4.1	Second language learning in a multi- cultural classroom	156
7.6.3	Language backlog	129	8.4.2	Cooperative learning groups	159
7.6.4	Interrupted language development	129	8.4.3	Teaching and learning styles	160
7.6.5	Communication problems	129	8.4.4	Different teaching approaches	160
7.6.6	Emotional factors	130	8.4.5	Planning a second language lesson according to RNCS outcomes	162
7.6.7	Physical factors	130	8.4.6	Parental involvement	167
7.6.8	Neurological dysfunctions and perceptual problems	130	8.5	Conclusion	167
7.6.9	Intellectual impairment	130	Chapter 9: Augmentative and alternative communication		
7.6.10	Gender differences	130	9.1	Introduction	170
7.6.11	Other problems	130	9.2	Who can benefit from AAC intervention strategies?	171
7.7	Assessment of spoken language, reading and written language	131	9.3	What is AAC and why is it important in the classroom?	171
7.8	Manifestations of spoken language problems	131	9.3.1	Unaided systems	173
7.8.1	General and specific manifestations of spoken language problems	131	9.3.2	Aided systems	176
7.8.2	Problems with the dimension of language	131	9.4	AAC system selection: how to decide which system to use	184
7.9	Reading problems	132	9.4.1	Communication and language skills	184
7.9.1	The determination of learners' reading levels	132	9.4.2	Cognitive/perceptual and representa- tional skills	185
7.9.2	Manifestations of reading problems	134	9.4.3	Motor skills	185
7.10	Manifestations of written language problems	136	9.4.4	Sensory skills	186
7.10.1	Essay	136	9.4.5	Social skills	186
7.10.2	Spelling	137	9.4.6	Communication needs	186
7.10.3	Handwriting	137	9.5	Classroom strategies	187
7.11	Learning support to learners with first- language problems	138	9.5.1	Schedules	187
7.11.1	General guidelines for learning support		9.5.2	General classroom strategies	187

Chapter 10: Mathematical literacy and difficulties in mathematics

10.1	Introduction	194
10.2	Mathematics: a short overview	195
10.3	The concept “mathematics”	195
10.4	Curriculum changes in teaching mathematics at school	195
10.5	Areas, outcomes and assessment standards of mathematics to be mastered by learners in the foundation and intermediate school phases	196
10.5.1	Content to master in the area of concepts	196
10.5.2	Concepts to master in the area of process	196
10.6	Prerequisites for learners to start with formal mathematical concepts	197
10.6.1	Content level	197
10.6.2	Educational level	197
10.6.3	Development level	197
10.6.4	Emotional level	197
10.6.5	Contextual level	197
10.7	Cognitive prerequisites for mastering mathematical concepts and processes	197
10.7.1	Cognitive skills for mastering lower level mathematical concepts and processes	197
10.7.2	Cognitive skills for mastering more advanced mathematical concepts and processes	198
10.8	The development of mathematical knowledge	199
10.9	Barriers causing mathematical problems	199
10.9.1	Systemic barriers	199
10.9.2	Inadequate teaching	199
10.9.3	Barriers within the learner	200
10.9.4	Problems caused by attitudes and beliefs of parents	202
10.10	Manifestations of problems in mathematics	202
10.10.1	The importance of the role errors play in mathematics	202
10.10.2	General manifestations of mathematical difficulties	202
10.10.3	Specific manifestations of mathematical difficulties	203

10.11	Assessment and support of learners experiencing mathematical problems in the foundation and intermediate phases	204
10.11.1	Identification and assessment of mathematical difficulties	204
10.12	The teacher’s role in supporting learners with mathematical difficulties as well as a change in the approach to mathematical support	205
10.12.1	Support of learners experiencing mathematical difficulties	205
10.12.2	The mathematics lesson structure	207
10.13	Conclusion	208

SECTION E: ADDRESSING ATTITUDE BARRIERS

Chapter 11: Family and community partnerships

11.1	Introduction	213
11.2	Theoretical framework for understanding family–school–community partnerships	214
11.3	Family–school partnerships	218
11.3.1	Ecological factors related to family–school partnerships	220
11.4	School–community partnerships	226
11.5	Collaboration and its components	228
11.6	Forms of school–community collaboration	230
11.6.1	Business partnerships	231
11.6.2	Partnering institutions of higher learning	231
11.6.3	Integrated services (health, mental health and safety)	232
11.6.4	Organisations for people with impairments	233
11.7	Barriers to effective school–community collaboration	233
11.8	Conclusion	234

SECTION F: ADDRESSING DISABILITY

Chapter 12: Orientation: neurology in an educational perspective

12.1	Introduction	239
12.2	The neuron and its functions	240
12.2.1	The structure of the neuron	240
12.2.2	The synapse	242

12.2.3	Neurotransmitters	243	13B.4	Susceptibility or inclination to epilepsy	278
12.2.4	Neural development and growth	243	13B.5	Factors that may cause epilepsy	278
12.3	A few substructures of the brain	243	13B.6	Identification of epilepsy	278
12.3.1	The brain stem	244	13B.7	Epilepsy and learning	280
12.3.2	Grey matter in the centre of the brain	245	13B.7.1	Epilepsy and intellectual functioning	280
12.3.3	The cerebellum	246	13B.7.2	Types of seizure and learning	280
12.3.4	The cerebrum	247	13B.7.3	Relationship problems at school and learning	282
12.3.5	The spinal nerves	251	13B.7.4	Behaviour and emotional problems and learning	283
12.4	The role of the reticular system	254	13B.7.5	The use of medication and its possible effects on the learner and learning	284
12.5	The visual pathways	255	13B.8	Learning support to the learner with epilepsy	284
12.6	The auditory pathways	256	13B.8.1	General support to learners with epilepsy	284
12.7	General causes of brain damage	257	13B.8.2	Specific learning support to learners with epilepsy	285
12.7.1	Basic causes of brain damage	257	13B.9	Safety measures in and out of class	286
12.8	Conclusion	258	13B.10	Conclusion	287

Chapter 13A: Physical impairment

13A.1	Introduction	259
13A.2	Physical impairment	260
13A2.1	Neurologically related physical impairments	261
13A.3	Needs arising from physical impairment	267
13A.3.1	Psychosocial needs	267
13A.3.2	Mobility	267
13A.3.3	Loss of sensation and pressure sores	267
13A.3.4	Incontinence	267
13A.3.5	Other implications	268
13A.4	Support to learners with physical impairments	268
13A.4.1	Psychosocial support	268
13A.4.2	Improvement of mobility	269
13A.4.3	Prevention of pressure sores and injuries	270
13A.4.4	Care of learners with incontinence	270
13A.4.5	Improving the teaching situation	270
13A.5	Collaboration	270
13A.6	Conclusion	271

Chapter 13B: Epilepsy

13B.1	Epilepsy: a definition	273
13B.2	The nature of epilepsy	274
13B.3	Two broad groupings of epilepsy	274
13B.3.1	General seizures (centrencephalic seizures)	275
13B.3.2	Partial seizures	276
13B.3.3	Unclassified epileptic seizures	278

13B.4	Susceptibility or inclination to epilepsy	278
13B.5	Factors that may cause epilepsy	278
13B.6	Identification of epilepsy	278
13B.7	Epilepsy and learning	280
13B.7.1	Epilepsy and intellectual functioning	280
13B.7.2	Types of seizure and learning	280
13B.7.3	Relationship problems at school and learning	282
13B.7.4	Behaviour and emotional problems and learning	283
13B.7.5	The use of medication and its possible effects on the learner and learning	284
13B.8	Learning support to the learner with epilepsy	284
13B.8.1	General support to learners with epilepsy	284
13B.8.2	Specific learning support to learners with epilepsy	285
13B.9	Safety measures in and out of class	286
13B.10	Conclusion	287

Chapter 13C: Cerebral palsy

13C.1	Introduction	288
13C.2	Definition and causes of cerebral palsy	289
13C.3	The neurological levels of cerebral palsy	290
13C.4	Classifications of cerebral palsy	290
13C.4.1	The topographical classification system	290
13C.4.2	The physiological classification system	292
13C.5	Cerebral palsy and assessment of intelligence	295
13C.6	Medical and paramedical treatment	295
13C.7	Classroom support for learners with cerebral palsy	297
13C.8	Conclusion	299

Chapter 13D: Skeletal and muscular impairment

13D.1	Introduction	300
13D.2	Amputations	301
13D.3	Agensis and deformed limbs	302
13D.4	Arthrogryposis	303
13D.5	Osteogenesis imperfecta	303
13D.6	Burn lesions	304

13D.7	Other physical impairments of the skeleton and muscle systems	305
13D.8	Support to learners with physical impairment	305
13D.9	Conclusion	305

Chapter 13E: Autism and related disorders (PDD)

13E.1	Introduction: the nature of autism	307
13E.2	Characteristic features of autistic spectrum disorder	308
13E.2.1	The triad of impairments	308
13E.2.2	Commonly associated features	315
13E.2.3	Autism and secondary impairments	316
13E.2.4	Possible causal factors	317
13E.2.5	Prevalence of autism	318
13E.2.6	Long-term outcomes	318
13E.3	Educational intervention	318
13E.3.1	Principles of intervention	318
13E.3.2	Support and intervention strategies	320
13E.3.3	Placement of learners	324
13E.4	Conclusion	325

Chapter 14: Visual impairment

14.1	Introduction	329
14.2	Barriers to learning that learners with a visual impairment may experience	330
14.2.1	Barriers to learning arising from a visual impairment	330
14.2.2	Extrinsic barriers to learning experienced by learners with visual impairments	336
14.3	Support to learners with visual impairments	337
14.3.1	Support regarding the visual impairment itself	337
14.3.2	Educational support to learners with visual impairments	338
14.4	Assessment of learners with visual impairments	346
14.5	Conclusion	346

Chapter 15: Educating the deaf and hard-of-hearing learner

15.1	Introduction	348
15.2	The structure of the ear	349
15.3	Defining and describing hearing loss	350
15.3.1	Levels of hearing loss	351

15.3.2	Types of hearing loss	352
15.3.3	Age of onset and aetiology of hearing loss	352
15.4	Language and communication choices	353
15.5	Educational options for the deaf learner	357
15.5.1	The deaf learner in the mainstream school setting	357
15.5.2	Supporting the deaf or hard-of-hearing learner in the sign language environment	359
15.6	Issues in assessment	360
15.7	Conclusion	360

Chapter 16: Learning impairment

16.1	Introduction	363
16.2	Learning impairment	364
16.2.1	The term “learning impairment”	365
16.2.2	Intrinsic barriers causing learning impairment	365
16.2.3	The characteristics of learners with learning impairment	366
16.2.4	Attention deficit/hyperactivity disorder (AD/HD)	367
16.2.5	The consequences of challenging behaviour caused by AD/HD	369
16.2.6	Inadequate prerequisite skills causing difficulties in learning areas	369
16.3	Accommodation of learners experiencing learning difficulties in the classroom	371
16.3.1	Inclusive education for learners with learning impairment	371
16.3.2	Classroom management	372
16.3.3	Accommodation of challenging behaviour and AD/HD	372
16.3.4	Accommodation of social problems	374
16.3.5	Cooperative learning	374
16.4	Support to learners experiencing learning difficulties	375
16.4.1	General support	375
16.5	Conclusion	378

Chapter 17: Intellectual impairment

17.1	Introduction	380
17.2	Definition of intellectual impairment	381
17.3	Prevalence of intellectual impairment	381

17.4	Causes of intellectual impairment	382	18.5.7	Emotional responses	414
17.4.1	Extrinsic factors causing intellectual impairment	382	18.5.8	Motivation and participation	414
17.4.2	Intrinsic factors causing intellectual impairment	383	18.5.9	Memory and concentration	414
17.5	Consequences of intellectual impairment for learners	386	18.5.10	Self-esteem	415
17.6	Skills required from teachers of learners with intellectual impairment	387	18.5.11	Self-regulation	415
17.6.1	Teachers as members of a team	388	18.5.12	Self-help skills	415
17.6.2	Teachers as mediators	388	18.6	Assessment of learners with severe and/or multiple disabilities	415
17.7	General teaching support required for learners with intellectual impairment	389	18.7	Collaborative team work	416
17.8	Cognitive barriers experienced by learners with intellectual impairment and the relevant educational support required	390	18.8	Adapting the classroom for active participation	416
17.8.1	A systems model of cognition and information processing	390	18.8.1	The learner	417
17.8.2	The input phase of information processing	391	18.8.2	The activity	417
17.8.3	The elaboration phase of information processing	395	18.8.3	Teaching strategies	417
17.8.4	The output phase of information processing	399	18.8.4	The educator/teacher	418
17.9	Conclusion	400	18.9	Adapting teaching strategies	418
Chapter 18: Severe and multiple disabilities			18.9.1	Learning style	418
18.1	Introduction	406	18.9.2	Adapting teaching strategies for the learner who is deaf-blind	420
18.2	Definition and classification of severe and/or multiple disabilities	407	18.9.3	Adapting teaching strategies for the learner with physical disabilities	420
18.2.1	International Classification of Functioning, Disability and Health (ICF)	407	18.10	Conclusion	421
18.2.2	The Association for Persons with Severe Handicaps (TASH)	408	SECTION G: ADDRESSING HEALTH PROBLEMS		
18.3	Incidence	408	Chapter 19: Chronic diseases		
18.4	Causes	409	19.1	Introduction	427
18.5	Characteristics of learners who are severely and/or multiply disabled	412	19.2	What is chronic disease?	428
18.5.1	Ability to learn	412	19.3	Factors contributing to chronic disease	428
18.5.2	Cognition	412	19.4	The impact of chronic disease on the child and family, and on school success	429
18.5.3	Physical	413	19.4.1	The impact of chronic disease on the child	429
18.5.4	Sensory	413	19.4.2	The impact of chronic disease on the family	431
18.5.5	Language and communication	414	19.4.3	The impact of chronic disease on school success	431
18.5.6	Social behaviour	414	19.5	Some common chronic diseases	432
			19.5.1	Infection with the human immunodeficiency virus (HIV)	432
			19.5.2	Tuberculosis	434
			19.5.3	Malaria	435
			19.5.4	Bilharzia	435
			19.5.5	Other infections	436
			19.5.6	Diabetes mellitus	436
			19.5.7	Asthma	438

19.5.8	Hypothyroidism and hyperthyroidism	438
19.5.9	Common gastrointestinal disorders	439
19.5.10	Kidney (renal) disorders	439
19.5.11	Common nutritional disorders	439
19.5.12	Common childhood cancers	441
19.5.13	Common heart disorders	441
19.5.14	Blood disorders	442
19.6	Learning support to learners with chronic diseases	442
19.7	Conclusion	444

SECTION H: ADDRESSING CHALLENGING BEHAVIOUR

Chapter 20: Addressing challenging behaviour in the classroom

20.1	Introduction	449
20.2	Cause, nature and extent of typical challenging behaviour in the classroom	450
20.2.1	Causative factors	450
20.3	Manifestations of challenging behaviour in schools	454
20.3.1	Effects of disruptive behaviour on teachers, learners and the country	454
20.4	Strategies in dealing with challenging behaviour in the classroom	455

20.4.1	Prevention of challenging behaviour	456
20.4.2	Dealing with challenging behaviour	460
20.5	Conclusion	464

SECTION I: ADDRESSING GIFTEDNESS

Chapter 21: Addressing giftedness

21.1	Introduction	469
21.2	What is “giftedness”?	470
21.2.1	Giftedness as an interrelated system	470
21.2.2	A definition of giftedness as an inter-related system	472
21.2.3	Characteristics of giftedness	472
21.2.4	The two-sided coin	473
21.3	Unique needs of gifted learners	474
21.3.1	Characteristics as a source of problems	474
21.3.2	Relationships as a source of problems	476
21.4	Appropriate ways of teaching the gifted learner	479
21.4.1	Teaching strategies for gifted learners	479
21.4.2	A curriculum development model for gifted learners	480
21.5	Conclusion	484

PREFACE

The Constitution of the Republic of South Africa (Act 108 of 1996) provides a base for development in South African education. With regard to education, the Bill of Rights (Chapter 2 of the Constitution of the Republic of South Africa, 1996) provides that everyone has the right to education, which the State “through reasonable measure, must make progressively available and accessible”. The Department of Education goes on to state that the main objective of any education system in a democratic society is to provide quality education for all learners so that they will be able to reach their full potential and contribute meaningfully to and participate in that society throughout their lives. With the publication of the *Education White Paper 6* in 2001, South Africa has proclaimed its policy of inclusive education, the goal being the advancement of human rights as well as social and environmental justice. The National Curriculum flowing from the *Education White Paper* is particularly sensitive to diversity, including poverty, inequality, race, gender, barriers to learning, language and age. The National Curriculum takes an inclusive approach, which means that all diversities of all learners should be accommodated. That means that educators must be prepared to accept and teach a diversity of learners. Educators must now take responsibility for all the learners in their school – education for all. However, this policy is not always clearly understood by educators.

With the publication of this book, the contributors hope that prospective and current educators will be better prepared to teach all the learners in their class groups.

The barriers to learning as captured by the *Education White Paper 6* were taken as a point of departure to divide the book into nine parts. Although the book refers to these barriers (mainly for the sake of preventing barriers to learning and for the identification of learners who may experience them), the focus is mainly on support within the classroom. Many case studies are used to illustrate how support could be rendered.

In **Section A** the background to inclusive education is discussed with guidelines for implementation. Bronfenbrenner’s bio-ecological approach is used as a framework for the implementation of inclusive education.

In **Section B** the socio-economic barriers to learning are discussed to make educators aware of the circumstances in South Africa that may contribute to barriers to learning that may prevent learners from achieving their potential.

Section C (addressing educational barriers) covers assessment of learners and the implementation of support as envisaged by the Department of Education. As early childhood learning is of the utmost importance, early childhood intervention to support reception-year educators in their teaching is included. Although Life Skills is part of the curriculum, educators need to understand that life skills should feature in every encounter they have with learners.

In **Section D** literacy barriers are addressed. This includes support to address first language, second language and mathematical literacy difficulties. A chapter on augmentative and alternative communication strategies concludes this section.

In **Section E** the emphasis falls on attitude barriers – the attitudes of parents, the school and the community towards learners that may cause barriers to learning. Sound collaboration between these parties may help to prevent or alleviate barriers to learning.

In **Section F** a variety of impairments is discussed which may contribute to barriers to learning according to the *Education White Paper 6*. A chapter on brain development and neurology is included to highlight the importance of sound brain development and to prevent brain injuries that may contribute to learners not achieving according to their potential. The relevance of medical knowledge as opposed to the medical deficit model is addressed. Knowledge of the impairments would help educators to know how to take the specific impairment into account when providing learning support. The term

“learners with impairments” rather than “disabled learners” is used throughout this part to emphasise the fact that learners with impairments need not be disabled if they are identified early in life and receive the best possible learning support. Support to learners with impairments should be holistic and all stakeholders that could contribute to addressing barriers that learners with impairments may experience should come on board. However, in Chapter 18 where severe and multiple disabilities are discussed, the contributor is of the opinion that because of the severity of the difficulties these learners may experience, they may nevertheless be disabled by society and their environment.

Section G covers health problems and, more specifically, considers a variety of chronic diseases and their educational implications.

Section H covers the causes and manifestations of challenging behaviour (behaviour problems) as well as prevention and support.

The last part, **Section I**, addresses giftedness, and support to learners who are gifted is emphasised.

Throughout the book, the term “educator” is used when referring to adults who are responsible for the education of learners in general; for example, “educators” in the school environment includes everybody participating in the education of learners. When referring to the classroom, the term “teacher” is used. The term “parent/s” includes the biological parents and caregivers responsible for the upbringing of children.

It is the wish of the contributors that this book will play a part in addressing the needs of educators in our schools. Educators need to be empowered to successfully implement the policy of inclusive education, otherwise learners who experience barriers to learning will be marginalised and unable to contribute to the development of South Africa.

Although the term “he” is used in many instances in the book, both genders are included.

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**Section
A**

Introduction

A FRAMEWORK FOR UNDERSTANDING INCLUSION

1

ESTELLE SWART & RAINE PETTIPHER

Learning outcomes

After reading this chapter you should be able to

- ▶ understand the concept of inclusion
- ▶ understand Bronfenbrenner's bio-ecological model and know how to implement it
- ▶ understand inclusive education in South Africa.

Key terms

inclusion ♦ *medical or deficit model* ♦ *normalisation*
♦ *mainstreaming* ♦ *social ecological model* ♦ *bio-ecological model* ♦ *socio-critical perspective*

1.1 INTRODUCTION

Inclusion is a complex concept. Therefore to understand it and what it entails requires a comprehensive theoretical and philosophical framework, drawing from theories of human development and educational change, analysing paradigm shifts in educational support as well as insight into historical, social, political and educational processes, both internationally and nationally. Inclusion in schools requires informed practitioners with a sound theoretical knowledge base from which informed decisions can be made. This chapter introduces you to the important theories that can inform the development and implementation of inclusion in South Africa. This is an introductory chapter to understanding inclusion from a theoretical and philosophical perspective and cannot fully give credit to the complexity and extent of the topic. It is recommended that you use this chapter as a lens or road map to guide

your readings and the practical decisions you make throughout the course of this book and your own practice.

1.2 WHAT IS INCLUSION?

The term “inclusion” has become something of an international and national buzzword. It can easily become a cliché if individuals do not possess an in-depth understanding of its meaning and examine closely the underlying values it is based on. The making of inclusion into a buzzword is evident when reading policy documents, newspaper articles or listening to media statements. On the other hand, readers can become easily confused when confronted with the multiple definitions of inclusion offered in international literature. Inclusion has come to mean different things to different people, to such an extent that authors such as Dyson (2001), Florian (1998) and Meijer et al. (1997) make us aware of the varieties of inclusion that exist in different international contexts. However, despite the different interpretations of the concept and the diverse ways it is implemented in different contexts, there are a few commonalities which run across all varieties of inclusion. These include broad principles such as a dedication to

building a more democratic society, a more equitable and quality education system, and a belief that extends the responsibility of regular schools to accommodate the diverse learning needs of *all learners* (Dyson 2001).

In a wider sense, inclusion is about *developing inclusive community and education systems*. It is based on a value system that invites and celebrates diversity arising from gender, nationality, race, language, socio-economic background, cultural origin and level of educational achievement or disability (Mittler 2000: 10). It is about including everyone, regardless of ability, gender, language or disability, so that all learners can belong in school and have access to the educational outcomes that schools offer. Inclusion is about more than “special needs” or disabilities, and is concerned with comprehensive education, equality and collective belonging (Thomas & Loxley 2001: 118). Inclusion can also be seen “as an expression of the struggle to achieve universal human rights” (Mittler 2000: 12) and has its origins in the international human rights movement. Inclusion is a worldwide movement and has a “global agenda” (Pijl et al. 1997). Therefore an understanding of both the international and South African context is necessary to understand the different varieties and interpretations of inclusion.

To understand why so many countries, including South Africa, are moving from segregated to more inclusive education systems that accommodate all learners, it is necessary to analyse the processes and goals of education as well as how educational systems reflect different views about differences among learners.

1.3 INCLUSION IN AN INTERNATIONAL CONTEXT

1.3.1 Changing paradigms

Schools do not function in isolation, but are influenced by economic, political and social developments. What happens in schools is a reflection of the developments and changes in society. As those who work in schools are citizens of their society and local community, a society’s values, beliefs and priorities will influence the life and work of schools. Societies are undergoing fundamental changes as they undergo transformation

from industrial to informational and from national to international societies (Karagiannis et al. 1996: 9). Traditional conventions of schools and classrooms are therefore rapidly becoming outdated as the educational, social and political needs of our society continually change. At the same time societies are becoming more diverse and multicultural, resulting in classrooms consisting of learners from diverse ethnic, linguistic, cultural and socio-economic backgrounds and with diverse abilities (Frederickson & Cline 2002: 4). A logical response to the rapidly evolving social, political and economic contexts is to create schools that are grounded in democratic principles and constructs of social justice. All schools need to support the concept of equal educational opportunities for all learners by ensuring access for all learners, including those who experience barriers to learning.

Do you think that the school where you are teaching makes provision for a diversity of learners? Do you think all learners receive equal educational opportunities?

Take the following into consideration: Do all learners have physical access to the school (are transport and the buildings accessible)? Is the curriculum being adapted so that a diversity of learners is able to access it? Are the teachers motivated and able to teach a diversity of learners? Can all learners afford the school fees?

ACTIVITY

Throughout history, changes in society are frequently paralleled with alternative ways of thinking, or new paradigms about human nature. This has been the case specifically in the field of learning and behaviour difficulties. According to Skrtic (1995: 4), a paradigm or world-view is “... a shared pattern of basic beliefs and assumptions about the nature of the world and how it works. These assumptions tell us what is real and what is not; they shape our cultural identity and guide and justify our institutional practices.” In this sense paradigms are enabling, but also possess the potential of being restrictive when still applied in the light of new theories and knowledge that attempt to

better explain the nature of the world. In the next few paragraphs two of the most prominent paradigms related to disability and educational support will be critically discussed. These include the medical model and the social ecological model.

1.3.2 The medical model

The shift to inclusion is not separate from the shift in paradigms that occurred in the early 1970s and 1980s. In education this led to a radical shift from a **medical deficit** or **within-child model** to a social systems change approach. These models have been widely described by writers in the field of disabilities and special education (Ainscow 1998; Bailey 1998; Ferguson 2002; Mittler 2000; Skrtic 1995; Thomas & Loxley 2001). Professionals used these models not only as explanatory frameworks, but also to direct their ideas and beliefs which they demonstrate in their methods, behaviour and conversations. A shift in paradigms does not necessarily imply an overnight change in practices. While inclusion is very prominent in education today, the medical model is still frequently used as an explanatory framework.

The medical or within-child model, which was popular from early in the 1900s, is ultimately a model of diagnosis and treatment. In terms of medicine, the field of its origins, it is highly focused on pathology, sickness, the nature and aetiology of the presenting problem, and dealing with the specific pathology in a centred way. Such a medical model is fine in its place, if one thinks about the role of a medical doctor which is to find out “what is wrong” with people and to “fix them up”. However, it is less helpful when one is working in the social sciences where the location of barriers is frequently not only within the person, but can also be situated in the community.

When applying this model in the field of education, children with any type of difference or more specific disability are singled out and the origin of the difference is looked for within the learner. The professionals supporting this view tend to follow the “find-what’s-wrong-and-cure-it” paradigm. This implies that a thorough assessment of the child’s strengths and weaknesses needs to be conducted, and where possible a diagnosis made for placement in a specialised environment and,

inevitably, categorisation and labelling. Labels such as AD/HD (attention deficit/hyperactivity disorder), learning disabled, EBD (emotional and behavioural disorders) and dyslexic are easily attached to children and therefore such children are often separated and treated differently. In the previous segregated education system such labels determined the type of special school, class or form of “remedial attention” the learners and their families required. Thus learners who did not “fit into” the existing education programme were often moved to special schools or classes, in order to “fix” them and alleviate their differences. Such education aimed to offer the learner a special curriculum and interventions by specialist staff or experts that were aimed at removing or alleviating the deficiencies from *within the child*. A further rationale for separate education was that it was for the benefit of the learner as well as for the benefit of the majority of learners not labelled with a disability. Key concepts associated with the medical deficit model include “special educational needs”, “handicap”, “disability”, “defect”, “deficiency”, “remedial”, “diagnostic”, “cases”, “prognosis”, “prescriptive”, “segregation” and “exclusion”.

From the above it should be evident how the paradigm of the time framed and determined the roles and actions of educators and professionals, as well as the segregated structure of the education system. Teacher training qualifications were also divided between those which served the needs of “ordinary” learners in general classes, and those which focused on providing trainees with “special” skills to teach in specialised settings. Possessing such “specialised” knowledge and skills elevated the educator or professional to that of an expert. This meant that special educators and other professionals were the only knowledgeable ones in assessing, identifying and treating the disability within the learner. The education support professional’s role was therefore seen as indispensable and “cure” was not possible without the professional’s intervention.¹ Such claims are not unfounded but based on positivist philosophy that asserts that scientific knowledge is objective, empirical and observable and therefore the only source of correct knowledge about reality. This philosophy has subsequently been

challenged with a subjective philosophy that has given rise to more social and ecological theoretical models.

Comparison between different discourses and related educational and professional practices

Continuum	Medical paradigm	Inclusion
Intention	Segregation and exclusion	Integration and inclusion
Actions	Change the individual Fix the child to "fit in" Interventions predominately by specialist personnel Special placement	Change the system Develop different systems to support the child Collaboration between all role-players including specialist personnel As far as possible in mainstream
Discourse	Medical deficit	Social-critical, bio-ecological
Power	Systems and professionals	Parents, learners, school and district-based support teams

Although the medical model is rejected as a single explanation, prominent authors such as Mittler (2000: 3) are of the opinion that "... it is still part of the general consciousness of almost everyone who works in education". It is deeply ingrained into the thinking of generations of teachers, parents, professionals and legislators and is not going to change rapidly, even though it is argued that it is discriminatory and limiting. Traces of the medical model are still evident in educational and psychological policy, practice and attitudes today. However, medical information cannot be ignored completely and is still necessary as the current conceptualisation of a person's functioning and

disability is conceived of as a *dynamic interaction between biological, individual and social perspectives* (cf Bronfenbrenner's bio-ecological model).

1.3.3 The social ecological model

Criticism of the medical model has led to more social and ecological theoretical models (Bailey 1998). It became increasingly evident that a paradigm shift was required that involved a refocusing away from the "specialness" of learners and the "special" forms of provision they were seen to "need", towards the removal of stumbling blocks within society and the participation of all people, especially those with differences, in the everyday life of society (Florian et al. 1998). Related to this is the changing of attitudes, regulations and institutions that create and maintain exclusion. A shift in paradigm became more visible when **normalisation** was introduced. In Western societies the idea of normalisation came to the fore in the late 1960s. Normalisation had its origins in Scandinavia before being popularised in the United States. Normalisation can be defined as "making available to all handicapped people patterns of life and conditions of everyday living which are as close as possible to the regular circumstances and ways of life of society" (Nirje 1976 in Du Toit 1996: 7). This means that people with "handicaps" have the right to a "normal"² daily routine, which involves "normal" school and home circumstances, "normal" respect from others, "normal" economic and environmental standards and so on. This normalisation philosophy was in direct conflict with the earlier practice of separate schools, and soon gave rise first to mainstreaming and then to integration policies.

The terms "mainstreaming" and "integration" are often used interchangeably in the literature to mean the same thing. However, this is not the case and while they are closely related, there appear to be subtle differences in goals, processes and available services between the two. The interpretation of the terms is further complicated because they are also used differently in different parts of the world. "Mainstreaming" is a term most commonly used in the United States, while the term "integration" is more frequently used in European countries (Farrell 2000; Pijl et al. 1997).

After reading about the medical model, think about your own environment and community and identify examples of practices where the medical model is evident. Write down what you have learned about this model from your observations.

In the light of this, both mainstreaming and integration need to be understood, studied and evaluated as processes within a given educational and geographical context. Furthermore, differences between mainstreaming, integration and inclusion cannot be authoritatively summarised because there is at this stage insufficient evidence and consensus to justify this (Mittler 2000: 10). Therefore, the discussion that follows is an attempt to highlight the principles of mainstreaming and integration that are consistently referred to in international literature.

Mainstreaming is the educational equivalent of the normalisation principle which suggests that people with disabilities have a right to life experiences that are the same as, or similar to, those of others in society. The goal of mainstreaming is to return learners with disabilities to the mainstream of education as much as possible, alongside normally developing peers. It was implemented in countries such as the United States by having learners with disabilities “visit” general education classes for relatively short periods of time, most commonly in the non-academic portions of the general education programme such as art, music and physical education (Turnbull et al. 2002: 77). Most of these children were still enrolled in self-contained special-education classes, therefore mainstreaming usually only applied to some learners and most particularly those with mild disabilities. Learners needed to prove their readiness to “fit into” the mainstream as few, if any, special services followed the learner into the mainstream. Supporters of mainstreaming therefore assumed that a learner must “earn” the opportunity to be mainstreamed by demonstrating the ability to “keep up” with the work assigned to other learners in the class. If special education provision was necessary, it was provided in special environments such as self-contained classes³ and resource rooms.⁴ When “mainstreaming” a learner, the school and classroom remained largely unaltered and so the setting never had to prove its readiness to accept a child. On reflection it is evident that mainstreaming, to a large extent, maintained and reinforced the medical discourse with its focus on the problem within the individual and about disability as different and in need of repair in order to “fit in”. This model has been heavily

criticised in the past (Ainscow 1999: 7) for not providing learners with sufficient support to benefit from regular education. Among others it has been referred to as “mainstream-dumping”, “dump-and-hope” (Corbett 2001) or “mainstreaming by default” (Department of Education 1997: 1; Department of Education 2001: 17).

Unlike mainstreaming, **integration** relies heavily on social and political discourse. Humanitarian and civil rights issues originally drove policies leading to integration. An example of the merging of civil rights and professional understandings of disability is the United States’ Education of the Handicapped Act of 1975 (now the Individuals with Disabilities Education Act, IDEA). This emphasised the democratic right of every child to public education. In contrast to mainstreaming, the goal of integration is to ensure that learners with disabilities are assigned equal membership in the community. Integration aims to maximise the social interactions between the “disabled” and the “non-disabled”. However, since the concept of integration did not specify what exactly was to be done instead of exclusion and segregation, many different interpretations and examples resulted. While some interpretations emphasised a more political agenda, others attempted matching provision to need. Hence, with the necessary policy in place, integration involved more extensive and holistic participation of learners with disabilities in relation to mainstreaming, while significant instructional time in separate settings still prevailed. A further aspect that differentiated mainstreaming from integration was that in integration these special services followed the learner to the regular school. However, only a limited number of additional provisions were made and the onus was still on the learner to “fit in” (Frederickson & Cline 2002: 65). It is the opinion of Ferguson (1994: 1507) that integration’s promise of a mainstream that tolerated and perhaps incorporated more differences in abilities remained largely unfulfilled. However, it is hoped that with the introduction of inclusion during the last two decades of the 20th century, the promise of accommodating diversity in its fullest sense will be realised.

Inclusion is therefore about an extension of the comprehensive ideal in education. Much changed

in the political climate of the last decade of the 20th century. A new ethic took shape around the mid-1990s, characterised by talk of an “inclusive society” and a “stakeholder society”. This replaced the earlier ethic of individualism, competition and “winner-takes-all”. Changes have been possible in thinking about inclusion in education, because of changes in society. Therefore there are real differences in values and practices between integration and inclusion (Mittler 2000: 10). In this sense, *inclusion can be described as a reconceptualisation of values and beliefs that welcomes and celebrates diversity, and not only a set of practices.*

The inclusive education approach received its first major impetus at the World Conference on Special Needs Education 1994 in Salamanca, Spain. The purpose of the Salamanca Conference was to further the objective of education as a fundamental human right by paying attention to the fundamental policy shifts necessary for the development of inclusive education. These needed to be aimed at enabling schools to serve all learners, including those experiencing barriers to learning. Further, acknowledgement was given to processes such as education systems that recognise and respond effectively to diversity. The emphasis was therefore on developing inclusive education systems that

... accommodate *all children*, regardless of their physical, intellectual, social, emotional, linguistic or other conditions. This should include disabled and gifted children, street and working children, children from remote or nomadic populations, children from linguistic, ethnic, or cultural minorities and children from other disadvantaged or marginalised areas or groups (Unesco 1994: 6).

These inclusive education systems

... must recognise and respond to the diverse needs of their students, accommodating both different styles and rates of learning and ensuring quality education to all through appropriate curricula, organisational arrangements, teaching strategies, resource use and partnerships with their communities (Unesco 1994: 11–12).

This was based on the following educational, social and economic grounds:

- The education of all learners together requires developing teaching practices that accommodate individual differences and therefore benefit all learners.
- Inclusive schools foster social inclusion thereby valuing and embracing differences and nurturing attitudes of acceptance and respect. This forms the basis for a just and non-discriminatory society.
- Educating all learners together is a more cost-effective way of delivering education for all learners.

The Salamanca Statement provides a vision, creates a standard and provides a benchmark for measuring progress in schools (Lipsky & Gartner 1997: 258).

Fundamental school renewal and restructuring is therefore essential for implementing inclusion (Lipsky & Gartner 1997: 257). Inclusive education shifts the focus from the learners having to adjust to “fit into” the systems, to the schools transforming themselves to be capable of accommodating and addressing the diverse needs of all learners so that each individual learner receives a learning experience that “fits”. Such transformation efforts are not possible without a radical shift from one set of assumptions, beliefs, values, norms, relationships, behaviours and practices to another, based on values of mutual acceptance, respect for diversity, a sense of belonging and social justice. These moral requirements need to culminate in

- an expression of commitment to nurturing a genuine respect for all people
- combating prejudice and discriminatory practices
- utilising human resources to the mutual benefit of all
- acknowledging the rights of all learners to access equitable educational opportunities
- developing a flexible curriculum that addresses the diverse needs of all learners (Lazarus et al. 1999).

It is evident that inclusion is a multidimensional and challenging process, and a deep understand-

ing of the elements of inclusion is therefore necessary. Schools wishing to explore what is involved in implementing inclusion can now consult a variety of resources, for example the *Index for inclusion: developing learning and participation in schools*. In the *Index for inclusion* (Booth et al. 2000) three dimensions of an inclusive school are emphasised allowing schools themselves to take control in creating the type of inclusive education which is effective in their context and for their specific learners. Each dimension consists of two sections. Dimension A is concerned with *creating inclusive cultures* which involves creating a secure, accepting, collaborating, stimulating community in which everyone is involved, which forms the foundation for the performability of all learners. Dimension B focuses on *producing inclusive policies* aimed at developing a school for all and organising support to respond to learner diversity. Dimension C is about *evolving inclusive practices* that reflect the inclusive cultures and policies of the school. Teaching and support are integrated together in the orchestration of learning and the overcoming of barriers to learning and participation. These three dimensions reinforce the belief that inclusion is “a journey without an end” (Mittler 2000: 113) and not a destination, and that the process differs from school to school. However, the goal for every school needs to be the establishment of an inclusive school climate and culture that infiltrates every aspect of school life.

Earlier on in the chapter we analysed some of the concepts and language closely associated with the medical model. Clearly, language reflects the social context in which a paradigm is developed and can be a powerful tool. It therefore stands to reason that to facilitate the change to inclusion, the terminology we use needs to reflect the vision and contribute to its realisation. Terminology associated with the paradigm of inclusion includes concepts such as *barriers to learning* instead of special needs, *learning support* as a preferred term to remedial education and *systems changes* in comparison to changes within the individual. A further shift also includes the manner in which learners with impairments are referred to. Although still a much debated issue, using “person first” language (e.g. “learners with impairments”, instead of “impaired” or “disabled learn-

ers”) is preferred and reflects the inclusive value of human diversity.

In this section we have discussed the concept *inclusion* by examining its international development, which has been closely related to shifting paradigms in educational support. The subsequent section in this chapter extends the theoretical and philosophical framework further by discussing the concepts *systems*, *context* and *barriers to learning* in more detail and their related theoretical frameworks. *Theory* can be defined as a set of ideas, assumptions and concepts ordered in such a way that it tells us about the world, ourselves or an aspect of reality. Any theory needs to be subjected to a process that involves falsification, allowing us to eliminate inadequate theories and thereby providing a better grasp of reality. In other words, theories are not fixed and therefore not ultimate truths and the full complexity of life cannot be captured by a single theory. Theories continuously change as people actively engage with them, and theory development is therefore an ongoing activity (Skrtic 1995: 21; Green 2001: 6; Donald et al. 2002: 8). The usefulness of theory lies in its ability to provide a set of organised principles that together with contextual knowledge can generate insights into specific situations. The theory is, however, not synonymous with a “recipe” or “prescription” (Green 2001: 7). The theory presented here forms the background for understanding the historical development of inclusion in South Africa, the nature and management of barriers to learning and the implementation of inclusion. It also serves as an alternative framework for the linear models of the past.

1.4 BRONFENBRENNER’S ECOLOGICAL AND BIO-ECOLOGICAL MODELS

As indicated above, the major challenge of the education system is to understand the complexity of the influences, interactions and interrelationships between the individual learner and multiple other systems that are connected to the learner from an ecological systems theory or systems change perspective. The framework for the ecological systems theory as described in this chapter is based on the past and more recent work by Bronfenbrenner (1979; 1992; Bronfenbrenner &

Morris 1998; Bronfenbrenner & Ceci 1994). Bronfenbrenner's model is an example of a multidimensional model of human development. Such models suggest that there are layers or levels of interacting systems resulting in change, growth and development, such as physical, biological, psychological, social and cultural. What happens in one system affects and is affected by other systems. In other words, relationships among causes are reciprocal (see discussion below on systems theory) and multifaceted. Multidimensional models are useful in describing development as well as the complex, causal processes involved in many other kinds of change. Examples of such change include qualitative, transforming changes, for example changing from a traditional to an outcomes-based education curriculum, or from an exclusive to an inclusive education system. It also includes continual, incremental variations that can be reversible, such as learning and then forgetting new information.

In the field of inclusive education, Bronfenbrenner's ecological model and the more recently revised bio-ecological model of development have much relevance to emphasising the interaction between an individual's development and the systems within the social context. This in turn reminds us why the general challenges of development cannot be separated from the more specific challenges of addressing social issues and barriers to learning, especially within the South African context. They are all connected with each other. Subsequently, understanding the origins, maintenance and solutions to barriers to learning cannot be separated from the broader social context and the systems within it, including the individual. The model is also useful in understanding classrooms, schools and families by viewing them as systems in themselves (Christenson & Sheridan 2001; Frederickson & Cline 2002: 212) and in interaction with the broader social context. This section builds on previous interpretations of Bronfenbrenner's work in South Africa. Donald et al. (1997: 33) used the ecosystemic and constructivist perspectives to explain "individual people in relation to their social context". Engelbrecht (1999: 3) adapted the ecosystemic perspective and suggested a meta-approach for understanding inclusive education "by means of contextual

analysis and synthesis", once again emphasising the importance of the different levels of the whole social context that interact in complex and dynamic ways.

Central to Bronfenbrenner's model of the 1970s as well as his recent work (1998) are four interacting dimensions or properties that need to be considered when understanding child development (or any other kind of change) in context:

- **Person factors** (e.g. behavioural tendencies that either encourage or discourage certain kinds of reaction from others)
- **Process factors** (e.g. the patterns of interaction that occur in a system)
- **Contexts** (e.g. families, schools, classrooms and local communities)
- **Time** (changes over time due to maturation in the individual as well as changes in the environment)

A major contribution of the often-cited 1970s model is the emphasis it placed on contexts. Person and process factors as well as the time dimension received further explanation in the later description of the bio-ecological model. In the 1970s Bronfenbrenner developed a complex ecological model that explains the direct and indirect influences on a child's life by referring to the many levels of environment or contexts that influence a person's development. He suggested that it is helpful to conceive of the environment or social context as "a set of nested structures, each contained inside the next like a set of Russian dolls" and therefore interrelated (Bronfenbrenner 1979 in Frederickson & Cline 2002: 110). These nested structures, contexts or environmental systems include the **microsystem**, the **mesosystem**, the **exosystem** and the **macrosystem**. These all interact with the **chronosystem** as illustrated in Figure 1.1.

- **Microsystem.** This system constitutes a pattern of activities, roles and interpersonal relations experienced between individuals and the systems in which they actively participate, such as the family or the school or the peer group. The microsystem is therefore the immediate environment where proximal processes (for a definition of proximal processes, see page 13) are

played out. It is characterised by those individuals and events closest to one’s life, and involves continual face-to-face contact, with each person reciprocally influencing the other.

- **Mesosystem.** The mesosystem refers to the relationships that develop and exist between these microsystems. In short, a mesosystem is a system of microsystems. At this level the family, school and peer group interact with one another, modifying each of the systems. For example, a learner from an unsupportive home environment may not receive the emotional support he requires, thus placing that learner at risk of developing possible barriers to learning. However, the learner may also have an attentive and caring teacher who is able to provide a positive environment which over a sustained period boosts the learner’s self-esteem and sense of security. Thus the experience in

the microsystem of the school can protect him to an extent from the psychological effects of the unsupportive environment at home. In addition, implementing inclusion is not possible without paying attention to developing relationships between the different microsystems, for example school–family partnerships.

- **Exosystem.** This refers to one or more environments in which the developing learner is not involved directly as an active participant but which may influence or be influenced by what happens in settings and relationships that directly influence the learner. Examples include the education system, health services, the media, a parent’s place of work or a local community organisation. Thus a parent’s stressful relationship with an employer does not involve the learner directly, but can possibly influence the quality of that parent’s relationship with

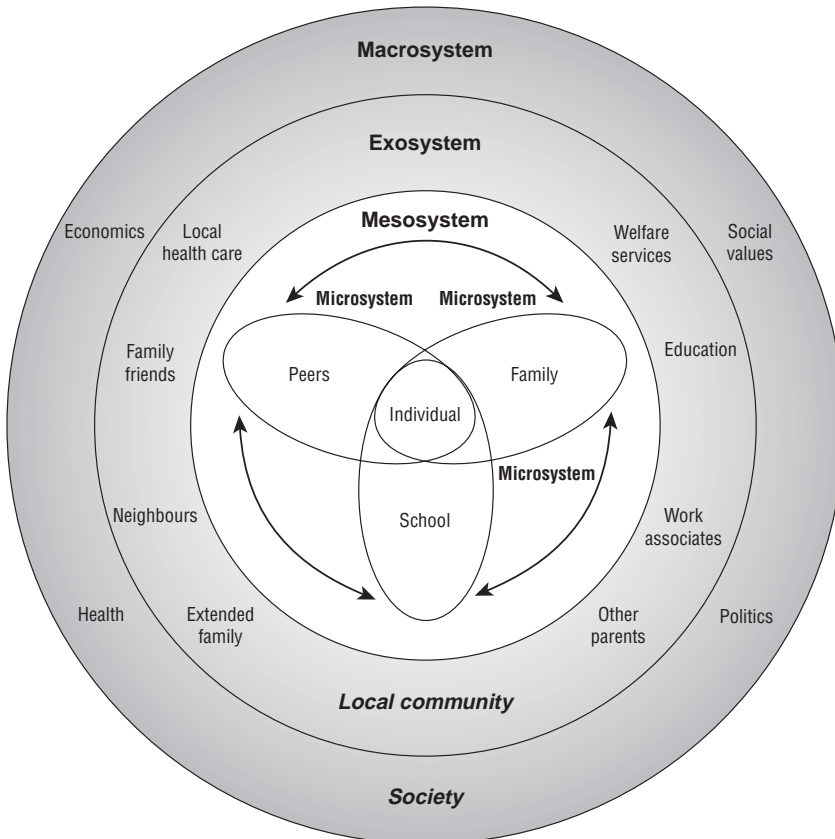


Figure 1.1 Ecosystemic model layout

the learner and other microsystems in which the learner has proximal relationships, such as the peer group. The same applies to poor health services. If a learner is chronically ill and frequently absent from school as a result of poor health services, it will influence his relationships with his parents, teachers and peers as well as his school work.

- **Macrosystem.** This refers to the attitudes, beliefs, values and ideologies inherent in the systems of a particular society and culture which may have an impact or be influenced by any of the above systems. Examples of values and beliefs could include democracy, social justice and *ubuntu*.⁵
- **Chronosystem.** The chronosystem refers to the developmental time-frames which cross through the interactions between these systems and their influences on individual development. An example of this would be the developmental process which a family undergoes in which there might also be a child who is in a process of development (families with babies and toddlers experience different interactions and processes from a family with teenagers and children leaving home). This in turn interacts with a child's progressive stages of development.

A key component of Bronfenbrenner's model is the understanding that children are also active participants in their own development, and the environment therefore does not simply impact on the child. Children's perceptions of their context are central to understanding how they interact with their environments. The way they perceive their circumstances influences the way they respond to their human and physical contexts.

An example of this is a learner who experiences maths anxiety. The learner's anxiety is generalised to any activity involving figures. This means that when asked to work out the money he needs to buy something, the learner is frequently overcome with anxiety which prevents him from completing the task. What other examples can you provide?

Integral to understanding Bronfenbrenner's model of human development is general systems theory. Systems theory is comprised of principles such as the following:

- In adapting to internal and external change, systems attempt to maintain a **dynamic balance**. This is also referred to as *equilibration*.
- **Circular causality** is the opposite to the linear model of cause-and-effect frequently associated with the medical model (see the box on page 13 for everyday examples of linear thinking). In essence the theory of circular causality states that change (or activity) in any part of a system or individual affects other systems and individuals and at a later time could be seen as a cause for change. Changes in society, such as a new government and educational policies, affect families and schools and vice versa. A further example is the influence of the birth of a child with a disability on a family and the simultaneous influence of the family on the child. This is also often referred to as *reciprocity*.
- The whole system is greater than the sum of its parts. A school which encourages **reciprocal relationships**, also referred to as *synergism*, between parents, learners, the community and other organisations is more effective than one that does not interact with other systems.
- **Rules** are vital to the effective functioning of a system and maintain the intactness of the system. Rules serve to organise the respective interactions and operate to maintain a stable and consistent system. Difficulties arise when the rules and values of each system are not discussed and shared, often resulting in miscommunication or stereotyping. Therefore, when there is interaction between different systems, a set of operating rules for the entire overarching system is critical. For example, in parent-school partnerships significant attention needs to be given to the rules and values of both systems and the commonalities and differences between them. Only after this can a mutually agreed set of rules be established.

Everyday examples of linear thinking for a learner's lack of progress

A learner does not make progress because

- the parents are not interested or involved
- he works too slowly and cannot read
- his parents are divorced
- he comes from a very poor background
- his father is an alcoholic
- the classes are too big
- the new curriculum does not work.

We know that these examples need not lead to a learner's lack of progress in school. There are many examples of people who come from poor backgrounds and/or broken families who have progressed in society. Can you also provide examples of learners who have achieved at school despite these drawbacks? What "counteracts" these factors and helps or influences them to achieve?

Bronfenbrenner's theory is important with regard to inclusion. Given the shifting paradigm referred to earlier, the ecological systems theory illuminates the complexity of the interaction and interdependence of multiple systems that impact on learners, their development and learning. To understand the whole, the relationship between the different parts of the system needs to be examined. This means that an action or change on one level cannot be seen as the *cause* for an action on another level. Consequently we can only understand why things are as they are at any stage by comprehending the continuous dynamic interaction and interplay between these multiple influences. On a practical level, this implies that when a learner or any other system such as a peer group, family or school experiences difficulties, *a true ecological systems thinker never debates whether the cause or the solution is situated in one single system, but considers the interdependence between all the systems.* Each system therefore possesses critical, contributing factors and not causes. From this perspective while one works with individuals such as a parent, teacher or a learner, one never loses sight of the entire system (the whole picture) in

which the individual functions. Efforts are directed at synergising the system as a whole "with the goal of helping the system work better for the individual" (Christenson & Sheridan 2001: 41).

After many years of research and revision, Bronfenbrenner has developed a revised model of human development which is now called the **bio-ecological model**. This model is still evolving, but its current format was written about in publications in the 1990s. The bio-ecological model incorporates features of the earlier version of the model and integrates them with new elements into a more dynamic and complex structure (Bronfenbrenner & Morris 1998: 993). The discussion that follows highlights essential changes and elements in the model, but does not discuss the complex nature of the model in detail. For a more advanced and detailed discussion on the bio-ecological model you need to consult the sources referred to in the bibliography.

As in the previous model, Bronfenbrenner still emphasises the four principal components of the model, namely processes, person, contexts and time. In the bio-ecological model, the characteristics of these components and their interaction with each other are extended in order to fill in the gaps of the previous model. **Process** now constitutes the core of the model and has been specifically described to refer to "... particular forms of interaction between organism and environment, called *proximal processes*, that operate over time and are posited as the primary mechanisms producing human development" (Bronfenbrenner & Morris 1998: 994). These proximal processes need to involve progressively more complex reciprocal interaction between an active human and the persons, objects and symbols in his immediate environment. For the interactions to be effective they must occur on a regular basis and over extended periods of time so as to become more complex. Examples of proximal processes involving interactions with people and objects include feeding a child, learning to ride a bicycle or drive a car, reading and writing, planning, caring for others in distress, teaching and many others.

Person characteristics have also received renewed attention (Bronfenbrenner & Morris 1998). In previous ecological models much more attention was given to the nature of developmen-

tally relevant environments, while person characteristics were ignored. It is these person characteristics that are generally regarded as biologically based, and influence proximal processes and their developmental outcomes, from which the name “bio-ecological” arises. In the bio-ecological model three types of person characteristics are identified as being instrumental in shaping the course of future development through their ability to influence the direction and power of proximal processes. The first are **dispositions** or forces which can mobilise proximal processes and sustain their operation, or conversely interfere with, limit or even prevent their occurrence. Examples of these different types of dispositions include impulsiveness, distractibility, aggression and violence, feelings of insecurity, shyness, unresponsiveness, or by contrast, characteristics such as curiosity and responsiveness to initiatives by others. Next are **ecological resources** that consist of biopsychological liabilities and assets that influence the capacity of the person to engage effectively in proximal processes. Examples of liabilities include genetic defects, low birth weight, physical impairments or damage to brain function. In contrast, developmental assets take the form of abilities, knowledge, skill and experience that can extend the domains in which proximal processes can do their work. Thirdly, there are **demand characteristics** that are so called due to their capacity to provoke or discourage reactions from the social environment that either foster or disrupt psychological processes of growth. Examples of these characteristics include a fussy or a happy baby, or hyperactivity versus passivity. These person characteristics are in constant interaction with each other, thereby accounting for differences in the direction and power of resultant proximal processes and their developmental effects.

Consequently these new formulations of person characteristics that shape the person’s future also influence the conceptualisation of the original 1979 model of the environment in terms of nested systems ranging from micro to macro. In the bio-ecological model the environment is still conceived of as a set of nested structures, but the definition of especially the micro- and macrosystem is expanded upon and specified in more detail

(Bronfenbrenner & Morris 1998; Bronfenbrenner & Ceci 1994). Of importance is the elaboration of the definition of the microsystem to recognise significant others, other than the developing individual, as present and participating in the setting to also possess distinctive person characteristics of temperament, personality, or systems of belief that influence development. Such characteristics can invite, permit, or inhibit engagement between the individual and significant others. In addition, the development of proximal processes involving interaction not only with people but with objects and symbols as well is further emphasised.

ACTIVITY

These personal characteristics also feature in the different learning styles of learners. Some learners need visual material to support them in their learning; some learners want learning material broken up into smaller amounts; others first want to see the whole picture before the material is broken up; some learners prefer studying with background music; others prefer studying in a quiet place, etc. Do you make provision for the different learning styles of the learners in your class in your teaching?

Person characteristics also need to be considered in a definition of the macrosystem. **Systems of belief** are developmentally instigative personal characteristics that are contextually bound. Development of one’s characteristics as a person depends to a large extent on the options that are available or not in a given culture at a given point in time. Therefore Bronfenbrenner not only broadened our understanding of what constitutes the macrosystem, but also the importance and significance of this system for human development. Within the macrosystem, the micro-, meso- and exosystems share common patterns of characteristics, such as similar belief systems, social and economic resources, “... hazards, life styles, opportunity structures, life course options, and patterns of social interchange that are embedded in each of these systems” (Bronfenbrenner 1992:

228). From this perspective, examples of macro-systems include social classes, ethnic or religious groups, or persons living in particular regions, communities or neighbourhoods.

In the bio-ecological model the property of **time** is more comprehensively described and its complexity and eternal presence acknowledged. In the previous model it was broadly defined and limited to mere stages, as evident above in the reference made to the chronosystem. In contrast, *time* now has a prominent place at three successive levels – micro-, meso-, and macrotime. Central to understanding the property of *time* is the definition of proximal processes as involving progressively more complex reciprocal interaction, and to be effective they need to occur on a fairly regular basis over an extended period of time. It therefore follows that the effectiveness of proximal processes is minimised in environments that are unstable and unpredictable across space and time. Within ongoing episodes of proximal processes **microtime** refers to continuity versus discontinuity. **Mesotime** is the periodic nature of these episodes across broader time intervals, such as days and weeks. Finally, **macrotime** focuses on the changing expectations and events that occur in the larger society, both within and across generations, as they influence and are influenced by processes and outcomes of human development over the life course. This conceptualisation of *time* helps one understand the role and continuity of developmental processes and outcomes in producing large-scale changes over time, and the implications of these changes for the society's future. Inclusion is an example of such a "large-scale change" and is dependent on continual, regular and reciprocal interactions between people, objects and symbols. Implementing inclusion in the education system necessitates an understanding of micro-, meso-, and macrotime in order to understand its origins and further development.

The significance of the bio-ecological model for inclusion lies in its potential to explain the nature and dynamics of implementing a large-scale change process such as inclusion. Everybody is affected by this change and it contributes towards the further development of inclusion in society. Related to this is the role and significance of proximal processes and their potential for further

development and change. Conversely such processes can also create barriers to learning and hamper development. Implementing inclusion is complex, and therefore "ecological sensitivity" (Dawes & Donald 2000: 19) is an important guiding principle. An analysis and understanding of both human and physical aspects of the context is an absolute prerequisite. The bio-ecological model is especially useful for understanding inclusion in the South African context.

1.5 INCLUSION IN THE SOUTH AFRICAN CONTEXT

1.5.1 *Special needs education prior to inclusion*

Over the last ten years education in South Africa has undergone numerous and radical changes. The purpose of this section is to discuss these changes, paying special attention to their implications for learners experiencing barriers to learning, and for the development of an inclusive education and training system. A historical glimpse into previous educational dispensations and practices also helps to deepen our understanding of present educational practices in South Africa. Inclusive education in South Africa has not developed in a vacuum, and international movements as discussed earlier in the chapter have directly influenced and continue to influence educational policies and practices in this country. Applying the bio-ecological model to educational change and development highlights the complex influences and interactions apparent in education.

Broadly speaking, the development of specialised education in South Africa followed trends similar to those in most other countries. However, a distinguishing aspect in the history of South African specialised education is the extent of political and philosophical influence. This resulted in gross inequalities and inconsistencies in provision between the previous racially segregated government and provincial departments, as the apartheid era categorised and officially classified people in terms of race (Donald 1996; Du Toit 1996; Lomofsky & Lazarus 2001). Thus while education and support services were reasonably well developed in those departments serving whites, coloureds and Indians, they were grossly under-

developed in departments serving Africans. This manifested itself in various ways resulting in highly specialised and costly provision of specialised education and support services for a limited number of learners, namely mainly white and to a lesser extent Indian. Existing special schools were enlarged and new ones established, and the majority of these schools were occupied by white learners. Therefore the majority of learners, and specifically learners experiencing barriers to learning, were not only discriminated against along racial lines, but also by policy and legislation that separated “normal” learners in the mainstream from learners identified as having “special needs” and requiring education in a “special school”.

Also related to the inequalities mentioned above and closely connected to the apartheid era are the exclusionary practices related to misperceptions about disability and the conceptualisation of what was then referred to as “special educational needs”. The manner in which “disability” was understood and managed largely contributed to various misperceptions and stereotyping. The separation and marginalisation of learners with special needs from mainstream educational provision contributed significantly towards this. A further factor was the strong focus on the medical model of diagnosis and treatment of “learner deficits” within schools specially developed for specific impairments. As a result segregation was promoted and many learners did not have access to adequate educational and support services. The majority of these were black learners living in rural areas and totally out of the education system.

In the past there has been much debate and controversy about the use and interpretation of the term “special educational needs”. In South Africa the term came under scrutiny in the early 1990s as a result of both international influences and the extensive range of “special needs” unique to the South African context. From primarily focusing on intrinsic or internal causes or a need arising from an internal problem, the term “special educational needs” has now come to include the view that learning and behaviour problems can be the reciprocal product of individual and environmental interaction. In the South African

context – that of a developing country – this helps clarify the high incidence of disability and educational support needs in the black population. Such needs are largely related to environmental disadvantage or external factors including poverty; lack of awareness and of access to educational, medical and health care facilities; and exposure to political violence. External factors are often the cause of specific learning needs in contexts where severe social and economic disadvantages exist. A reconceptualisation of the term “special educational needs” has important implications for how we view difference, and the extent and range of “special needs” in the South African context.

1.5.2 From exclusion to inclusion

South African education entered a new era from 1994 when a democracy was declared. Associated with this socio-political shift has been an emphasis on important values such as equity, non-discrimination, liberty, respect and social justice which have provided the framework for the Constitution. These values are central to a socio-critical perspective which developed in education as a result of a sharp critique of society (Burden 1999: 15). Thus inclusive education in South Africa has its origin in a rights perspective informed by liberal, critical and progressive democratic thought (Engelbrecht 1999: 7). Policy documents and subsequent legislation have emerged that reflect these values. Integrated with the international movements and guidelines discussed earlier, the following policy documents relate directly to the development and implementation of an inclusive education system (Lomofsky & Lazarus 2001):

- *White Paper on Education and Training in a Democratic South Africa* (1995)
- *The South African Schools Act* (1996)
- *White Paper on an Integrated National Disability Strategy* (1997)
- *The National Commission on Special Educational Needs and Training and The National Committee on Education Support Services* (1997)
- *Education White Paper 6: Special Needs Education: building an inclusive education and training system* (2001)

In the *White Paper on Education and Training* (1995) the Department of Education and Training introduced key initiatives to respond to diverse learners' needs. These initiatives included (1) the Culture of Teaching, Learning and Services (COLTS), and now the Tirisano programme; (2) the National Qualifications Framework (NQF); (3) Curriculum 2005 based on an outcomes-based education (OBE) approach; and (4) The new Language Policy. In the *South African Schools Act*, access for all learners to a school of their parents' choice became legislated. Section 5(1) of the Act states that: "A public school must admit learners and serve their educational requirements without unfairly discriminating in any way." However, the Act also contains gaps and weaknesses, mainly in the wording of some of the clauses, which restricts the rights of learners experiencing barriers to learning and undermines the development of an integrated inclusive education system. Despite this, in this legislation compulsory exclusion has been abolished (Lomofsky & Lazarus 2001).

The *White Paper on Education and Training* and the *South African Schools Act* created the basis necessary in policy and legislation to facilitate a paradigm shift to inclusive education. In the *White Paper on an Integrated National Disability Strategy*, strategies for access to the curriculum for learners with impairments were emphasised, thereby further stressing and supporting the paradigm shift from a medical model of disability to a socio-critical model that is based on the premise that society must change to accommodate the diverse needs of all its people. This paradigm shift was reinforced and its practical implementation in the South African context elaborated on in the report issued by the National Commission on Special Needs in Education and Training (NCSNET) and the National Committee on Education Support Services (NCESS) in 1997. This report specifically contributed to our understanding of the nature and extent of barriers to learning within South Africa and the use of acceptable and respectful terminology.

An important task of the Commission and Committee was therefore to develop an understanding of concepts such as "special needs" and "education support". Reviewing these concepts critically resulted in the realisation that a range of

needs exists among learners and within the education system and other systems in the environment. These needs need to be met or addressed if effective learning and development is to be provided and sustained. Therefore the education system must be structured and must function in such a way that a diversity of learner and system needs can be accommodated. This is in keeping with a systems view of development and behaviour as explained above, and therefore assists us by providing us with information about where in the system the learning breakdown occurs, as well as aspects of the system unable to accommodate diversity. These factors were conceptualised by NCSNET and the NCESS as "barriers to learning and development" (adopted from UNESCO policies). Barriers to learning and development are defined as "those factors which lead to the inability of the system to accommodate diversity, which lead to learning breakdown or which prevent learners from accessing educational provision" (Department of Education 1997: 12). From a systemic approach, factors that can create barriers may be located within the learner, within the school, within the educational system and/or within the broader social, economic and political context.

The range of factors resulting in barriers to learning can be viewed on a dynamic, interactive continuum from internal to external systems factors. Systems factors refer to systems or aspects within systems that can impact on barriers to learning. This does not mean that what occurs in one system "causes" a barrier to learning and is thereby only one-directional. Rather, barriers to learning can be the result of or result in an interaction between multiple systems, as every action is also a reaction (circular causality). Consequently, barriers to learning can also arise out of an interplay between both internal and external factors. Internal factors are those factors or systems situated within the individual as a system, and can be organic in nature, for example a visual or hearing impairment. External factors are factors within systems that are in the environment and outside or "external" to the individual. In Bronfenbrenner's model, external factors can be located in the microsystem, mesosystem, exosystem and macrosystem. In developing countries like South

Africa a large number of barriers to learning arise from an interaction of factors within external and internal systems. A common example is a young learner whose parents both suffer from HIV/Aids and who needs to take increasing responsibility at home, for himself, his parents and his younger siblings. Consequently his schooling is continually interrupted and there is often no time to complete homework. A learning difficulty may arise when basic scholastic activities are missed. In this case further barriers to learning may also arise when a parent, who is the breadwinner, dies, which results in further fuelling the vicious cycle of poverty. A teacher's discriminating attitude towards a learner whose parents suffer from HIV/Aids can also have a negative effect on the learner's scholastic performance and attitude towards school. From this example it should also be evident that the impact of a barrier such as HIV/Aids is complex and multidimensional, and professionals designing intervention programmes need to be mindful of this.

Research conducted by the Commission identified the following barriers to learning in the South African context:

- Socio-economic deprivation, including poverty, lack of access to basic services, exposure to danger, inaccessible environments and unsafe buildings
- Barriers arising from impairments, including physical, cognitive, sensory, developmental and learning impairments
- Negative attitudes to and stereotyping of differences
- An inflexible curriculum
- Inappropriate languages, or language of learning and teaching (LoLT) and language of communication
- Inappropriate and inadequate provision of support services
- Inadequate policies and legislation
- Lack of parental recognition and involvement

The findings and recommendations contained in the final report of the NCSNET and the NCESS were taken seriously and informed the final policy document in inclusive education, namely the *Education White Paper 6: Special Needs Education: build-*

ing an inclusive education and training system, released in 2001 (Department of Education 2001). In this document a framework is provided for establishing an inclusive education and training system in South Africa, focusing on the changes that are necessary for accommodating the full range of learning needs. The *Education White Paper 6* also highlights relevant principles that are integral to an inclusive education system. These principles are focused on acknowledging and respecting that all people can learn, and that all people learn differently and have different learning needs which are equally valued. Therefore differences in learners, whether due to age, gender, ethnicity, language, class, disability or HIV status, need to be acknowledged and respected. In an inclusive education system, education structures need to be enabled, and attitudes, teaching and learning methodologies, and the curriculum changed to reflect inclusive values. The *Education White Paper 6* also recognises that learning is broader than formal schooling and that learning also occurs in the home and community. In a responsible inclusive education and training system, all of the above is not possible without supporting the diverse learning needs of all learners, educators and the school system as a whole.

In the *Education White Paper* it is clearly stated that classroom teachers⁶ are the primary resource for achieving the goal of inclusive education. This implies that educators will need to refine their knowledge and skills and, where necessary, develop new ones. Educators will therefore require support in the form of staff development, in-service education and training, and the opportunity to collaborate with special schools, full-service schools and other education support personnel within district support services.

1.6 IMPLICATIONS OF INCLUSION FOR SOUTH AFRICAN SCHOOLS AND EDUCATION

In this final section, attention will be given to a few of the practical implications of inclusion for schools and educators. This discussion will focus on the broader systemic issues that are essential for implementing inclusion, such as school reform, changing of attitudes and collaboration.

Specific attention to classroom and teaching strategies will be provided in the chapters that follow as they emphasise the unique teaching and learning requirements of various barriers to learning and development.

Inclusion is about all learners and not just a few. It is not just about disability, but means responding to all learners' individual needs. As mentioned in the beginning of the chapter, inclusion is concerned with a school culture which welcomes and celebrates differences and recognises individual needs. Inclusion can therefore not be separated from school reform as well as from educational change in the broader sense. It requires changing the culture and organisation of the school so as to create sustainable systems and structures which develop and support flexible and adaptable approaches to learning. This does not happen automatically as it demands that principals, teachers and the school community possess knowledge and skills in educational change and school reform. A few of the elements of educational change will be discussed below. While each one will be discussed separately, they do not occur in isolation and are in constant interaction with each other:

- **Vision and leadership.** The first and perhaps primary step for creating an inclusive school is to establish a shared vision of preferred conditions for the future. Any vision for an inclusive school needs to be based on the democratic, egalitarian principles of inclusion, belonging and provision of quality education to all learners. The school principal must recognise his responsibility to set the tone of the school and help the school as a whole to become and maintain a supportive, caring community. Ainscow (1999) calls for shared or transformational leadership which acknowledges that every school community member, including educators and parents, can be a leader and that leadership roles need to be acknowledged and developed.
- **Whole-school development.** One of the approaches for developing an inclusive school is the whole-school development approach (Swart & Pettipher 2001). The goal of a whole-school development approach is to create inclusive cultures and practices that permeate every aspect of the school and all its activities. This approach is based on organisational development and systems theory and is aimed at improving all aspects of the school as an organisation in which there is an interactive and interdependent relationship between the various systems and subsystems of the school. It therefore involves all role-players and all systems of the school, and collaboration between role-players is essential. The focus in whole-school development is on both personal-professional development of all members of the school community and organisation development.
- **Support and collaboration.** Support is the cornerstone of successful inclusive education. Inclusive schools and classrooms focus on how to operate classrooms and schools as supportive and caring communities in which a sense of community – a sense that everyone belongs, is accepted, supports and is supported by all members of the school community – is fostered. This implies that no educator, parent, education support professional, learner or volunteer should have to handle significant challenges alone. Collaboration is an important strategy of support for inclusive education and, according to Sands et al. (2000: 120), “... is at the heart of the inclusive school community”. Friend and Cook (2003: 5) define collaboration as “a style of direct interaction between at least two co-equal parties voluntarily engaged in shared decision making as they work towards a common goal”. Embedded within this definition they identify six defining characteristics of collaboration, namely
 - collaboration is voluntary
 - collaboration requires parity among participants
 - collaboration is based on mutual goals
 - collaboration depends on shared responsibility for participation and decision making
 - individuals who collaborate share resources
 - individuals who collaborate share accountability for outcomes.

Collaboration is difficult, but rewarding. According to Friend and Cook (2003) there are a number of outcomes of collaboration which can simultaneously also contribute to its development. These include attitudes and beliefs supportive of a collaborative approach, mutual trust and a sense of community.

- **Attitudes.** The inclusion of all learners becomes an issue related to everyone's beliefs, values and attitudes about diversity, change, collaboration and learning. Assumptions, beliefs and attitudes are directly translated into actions and teaching practices, and inform decision making. Attitudes about diversity and change can be both a barrier to as well as a strong positive force in implementing inclusive education. The attitudes of everybody in the school are important and need to be explored, shared, challenged, restructured and rethought when working in inclusive settings. If repressed and unquestioned, negative attitudes can be corrosive to efforts to implement inclusive education as well as counterproductive, as they spread in a contagious manner among the rest of the school community. Here it is also important to note that research has shown that attitude changes do not have to precede behaviour changes (Guskey 1984 in Schaffner & Buswell 1996). Therefore it is not effective to wait for people's attitudes to change before the change is implemented. In fact, attitude changes frequently follow changes in behaviour. For example, research has shown that teachers' attitudes change towards disability when they begin working with learners with disabilities on a daily basis.
- **Resources.** Two trademarks of effective inclusive programmes are how existing resources are used in new ways and how additional resources are increased. Teachers experienced with the inclusion of learners with disabilities have identified time, collaboration, administrative support and ongoing training as some of the resources for supporting and sustaining inclusive education in schools (Swart & Pettipher 2001). However, resources are not only those existing within the school itself, but also include those in the community. Accessing

resources and support in their community is an essential activity of inclusive schools (Muthukrishna 2001). This is easier if the school is committed to community partnerships. As relationships are developed between the school and the wider community, a wide range of possible resources for teachers, learners and families can be identified. Schools can also draw on neighbouring schools and other education institutions, such as special schools and universities.

- **Professional development.** For educators to teach in an inclusive school and collaborate with one another, they need to acquire, through pre-service and in-service experiences, a common vision, conceptual framework and language, and a set of instructional and technical skills to work with the needs of diverse learners. Professional development must prepare educators for collaboration and support, and assist them in understanding their relative roles and responsibilities in the inclusion effort. Mel Ainscow (1999), a prominent researcher in inclusive education, maintains that if staff development is to impact significantly on thinking and practice, it needs to be linked to school development and therefore to be school based and context focused. He states that staff development is more powerful in encouraging improved teaching practices when it is set within the school context and addresses day-to-day concerns of teachers. These types of experiences cannot be obtained from only attending a workshop. The ability to transfer knowledge into everyday classroom practice requires planned application and "on-the-job" support. This requires that time be set aside for educators to work in teams and support one another.

1.7 CONCLUSION

Any framework for understanding inclusion needs to consider multiple perspectives. A framework must be sufficiently comprehensive to explain its origins, development and implementation. In this introductory chapter it has therefore been necessary to focus your attention on both international and national trends in inclusion as well as relevant

theories. In South Africa specifically, the Constitution provides the guiding principles for developing a democratic society, and pays particular attention to overcoming the disparities of the past in order to provide an equitable and just society for all. This has directly influenced policy development and legislation in education and specifically the policy on inclusive education. Therefore there is a strong socio-political motivation underpinning the South African policy of inclusive education. However, the framework provided in this chapter does not only focus on the socio-political model of inclusion, but also encourages readers to deepen their understanding of inclusion by incorporating into their framework other ecological and systemic theories. These theories assist in explaining the complexity of inclusion and the multidimensional nature of the change required in all areas of society, not only in schools. They are also useful in understanding the continuum of barriers to learning, especially as they manifest in the South African context, and not only disabilities and human rights. The diversity within South African society will naturally add to the complexity of inclusion, but can also provide a platform for transformation and an opportunity for developing a unique inclusive education system that is not a blueprint of an existing one. A South African inclusive education system can and should be an important tool for creating a truly democratic society.

Questions

1. What is the philosophy of inclusion? How would you explain to somebody in South Africa what inclusive education is?
2. Inclusion requires a radical paradigm shift from a medical deficit or within-child model to a social systems change approach. By means of a table, compare the medical and social ecological models.
3. Identify a learner who experiences barriers to learning in your classroom. Develop a case study of the learner by analysing the barriers from the bio-ecological model.
4. What are the implications of inclusion for a school community?

Bibliography

- Ainscow, A. 1998. Would it work in theory? Arguments for practitioner research and theorising in the special needs field. In Clark, C., Dyson, A. & Millward, A. (Eds), *Theorising special education*. London: Routledge, 7–20.
- Ainscow, M. 1999. *Understanding the development of inclusive schools*. London: Falmer Press.
- Bailey, J. 1998. Medical and psychological models in special needs education. In Clark, C., Dyson, A. & Millward, A. (Eds), *Theorising special education*. London: Routledge, 44–60.
- Bauer, A.M. & Brown, G.M. (Eds). 2001. *Adolescents and inclusion: transforming secondary schools*. Baltimore, Maryland: Paul H. Brookes.
- Booth, T., Ainscow, M., Black-Hawkins, K., Vaughan, M. & Shaw, L. 2000. *Index for inclusion: developing learning and participation in schools*. Bristol: Centre for Studies in Inclusive Education (CSIE).
- Bronfenbrenner, U. 1979. *The ecology of human development: experiments by design and nature*. Cambridge, Mass.: Harvard University Press.
- Bronfenbrenner, U. 1992. Ecological systems theory. In Vasta, R. (Ed.), *Six theories of child development: revised formulations and new trends*. London: Jessica Kingsley, 187–249.
- Bronfenbrenner, U. & Ceci, S.J. 1994. Nature-nurture reconceptualized in developmental perspective: a biological model. *Psychological Review*, 101(4): 568–586.
- Bronfenbrenner, U. & Morris, P.A. 1998. The ecology of developmental processes. In Lerner, R.M. (Ed.), *Handbook of child psychology. Volume 1: Theoretical models of human development*. New York: John Wiley & Sons, 993–1027.
- Burden, A. 1999. Education for all: an approach to accommodate diversity. Some introductory remarks. *Education*, 28 (1&2): 10–24.
- Christenson, S.L. & Sheridan, S.M. 2001. *Schools and families: creating essential connections for learning*. London: The Guilford Press.
- Corbett, J. 2001. *Supporting inclusive education*. London: Routledge.
- Dawes, A. & Donald, D. 2000. Improving children's chances: developmental theory and effective interventions in community context. In Donald, D., Dawes, A. & Louw, J. (Eds), *Addressing childhood adversity*. Cape Town: David Philip, 1–25.
- Department of Education. 1997. *Quality Education for All: Overcoming Barriers to Learning and Development*. Report of the National Commission on Special Needs in Education and Training and the National Committee on Education Support Services. Pretoria: Department of Education.
- Department of Education. 1999. *Quality Education for All: Addressing Barriers to Learning and Development. Green Paper on Special Needs and Support*. Pretoria: Department of Education.

- Department of Education. 2001. *Education White Paper 6. Special Needs Education: building an inclusive education and training system*. Pretoria: Department of Education.
- Department of Education. 2002. *Draft guidelines for the implementation of inclusive education*. Pretoria: Department of Education.
- Donald, D. 1996. The issue of an alternative model: specialised education within an integrated model of education support services in South Africa. In Engelbrecht, P., Kriegler, S.M. & Booysen, M.I. (Eds), *Perspectives on learning difficulties: international concerns and South African realities*. Pretoria: Van Schaik, 71–85.
- Donald, D., Lazarus, S. & Lolwana, P. 1997. *Educational psychology in social context*. Cape Town: Oxford South Africa.
- Donald, D., Lazarus, S. & Lolwana, P. 2002. *Educational psychology in social context*. 2nd ed. Cape Town: Oxford South Africa.
- Du Toit, L. 1996. An introduction to specialised education. In Engelbrecht, P., Kriegler, S.M. & Booysen, M.I. (Eds), *Perspectives on learning difficulties: international concerns and South African realities*. Pretoria: Van Schaik, 5–19.
- Dyson, A. 2001. *Varieties of inclusion*. Paper presented at the conference, *VI Jornadas Cientificas de Investigacion sobre Personas con Discapacidad*. Salamanca, Spain, 17–19 March 2001.
- Engelbrecht, P. 1999. A theoretical framework for inclusive education. In Engelbrecht, P., Green, L., Naicker, S. & Engelbrecht, L. (Eds), *Inclusive education in action in South Africa*. Pretoria: Van Schaik, 3–11.
- Farrell, P. 2000. The impact of research on developments in inclusive education. *International Journal of Inclusive Education*, 4(2): 153–162.
- Ferguson, D.L. 1994. Developmental disabilities: severe. In Husén, T. & Postlethwaite, T.N. (Eds), *The international encyclopedia of education*. Volume 3, 2nd ed. Oxford: Elsevier Science Ltd, 1504–1508.
- Ferguson, P.M. 2002. A place in the family: an historical interpretation of research on parental reactions to having a child with a disability. *Journal of Special Education*, 36(3): 124–130, 147.
- Florian, L. 1998. Inclusive practice. What, why and how? In Tilstone, C., Florian, L. & Rose, R. (Eds), *Promoting inclusive practice*. London: Routledge/Falmer, 13–26.
- Florian, L., Rose, R. & Tilstone, C. 1998. Promoting more inclusive practice. In Tilstone, C., Florian, L. & Rose, R. (Eds), *Promoting inclusive practice*. London: Routledge/Falmer, 1–9.
- Frederickson, N. & Cline, T. 2002. *Special educational needs, inclusion and diversity: a textbook*. Buckingham: Open University Press.
- Friend, M. & Cook, L. 2003. *Interactions: collaboration skills for school professionals*. 4th ed. Boston: Allyn & Bacon.
- Green, L. 2001. Theoretical and contextual background. In Engelbrecht, P. & Green, L. (Eds), *Promoting learner development: preventing and working with barriers to learning*. Pretoria: Van Schaik, 3–16.
- Karagiannis, A., Stainback, S. & Stainback, W. 1996. Historical overview of inclusion. In Stainback, S. & Stainback, W. (Eds), *Inclusion: a guide for educators*. London: Paul H. Brookes, 17–28.
- Lazarus, S., Daniels, B. & Engelbrecht, L. 1999. The inclusive school. In Engelbrecht, P., Green, L., Naicker, S. & Engelbrecht, L. (Eds), *Inclusive education in action in South Africa*. Pretoria: Van Schaik, 45–68.
- Letseka, M. 2000. African philosophy and educational discourse. In Higgs, P., Valakasi, N.C.G., Mda, T.V. & Assie-Lumumba, N.T. (Eds), *African voices in education*. Lansdowne: Juta, 179–193.
- Lipsky, D.K. & Gartner, A. 1997. *Inclusion and school reform: transforming America's classrooms*. London: Paul H. Brookes.
- Lomofsky, L. & Lazarus, L. 2001. South Africa: first steps in the development of an inclusive education system. *Cambridge Journal of Education*, 31: 303–317.
- Meijer, C.J.W., Pijl, S.J. & Hegarty, S. 1997. Introduction. In Pijl, S.J., Meijer, C.J.W. & Hegarty, S. (Eds), 1997. *Inclusive education: a global agenda*. London: Routledge, 1–7.
- Ministerial Office of the Deputy President. 1997. *White Paper on an Integrated National Disability Strategy*. Pretoria: Government Printer.
- Mittler, P. 2000. *Working towards inclusive education: social contexts*. London: David Fulton Publishers.
- Muthukrishna, N. 2001. Changing roles of schools and communities. In Engelbrecht, P. & Green, L. (Eds), *Promoting learner development: preventing and working with barriers to learning*. Pretoria: Van Schaik, 45–58.
- Pijl, S.J., Meijer, C.J.W. & Hegarty, S. (Eds). 1997. *Inclusive education: a global agenda*. London: Routledge.
- Sands, D.J., Kozleski, E.B. & French, N.K. 2000. *Inclusive education for the 21st century*. Belmont, CA: Wadsworth/Thomson Learning.
- Skrtec, T.M. (Ed.). 1995. *Disability and democracy: reconstructing (special) education for postmodernity*. New York: Teachers College Press.
- Schaffner, C.B. & Buswell, B.E. 1996. Ten critical elements for creating inclusive and effective school communities. In Stainback, S. & Stainback, W. (Eds), *Inclusion: a guide for educators*. Baltimore: Paul H. Brookes, 49–65.
- Swart, E. & Pettipher, R. 2001. Changing roles for principals and schools. In Engelbrecht, P. & Green, L. (Eds), *Promoting learner development: preventing and working with barriers to learning*. Pretoria: Van Schaik, 30–44.
- Thomas, G. & Loxley, A. 2001. *Deconstructing special education and constructing inclusion*. Buckingham: Open University Press.
- Turnbull, R., Turnbull, A., Shank, M., Smith, S. & Leal, D. 2002. *Exceptional lives: special education in today's schools*, 3rd ed. Upper Saddle River, NJ: Merrill.
- Unesco 1994. *The Salamanca Statement and Framework for Action on Special Needs Education*. Paris: Unesco.

Notes

- 1 The medical model inevitably also impacted on the views of the role of the parents making casual links between “disabled children” and “damaged families” (Ferguson 2002). This is evident in the findings of research in the early 1960s and 1970s as reflected in titles of journal articles e.g. *The effect of the severely retarded child on his family* (Fowler 1968, in Ferguson 2002); *Remarks on the causes of idiocy* (Howe 1976, in Ferguson 2002).
- 2 The concept “normal” was heavily debated during this time. Various questions were asked, including “What is normal?” and “Who decides what is normal?”
- 3 A self-contained classroom refers to a class in the mainstream school where learners who experience problems related to, for example, disability receive most of their instruction and support, similar to what we know as special classes or remedial classes. The educators are usually trained to provide special education.
- 4 The resource room is a classroom in a mainstream school that provides specialised instruction to individual or groups of learners. These learners are “pulled out” of their mainstream class for a part of the school day by a specially trained educator to receive special education.
- 5 *Ubuntu* is the Nguni word which encapsulates moral norms and virtues such as kindness, generosity, compassion and respect and concern for others (Letseka 2000). It is fundamental to African philosophy and emphasises the importance of human relationships and the interdependence between people.
- 6 “Educators” is used as preferred term to refer to the members of the entire school community and not just the teacher. When referring to classroom teaching, the



**SECTION
B**

**Addressing
socio-economic
barriers**

SOCIO-ECONOMIC BARRIERS TO LEARNING IN CONTEMPORARY SOCIETY

2

ERNA PRINSLOO

Learning outcomes

After reading this chapter you should be able to

- ▶ understand the changes on the societal front that influence the lives of children and adolescents
- ▶ recognise the societal factors that cause severe barriers in the development and learning of children
- ▶ identify and understand behavioural patterns and learning difficulties that are the result of severe poverty, a lack of health care, abuse, unmet emotional needs, language and cultural differences, and the outcomes of the decline of norms and values
- ▶ understand and implement strategies to counteract the socio-economic barriers to learning.

Rapid change unleashes metabolic social forces associated with temporariness, changeability and decay (Engelbrecht 1998: 142–143).

Key terms

contemporary society ♦ poverty ♦ environmental deprivation ♦ urbanisation ♦ unemployment ♦ disintegration of family life ♦ child abuse ♦ cultural differences ♦ decline of value systems ♦ moral confusion

2.1 INTRODUCTION

A barrier is an obstacle or circumstance that keeps people or things apart; it prevents communication and bars access to advancement. Applied to the social scene in South Africa, it forces educators and education policy-makers to take cognisance of the changing social issues that impact on

successful learning and teaching in the country.

Social structures in South Africa underwent profound changes during the last two decades of the 20th century. Many of these changes have had a negative impact on communal life, education and socio-economic progress. Radical changes in terms of perplexing multi-ethnic communes, a rising tide of poverty, rapid and unplanned urbanisation, a lack of proper health care and secure living conditions, a breakdown of family life and increasing moral permissiveness have contributed to increased crime, violence, corruption and the HIV/Aids pandemic.

All these factors have to be calculated when planning for the attainment of responsible adulthood and full citizenship for the children in the country. The complex, rapidly changing, multifaceted structures of the South African society complicate positive character development, harmonious educational relationships and the provision of quality education for all. Children and youth do

not easily find the stability that would enable them to assimilate a cultural tradition. The multiplicity of possibilities and the high demands with regard to knowledge and competence in the South African community with its unique social order present serious challenges to the education system.

Issues that give rise to severe barriers in the provision of quality education for all the children in the country are the following:

- The culture of poverty with its resultant underdevelopment, environmental deprivation, unplanned urbanisation, unemployment and negative expectations of the future
- The disintegration of family life
- The effects of the decline of moral and value systems
- The climate of violence and child abuse in contemporary South Africa
- The HIV/Aids pandemic and its effect on the learning climate
- Language and cultural differences

2.2 THE CULTURE OF POVERTY IN SOUTH AFRICA

2.2.1 Overview

Poverty in South Africa manifests in adverse factors such as ill health, undernourishment, a deprivation of privileges, backlogs in education, unsupportive environment (informal settlements and squatter camps), communication and language deficiencies, limited social status and a negative view of the future. South Africans living in poverty are vulnerable, powerless and isolated. These adverse conditions are created by factors such as inadequate education, low wages, unemployment (according to Statistics South Africa, the percentage of the population which is employed – the “labour absorption rate” – is 35 per cent), malnutrition, an opportunity-deprived existence, technological backwardness, overpopulation, disadvantageous surroundings, conflict, violence, crime, substance abuse and psychological degradation. These in turn prolong and aggravate the culture of poverty thus forming an escalating cycle of deprivation (Prinsloo in Van Wyk & Lemmer 2002: 65).

The lifestyle of the greatest percentage of poor families in South Africa shows visible signs of the demoralising influences of this deprivation. Adults and young people in some communities do not even attempt to maintain reasonable standards of self-respect, honesty, hygiene, home management, sexual morality, tidiness, cleanliness, responsibility and companionship.

Education in the poverty-stricken communities of South Africa is hampered by a lack of order in the communal structures, a culture of vandalism, a short-term orientation towards time, a powerful and negative peer group influence (e.g. on the Cape Flats and in inner city slums), a non-stimulating milieu, insecurity, language deficiencies, poor orientation towards school, and clashes between the value orientations of the family and the school. The result is a negative academic self-concept, relatively low levels of drive, an accumulated scholastic backlog, diffuse personality structure, an unmet need for expression, creativity that is alien to the school situation, social awkwardness and discomfort in the school situation. These factors contribute to failure in school and frequently to early school leaving. A poor and uncertain occupational future in turn contributes to poverty, and the cycle continues (Le Roux 1994: 35–36; Engelbrecht 1998: 162–192; Cock 2001; Mohr 2001).

The issues pertaining to the culture of poverty and the provision of education for poor South African learners – who constitute the vast majority of the school population in the country – are of great concern. The educational, social and economic upliftment of the poverty-stricken masses has become a priority in all planning in the country.

ACTIVITY

What do you think is the correlation between low economic status of parents and the community, and behaviour and learning problems of learners? Motivate your answer.

2.2.2 Unplanned urbanisation and unemployment

Urbanisation is a worldwide and ever-intensifying phenomenon. The biggest problem facing South

Africa is the fact that urbanisation is escalating out of control in and around all major cities. A lack of job opportunities drives people – many of whom are immigrants from other African countries – to the cities. The mushrooming of unplanned informal settlements – the so-called squatter camps – has resulted in the fact that South Africa's major cities have become dangerous and unhealthy places to live in. High-density living and the negative effects of squatter camp life are threatening the health, personal safety and future prospects of all who live there.

The strain on health services and education facilities is severe. There are more and more poor and unemployed people who lack the money to pay school fees and buy books, clothes and food for their children. Transport services are also degenerating because of a growing number of pirate travellers (travellers who refuse to pay their fare). The general standard of living is dropping rapidly in middle and lower economic class households. Insecurity, hunger, fear, the stress of high-density living, and a highly competitive lifestyle are causing increased intra-personal, ethnic and racial tensions leading to serious riots and killings.

The destruction of previously well-functioning infrastructures in many urban and semi-urban areas is an aggravating factor in the struggle to provide quality education and a healthy lifestyle for all inhabitants. The culture of non-payment of bonds, loans and municipal accounts, as well as the ever-increasing number of people in the cities are the most important reasons for this state of affairs. In rural areas infrastructures decline because of the depopulation of these areas. Unemployment and poverty are particularly high in the rural areas bordering farms, as agriculture has become increasingly mechanised over the last two decades. Large numbers of people eke out an existence in informal economic activities, most of which are limited and not sustainable. Many people engage in the same “survivalist” activities like sewing and vegetable gardening, and the selling of produce. Goods are marketed to their own impoverished communities with little financial yield. The lack of affordable transport means that people can seldom travel to more lucrative areas to sell their goods (Development Update 1999:

74). The government-commissioned report on poverty and inequality (Development Update 1999: 2) stated that most poor people live in rural areas (72 per cent of people living in rural areas are poor). These facts mirror the daily struggle for existence, food, clothing and protection of a great percentage of the people in the country. In the light of these circumstances learning and achieving academically become of little importance. Children are involved in looking for food and shelter and are not encouraged to read and write.

Government attempts to solve the problem include more than 50 government programmes, pilot projects and grants which seek to reduce poverty and inequality in both urban and rural areas. These include water and electricity provision, child welfare, outcomes-based education, adult literacy programmes and job creation. Much, however, needs to be done to accomplish a transformed social order in the country.

ACTIVITY

Can you give any information on the success or failure of any one of the programmes, projects or grants that seek to reduce poverty and inequality in your community?

2.3 MORAL CONFUSION AND AN UNCERTAINTY ABOUT VALUES

The brave new world of the 21st century is an era characterised by production-oriented materialism and accelerated technological advance. The blossoming of the mass media, with specific reference to the Internet and television, makes it possible to be instantly aware of what is happening in every corner of the earth, every moment of the day. The boundaries between peoples, nations, religions, value systems and lifestyles are fading. A cosmopolitan world order is in the making – also in South Africa. Adults and children are confronted by a tremendous, often quite disorderly diversity of values. Influences of the mass media; the advertising, fashion and entertainment world; and the world of high finance are more often than not in direct conflict with the values of traditional white and black cultures in South Africa. The continuous and overwhelming confrontation with a

multiplicity of lifestyles and pluralistic values has confused the people of the country to such an extent that the moral fibre of society is fast disintegrating.

A misinterpretation of the privileges of human rights has resulted in disharmonious relationships between parents and children as well as between spouses. Many women are so beset with their new-found emancipation that, in overreaction against their earlier unprivileged status, they refuse to show even ordinary respect towards their husbands and divorce them for the flimsiest of reasons (Prinsloo 1998: 19).

The divorce rate in the country is rising and so are the numbers of children in single-parent families. Societal life in South Africa is characterised by a general trend of distrust and selfishness and of having no interest in the welfare of the broader community. The satisfaction of the own personal need has become the only aim. Moral and sexual licentiousness has reached extreme limits. Children as young as two years and also babies of a few months are raped and abused. Venereal diseases and teenage pregnancies are on the increase and South Africa has one of the highest rates of HIV/Aids infection in the world.

High levels of crime and violence in South Africa have negatively influenced the health and psychological well-being of the children in the country. In the South African Survey (2001/2002: 24) Schonteich reports that of all the individuals who had experienced at least one violent crime in South Africa, almost a third were aged between 16 and 25 years, even though people in this age group comprise only about one-fifth of the total population. South Africa has the highest statistics in the world for some categories of serious crime. During 1999, common robbery experienced the greatest rate of increase in the country, namely 121 per cent. Residential burglary, assault with the intent to commit grievous bodily harm, rape and car hijacking all experienced increases of over 20 per cent. Robbery with aggravating circumstances increased by 150 per cent (Schonteich & Louw 2001: 1). The perception in the country is that crime is out of control. Fear and a sense of insecurity have become part of the daily life in South Africa. Mohr (2001) explains that the risk of developing post-traumatic stress disorder for chil-

dren after a rape is 85 per cent, after being beaten or physically abused by a family member is 83 per cent, and after seeing a family member killed or hurt is 53 per cent. The ratio of criminal acts has a damaging effect on patterns of investment and public confidence in the criminal justice system. South Africans are resorting to vigilantism and mob justice to counter crime. There have been calls for the reintroduction of capital punishment – a development that threatens the country's infant culture of respect for human rights.

The onslaught on our value systems and those of our children can also be explained in terms of the influences emanating from the mass media. The mass media in modern society present a tremendous and quite disorderly diversity of values to our children. Honesty, integrity, chastity, purity, problem solving without conflict – the characteristics that educators would like to emphasise – are totally underplayed. Conflict, greed, sensation, violence, licentiousness, and dishonesty in marriage and in the business world form the theme of most of the stories and series on television and in the film world. Such a chaos of values can develop disordered judgement and a blindness to the hierarchy of values in children as well as a hankering for whatever they do not have.

ACTIVITY

What are the implications of the influences emanating from the mass media? Do these mean that we should keep the mass media out of our homes? Or should we rather teach our children to use them judiciously?

Restoring the value system and moral fibre of society is a challenge of the highest priority for South Africans in general and the education sector in particular. The Minister and Department of Education have accepted this challenge and stated that: "Our entire reconstruction and development project in the 21st century will depend upon our determination and creativity in addressing the complicated area of values in education and addressing the HIV/Aids pandemic" (RSA: Country Paper 2000: 3).

Measures already put in place to counteract the decline of values are, *inter alia*, the following:

- **The redesigning of the curriculum.** The Revised National Curriculum and the National Qualifications Framework provide policy frameworks locating values centrally within education processes.
- **The role of socio-educationists.** Processes were put in place to make socio-educationists aware of their decisive role in motivating society to accept its responsibility for facilitating the normative development of youngsters in a positive way. Respect for every person in his own right and the equality of all people before the law have to be inculcated from the earliest possible age.

2.4 THE HIV/AIDS PANDEMIC

The epidemic in South Africa is the most recent in Africa and one of the most severe worldwide (Whiteside & Sunter 2000: 2). It is estimated that some four million South Africans are infected with HIV/Aids – this number includes 250 000 school children, 40 000 teachers and 20 per cent of the labour force, rising to 25 per cent in 2005. In 1999, 33 per cent of the population of KwaZulu-Natal – South Africa’s most populous province – were HIV positive (Development Update 2001: 121). Approximately eight million people will die of the disease in the period 2000 to 2010 – most of them in the age group 17 to 45. Consequently, the country faces the problem of having to care for two to four million Aids orphans within the next ten years. According to the United States Central Intelligence Agency (CIA), HIV/Aids is potentially the biggest threat to the economy of South Africa and the rest of the African continent. Predictions are that the pandemic will reduce the region’s GDP by at least 20 per cent by 2010. Moreover, the life expectancy in South Africa could be reduced by 20 years (Development Update 2001: 122).

The effect of the pandemic on millions of children in South Africa is disastrous. Many parents, grandparents and caregivers in the extended family die as a result of the illness. Children as young as three years sometimes live in the streets because they have no one to take care of them.

Community structures and help from the government and NGOs are not sufficient to provide for the needs of so many orphaned children. Research projects conducted at schools indicate that children as young as 14 and 15 often act as heads of households. They have to provide for the basic needs of siblings without any income – often also without housing, water and electricity. These children seldom have any other choice but to sell themselves as prostitutes or to fall into criminal activities such as theft in order to get money to buy food for themselves and their siblings. When they are warned against the dangers of licentiousness and Aids, their reaction is that if one is forced into choosing between death immediately from starvation or from a disease possibly in 20 years’ time, there is really no choice at all. These children are so traumatised because of too much responsibility, and lethargy as a result of their own basic needs being unmet that they lose all interest in learning. They have little hope of attaining academic achievements and no hope of a prosperous future.

ACTIVITY

In your opinion, what is the degree of sexual licentiousness in your community? Explain the results of this kind of licentiousness as far as it is recognisable in community life in your area.

Can you think of preventative measures to re-install certain values in your community?

Measures to fight the HIV/Aids pandemic are manifold. A range of policy initiatives at national level have been streamlined by the government into a national programme to combat the spread of HIV/Aids. In June 2000 the Minister of Health launched the *HIV/Aids/STD Strategic Plan for South Africa, 2000–2005* as a broad national plan to guide the country’s response as a whole to the pandemic. The plan seeks both to reduce HIV infection rates and to address the broad impact of HIV/Aids on individuals, families and communities. The plan focuses on

- preventing the spread of the disease through the promotion of safe and healthy sexual behaviour, improving the management and

control of STDs, reducing mother-to-child transmission by providing anti-retroviral medicine to all pregnant women, addressing issues relating to blood transfusion and HIV, providing appropriate post-exposure services and improving access to voluntary testing and counselling

- providing treatment, care and support in health facilities and in communities, with an emphasis on developing the provision of care to children and orphans
- supporting research, monitoring and surveillance, including supporting the development of an Aids vaccine
- protecting human and legal rights through creating an appropriate social, legal and policy environment.

In April 2004 in a further step government passed legislation to provide free anti-retroviral medicine to all persons infected with HIV. The Khomanani project – a national and media-driven defence programme against Aids – was also started at the same time.

The education sector has also taken up the challenge and is increasingly becoming a central player in addressing the pandemic. One of the nine strategic priorities for educational development was the Aids pandemic. This priority has been operationalised into three programme objectives in the Tirisano implementation plan (Department of Education 2000). Each is linked to anticipated outcomes and performance indicators. The programmes are briefly outlined below.

2.4.1 The Tirisano plan for HIV/Aids intervention

Table 2.1 Project 1: Awareness, information and advocacy

Project profile: Awareness, information and advocacy	
Strategic objective	... to raise awareness and the level of knowledge of HIV/Aids among all educators and learners; to promote values, which inculcate respect for girls and women and recognise their right to free choice in sexual relations.

Anticipated outcomes	... increased awareness, understanding, knowledge and sensitivity of the causes of HIV/Aids; its consequences and impact on individuals, communities and society in general; eradication of discriminatory practices against individuals affected by HIV/Aids; development of HIV/Aids policy for the education and training system; change of attitude and behaviour towards sexuality.
Performance indicators	... myths about HIV/Aids are eradicated; increased acceptance of the need to practise safe sex; establishment of non-discriminatory practices in all education and training institutions, including departments of education; finalisation of the HIV/Aids policy; popular material on HIV/Aids is readily available; visible change of attitude towards girls and women.

Source: Republic of South Africa: Country Paper 2000. 14th Conference of Commonwealth Education Ministers

Table 2.2 Project 2: HIV/Aids within the curriculum

Project profile: HIV/Aids within the curriculum	
Strategic objective	... to ensure that Life Skills and HIV/Aids education is integrated into the curriculum at all levels.
Anticipated outcomes	... every learner understands the causes and consequences of HIV/Aids; all learners lead healthy lifestyles and take responsible decisions regarding their sexual behaviour.
Outputs	... copies of HIV/Aids policy distributed to all education and training institutions (February 2000); information materials available in all education and training institutions (October 2000); gender sensitivity part of all learning programmes (ongoing, starting October 2000).
Performance indicators	... myths about HIV/Aids are eradicated; increased acceptance of the need to practise safe sex; establishment of non-discriminatory practices in all education and training institutions, including departments of education; finalisation of the HIV/Aids policy; popular material on HIV/Aids is readily available; visible change of attitude towards girls and women.

Source: Republic of South Africa: Country Paper 2000. 14th Conference of Commonwealth Education Ministers

Table 2.3 Project 3: Planning for HIV/Aids and the education system

Project profile: Planning for HIV/Aids and the education system	
Strategic objective	<i>... to develop planning models for analysing and understanding the impact of HIV/Aids on the education and training system.</i>
Anticipated outcomes	<i>... plans and strategies to respond to the impact of HIV/Aids on the sustainability of the education and training system, and the human resource needs of the education and training system in particular, and of the country more generally; establishment of care and support systems for learners and educators affected by HIV/Aids.</i>
Outputs	<i>... national plan to deal with the impact of HIV/Aids on the education and training system (December 2000); impact studies (December 2000); reliable statistical database on the impact of HIV/Aids (July 2000).</i>
Performance indicators	<i>... improved data and planning models are available; impact studies on all aspects related to the education and training system have been initiated and/or completed; responsiveness of national and provincial education plans and strategies to the impact of HIV/Aids.</i>

Source: Republic of South Africa: Country Paper 2000, 14th Conference of Commonwealth Education Ministers

2.5 THE DISINTEGRATION OF FAMILY LIFE AND THE ABUSE OF CHILDREN

2.5.1 Effects of the disintegration of family life

The vulnerability of the nuclear family in today's society has led to the general disintegration of family life. Children seldom find safety and security (including emotional security) in modern family life. Single-parent households, families ridden by violence, and orphaned children without the support of the extended family or any kind of caregiver, are the order of the day. There are few support structures in modern society where children are able to adequately fulfil their social adjustment and proper self-actualisation.

Teachers need to remember that education means accompanying the child in the fulfilment of his needs. The lack of adequate support in the

realisation of the needs of children forms a severe barrier to successful learning.

ACTIVITY

Experience teaches us that many children lack the personal guidance of parents because of "absence" or because the parents fail in their duty as educators. How would a teacher take the place of such parents? Is this part of his job? Is it permissible? Should he do it? Should he also show and point out negative things to children?

Maslow's hierarchy of needs (Maslow 1970: 1–56) can be used to measure the educational milieu of the children of South Africa.

The first four needs are basic needs or deficiency needs and it has been well proven in educational research that severe deficiencies (i.e. when these needs are not fulfilled) can lead to mental problems: "Most neuroses involve, along with other complex determinants, ungratified wishes for safety, for belongingness and identification, for close love relationships and for respect and prestige" (Maslow 1970: 21).

The percentage of children in South Africa whose basic needs are not met is growing by the day. The following actions serve as preconditions for self-fulfilment: a child must be actively involved in forming relationships with himself, his peers, parents, teachers and the community, as well as with objects and ideas. He must experience joy and success in most of these relationships in order to attribute meaning to his world. Only through dynamic involvement, positive experience and sufficient attribution of meaning to the life-world will the child be capable of forming a positive self-image which in turn leads to adequate self-actualisation.

The extent of the problem of education in South Africa can only be realised when one weighs up the conditions for adequate guidance towards optimal self-actualisation against the realities of the present situation. Water, food, rest, shelter and basic medical care are not available as a matter of course to all children. Because of the criminal and violent situation in the country, many children are also deprived of safety,

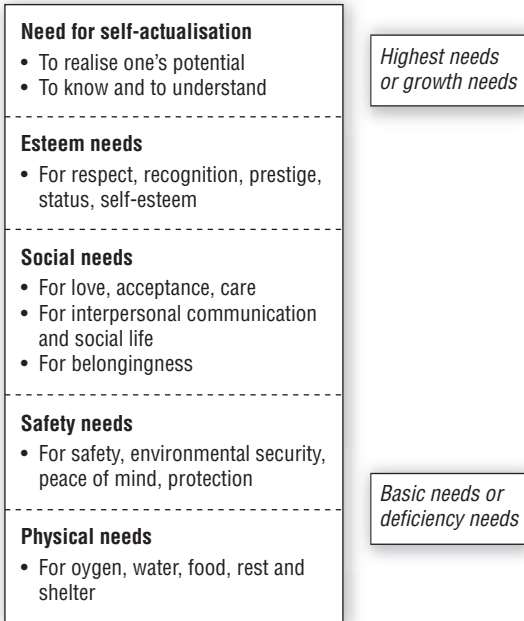


Figure 2.1 Maslow's hierarchy of needs

Source: Maslow 1970: 42

environmental security, peace of mind and protection from parents and the community.

The disintegration of family life causes a lack of love, acceptance, care, interpersonal communication and belongingness. Children are traumatised to such an extent that not only are their cognitive development and learning ability negatively influenced but also their physical, social and normative development. Under such circumstances there is little hope for the fulfilment of esteem needs such as respect, recognition and self-esteem.

The degree to which a child who is deprived of most of his basic needs is capable of becoming dynamically involved in his life-world and of positive involvement in the learning situation is limited. The structure and dynamics of society in contemporary South Africa have indeed created an anti-child climate.

2.5.2 Child abuse

Child abuse is an old phenomenon, the occurrence of which appears to be frightfully on the increase in present-day South Africa. There are no

accurate statistics on its magnitude, and what is reported represents only the tip of the iceberg.

Families and communities tend to deny the existence of the phenomenon or to remain silent about it. Le Roux (1994: 228) states that abuse is a repulsive act committed by an adult and directed at a defenceless child who ought to be protected rather than abused. It is all the more repulsive because an older, stronger person deliberately harms a younger defenceless person. It is particularly odious when the offender is supposed to be the child's custodian, caregiver and protector.

The seriousness of child abuse manifests itself in its consequences. Typical effects of abuse on children are low self-image, self-blame, violent behaviour, brain and other physical damage, emotional problems, negative vision of the future and death. It is also true that many child abusers were themselves victims of abuse when they were young. Criminal behaviour in later life often stems from the fact that the perpetrator had been abused as a child, and one can therefore assume that the negative effect can be perpetuated from generation to generation (Le Roux 1994: 228). Links with abuse have been documented by Linkletter (s.d.: 73) to the following USA statistics: 45 per cent of drug addicts, 75 per cent of prostitutes and 80 per cent of rapists were sexually abused as children. Le Roux (1994: 229) remarks that the saddest aspect reflected by these statistics is that children sometimes experience violence from people against whom they have not been warned: fathers, acquaintances, teachers, priests and peers. Children often believe that they are actually the guilty party in this process. Although identification of child abuse has improved greatly, there has been no decline in the incidence of this crime; on the contrary, the incidences of child abuse have increased at an alarming rate. It is important therefore that teachers take certain steps to help protect children against possible abuse. In the disrupted society of present-day South Africa, schools are often the only stronghold where many children can be supported and protected against abuse. Teachers should be aware of the different forms of child abuse as well as the consequences thereof.

The following are generally distinguished as forms of child abuse:

- Physical assault and injury
- Neglect: emotional, social and physical
- Psychological abuse (e.g. rejection)
- Sexual abuse

Non-sexual offences denoted by the term “abuse” are

- assault
- assault with the intent to inflict grievous bodily harm
- murder
- physical neglect
- abandonment
- psychological and emotional abuse.

Sexual offences or crimes include the following:

- Crimen injuria
- Indecent assault
- Incest
- Rape
- Sodomy
- Various offences and crimes against children such as statutory rape and certain indecent acts
- Inappropriate fondling
- Forcing children to watch pornography and scenes of sexual intercourse and mutual masturbation
- Indecent exposure
- Talk to stimulate or shock or involve a child in sexual acts
- Intimate kissing
- Coercion to touch the private parts of the offender
- Use of children in pornographic material
- Prostitution

Although there does not appear to be a single, universally acceptable definition of child abuse, sexual abuse of a child takes place when

- a child is involved in sexual activities that he does not understand
- a child cannot legally and on an informed basis consent to the acts concerned
- the acts represent social taboos
- there is an unequal relationship of authority between the perpetrator and the victim
- the child cannot defend himself or resist the adult

- the child cannot cope emotionally with the sexual stimulation to which he is exposed
- at some point during or after what happens, the child realises that what is happening or has happened to him is socially unacceptable and is something to be ashamed of (Le Roux 1994: 230).

Relationships between victims and persons who are responsible for the highest number of categories of crimes against children can be represented as follows:

- Stepfathers and biological fathers form the greatest number of perpetrators.
- Mothers’ male friends and live-in family members are next in line.
- The category “others”, which includes friends, neighbours, teachers, church and youth group leaders, employers, and unknown persons, amounts to 20 per cent of perpetrators.

The causes of child abuse can be attributed to

- parental factors
- child factors
- crisis or stress factors.

Parental factors

In most cases abusive parents are characterised by the following:

- They live under difficult financial and/or job circumstances, and experience stress with regard to security and meeting the family’s needs.
- They experience inadequate social support.
- They experience conflict regarding the available time and energy.
- They maintain distorted I–you relationships.
- They feel humiliated, inadequate and inferior because of the behaviour of other people.
- They experience an unsatisfactory sex life.
- They believe that the child should satisfy their needs, and not the other way round.
- They maintained poor relationships with their parents.
- They refer to the child as a monster.
- There is an inadequate display of motherliness.

- They experience personality deficiencies (such as psychological disorders, psychopathology, a low self-concept, neurosis, etc.).
- They were often also abused or neglected.
- They often seek satisfaction of their own emotional needs from the child – because the parent feels uncertain about other people’s love for him, he seeks assurance and love from the child, as if a child could provide this type of comfort and love in the same way as an adult.
- They are inclined to subject the child to demands and expectations. The inexperienced parent has a skewed expectation and the wrong attitude towards child rearing.
- The “sick-but-slick” syndrome is also present: the psychopathic parent believes that he is mentally healthy and is not abusive (Pretorius 1998: 366).

Child factors

- The child who was unwanted
- Children who are often chronically ill, tense, emotional or demanding
- The child who is not the gender that the parents expected or wanted
- The child who has to deal with parental projections and often has to compensate for his weaknesses
- Orphaned and street children who have no protectors

Stress factors

- Job insecurity and financial needs of parents
- Large families
- Sudden and radical changes in life pattern
- Dislocation and uprooting
- Single parenthood
- Alcohol and drug abuse

Warning signals

Teachers should be alert to certain behavioural aspects that can suggest that a child has been abused. Warning signals in this regard are the following:

- A sudden and inexplicable deterioration of schoolwork, unexpected failure, and incidents of truancy

- Unusual over-dependence on trusted adults
- Withdrawal from society, and relationship problems with old and established friends
- Depression
- Aggression
- Eating or sleeping problems, and drastic change in mass or in eating habits
- Sexually provocative, promiscuous and overtly adult and sexual behaviour that is inappropriate at a particular age (e.g. compulsive masturbation and excessive interest in the genitals)
- Stealing
- Lying
- Undesirable lifestyle and changes in habits
- Injuries to sexual organs
- Enuresis (bed-wetting)
- Avoidance of eye contact, nervousness and lack of confidence
- Fatigue and listlessness
- Wearing of thick layers of clothing as if to hide his body or something that has happened to his body
- The emergence of self-destructive tendencies, engaging in life-threatening activities, and contemplating and/or speaking of suicide
- The emergence of criminal behaviour
- Indications of abuse in drawings by the child
- The refusal of a child who is normally well-behaved and obedient to submit to medical examinations at school (Le Roux 1994: 240)

Preventative actions by schools

Teachers, psychologists, socio-educationists and therapists can use the school as a community centre and should present short courses on the following:

- Parental guidance
- Marriage counselling
- Family enrichment courses
- Family therapy
- Divorce counselling
- Psychotherapy
- Therapeutical support for abused children
- Preventative strategies

Teachers should regard it their duty to identify abused children in their classrooms and to refer them and their families for assistance and support. Many of these courses and programmes as suggested above have already been developed and are registered at the Education Sector Education and Training Authority (Seta).

2.6 LANGUAGE AND CULTURAL DIFFERENCES

Language and cultural differences are much in evidence in South Africa's heterogeneous population. Personal characteristics, cognitive styles and learning styles of different cultural groups differ widely. In the past, the South African education system was based on Western culture. As a result, children whose own language, traditions, values, norms, customs and so on differed from those of the school culture might have underachieved because the existing curriculum had nothing in common with their own cultural milieu. One cultural group, for instance, might place more emphasis on interpersonal relationships than another cultural group. They might be, for example, more person-oriented than task-oriented, socially more interactive and show preference for a cooperative environment rather than a competitive environment. Stress and uncertainty as to behaviour might result in all kinds of learning and behaviour problems. Many black families in South Africa are faced with the problem of opposing values between home and school, and this contributes to the number of barriers to learning.

guages. This meant that most learners (especially black ones) in South Africa received school instruction from Grade 5 in a second language, usually English (since 1996, black children have had English as medium of instruction from Grade 0). This meant that teachers and learners seldom had the language skills for the change of instruction to English. In addition, since parents communicate with their children in their mother tongue, the children only heard the language of instruction during school hours. The result was that children were never really able to master English.

Children who attend schools where the language of learning and teaching (LoLT) is English and their parents can speak only the vernaculars cause anger, shame and low self-esteem in parents and caregivers. This encourages the non-involvement of parents/caregivers and worsens the fact that they cannot assist their children with schoolwork. Parents and children develop in opposite directions, with little common ground in terms of culture, language and life experiences.

The new Constitution provides for 11 official languages. This variety of languages complicates the provision of education, particularly since mother-tongue instruction enjoys high priority in this Constitution. According to the ANC's Policy Framework for Education and Training (1994: 61–67), the equality of all languages in South Africa is recognised as well as the right of the individual and society to speak the language of their choice at national and provincial level. A language of wider use, such as English, could be accepted as the official school language but initially the same problems that are experienced at present will persist. Whatever the official language policy of the government is, it is unavoidable that there will be certain learners who will not receive mother-tongue instruction throughout their school careers. Teachers should be aware that this usually leads to learning problems and underachievement in these learners.

ACTIVITY

Mention a few cultural differences between people from the African and white cultures that could cause underachievement in a lone child at school if the others are in the majority. What is your opinion of a second language as the medium of instruction in all grades at school?

Just as there are enormous cultural differences between the different population groups in South Africa, there is also a vast range of languages spoken. Before the new political dispensation, English and Afrikaans were the only official lan-

ACTIVITY

What is your experience of the use of one official school language for South Africa?

2.7 ADDRESSING THE ANTI-CHILD CLIMATE IN CONTEMPORARY SOCIETY

In the light of these problems, the following intensive action programmes have been piloted in an attempt to eliminate some of the negative social and economic influences which undermine children's lives and education:

2.7.1 Community education

Educational programmes providing supportive guidance for parents with regard to child rearing and parental involvement in all developmental phases have been started on a national basis. These programmes assist parents in adequately fulfilling their educational task. All possible media, including radio and television, are used to reach the largest possible number of parents and caregivers. Various programmes to address the illiteracy problem among adults have also been initiated. In rural and urban areas, workshops, evening classes and specific courses are run to help adults with basic education. The Department of Education strives towards transforming all schools in the country into community centres where the necessary programmes for all the members of the community can be presented. The aim is to enhance the self-image and way of life of adults through functional literacy and numeracy and to enable them to better fulfil their educational task.

2.7.2 Educational programmes

Educational programmes with an eye to training and retraining adults in specific skills in order to equip them better for a stable career world are also under way. Serious attempts have been made to address the unemployment and resultant poverty problem. Community education provides opportunities and facilities that can upgrade the quality of life. In a healthy community, both parent and child are better equipped to counteract anti-child attitudes. The problem concerning language efficiency in education is debated at the highest levels.

2.7.3 Counteracting the fate of street children

In South Africa, as in other developing countries,

street children are the products of rural-to-urban migration, unemployment, poverty and broken families. Statistical indicators worldwide tell a categorical story: tendencies such as divorce and separation, child abuse, teenage pregnancy, alcoholism and suicide are all increasing relentlessly. As a result, street children are forced by circumstances beyond their control to live on the margins of the adult world.

Le Roux (1994: 62) reports that street children "represent one of our global family's most serious, urgent and rapidly growing social challenges". Worldwide, between 50 and 100 million of these boys and girls are living on the streets. In South Africa, there are about 15 000 reported cases. Although the largest concentration is reportedly in the Gauteng area, the numbers are rising in other South African cities. This phenomenon has far-reaching implications: the violent, exploited, ill-treated, cold and hungry child of today is the adult layabout and criminal of the future. The Street-Wise project is an extensive educational, vocational and life-skills project which was established to address this problem and to meet the needs of street children for education and job skills training. The aims and objectives of Operation Street-Wise are stated as follows:

- Child care in the form of shelter, food and clothing, and through the coordination of medical, welfare, psychological and legal services
- Education
- Vocational skills development

7.2.4 Health programmes

Programmes directed at nutrition, hygiene and health which will promote awareness of the health and welfare of children have been started on the same national basis as educational programmes. These programmes include help with family planning and birth control. A comprehensive primary health care service package was tabled in September 2001. According to this package emphasis will fall on the integrated management of childhood illnesses and on school health services. A free health care service for pregnant women and children up to six years old was launched in 2002, and grants of R200 per child

were allocated in the same period. Standards were set for the management of childhood illnesses in terms of material, equipment, medicines and supplies, competence of health staff, refer-

als, patient education, records, community and home-based activity, and collaboration of clinic staff with social workers, NGOs, CBOs, creches and other sectors to improve child health.

The School Health Service is expected to provide a health-promoting service by acting in a coordinating role, making use of the skills and capacity in different sectors of society, including the community, the learners themselves, educators and NGOs. Standards set for the School Health Service need to take into account the diverse situation of schools and services regarding school health at present and the changing philosophy introduced by the education sector, including outcomes-based education and inclusive education. The introduction of the philosophy of inclusive education means that children who experience barriers to learning will be included in ordinary schools, and that these schools and communities will have to be developed to provide acceptable services for such children. Teachers generally do not have the capacity to deal with these children and the School Health Services can play a role in enabling teachers to identify and integrate them into the classroom. School Health Services personnel may not have the capacity to implement their new role, so a transformation training programme is required. New resources for school health promotion need to be developed and funded. School Health Teams are becoming an integral part of the primary health team and are intra-sectoral (i.e. they work with other sections of the Department of Health). These recommended standards are based on the assumption that the primary health service is built on the subdistrict approach to service delivery.

Service description

The School Health Service is a health promotive service dealing with the individual in the context of the family and community and with the school environment. The service encourages the school to seek to develop and implement school policies that promote and sustain health, improve the physical and social environment within which children learn and develop, and improve children's capacity to become and stay healthy.

Norms

1. Each subdistrict has a minimum of one School Health Promoting Team.
2. Every clinic will be able to access a specially trained nurse on school health with the district.
3. District School Health Promoting Teams are supported from provincial level with an appropriate, effective transformation training programme and the development of standardised resource packs. The training occurs during those times of the year when schools are closed.
4. Screening Programmes are provided to give adequate coverage to identify all children at risk of barriers to learning, and are not limited to certain age groups.
5. The School Health Promoting Service creates a positive learning environment by identifying barriers to learning and developing ways to remove these barriers in a community inclusive way.
6. School Health Promoting Programmes promote acceptance and celebration of diversity among individuals through a learner-centred approach.
7. An accessible, healthy physical and social environment in which children can learn is promoted.

Source: Department of Health (2000)

Do you know about the work of the school health promoting team in your district? What programmes are they running to promote health in your school?

2.7.5 Campaign against child abuse

One of the established rights of children is their right to psychophysical integrity or to protection against bodily and mental harm. In a society where this right is abused and ignored by parents, step-parents, family members and friends, schoolteachers and community members, the legal and education systems have to step in in order to establish structures that can act proactively and reactively, and that can manage the trauma that prevents children from actualising their potential.

2.7.5.1. Proactive strategies

Schools need to be proactive in the following respects (summarised by Le Roux 1994: 251–254 and corroborated by Naidu 2001):

- Preparing children for what might happen to them, especially during the ages when they are at peak risk
- Teaching them how to respond under circumstances that make them feel threatened or uncomfortable
- Informing parents, training them and providing them with the knowledge and skills that they need to address the problem
- Offering in-service training for staff
- Creating support structures such as standard tutors and heads of department for educational guidance, and providing such people with the means that are necessary for the performance of their tasks. Certain categories of teachers can make greater contributions in this field than others. Le Roux refers in particular to the head of the Department of Educational Guidance, and to counselling and career guidance teachers who should consult and use (interpret) literature from fields such as psychology, social work, constitutional science and education in

their efforts to render a better service to the victim or the child at risk.

Teachers (schools) should be strongly involved in the identification of children who have been abused or who are at risk. The school should keep children under observation to promote timeous discovery of symptoms of possible abuse such as new fears and changing habits, a changed attitude to sexuality on the part of the learner, and school and learning problems.

Early identification of victims is essential. Teachers ought to be trained as identifying agents. They should be on the lookout for signs of abuse and neglect, but be aware of the fact that they could become involved in court cases that might arise from acting on or reporting suspected cases.

Accurate and factually correct information should be communicated openly and honestly to learners, parents and other parties that might be concerned. The information that people such as parents and teachers need to have and use, and also disseminate in the community, particularly among learners and other children, is the following:

- Children learn a lot by imitation – also by imitating violence; parents and other adults should therefore be mindful of the example they set for children.
- Myths with regard to abuse should not be perpetuated, for example that sexual abuse is not harmful if the child enjoys it; that only men commit such crimes; that victims do not report the abuse because they enjoy it; and that only people from the lower socio-economic strata are offenders.
- The statistics reveal that between 87 and 95 per cent of perpetrators are male, 94 per cent of them are not strangers to the child concerned and 60 per cent of them are actually members of the child's family. These figures are helpful in identifying factors that could place a child at risk and in planning measures to prevent such abuse or to assist victims. The figures also seem to support the assumption that the greatest incidence of child abuse could well be in the family where the child should feel secure and

safe. Another myth refuted by these statistics is therefore that only other people's children are abused and that it cannot occur in one's own family.

- A proactive programme could also include teaching the child that his body is beautiful; that some parts of his body are private; that some types of touching are natural; that other types of touching could make one feel uneasy and uncomfortable; that one has to say "no" to unwelcome approaches or physical contact; how he must act when he is alone; that he may trust his instincts; and that he has to tell a trusted adult if something bad happens. Guidelines like these could be offered at meetings such as parents' evenings.
- The incidence of child abuse seems to peak at approximately age four and again during the adolescence phase. This should be taken into account when designing strategies to protect and/or assist children.

A final aspect worth mentioning here is that the school and all its activities should be organised in such a manner that the school will be a place that is conducive to the protection of the integrity of children. It must be a place where they can feel safe and where they will have access to people (adults and other people in authority) whom they can trust.

2.7.5.2 The need for reactive strategies

Despite all strategies to prevent child abuse, there will always be the necessity to deal with offences against children. Le Roux (1994: 254) summarised the main arguments that teachers and schools should keep in mind:

- The person who renders assistance should remain calm and give the child enough opportunity to relate what has happened. He should neither reproach nor moralise. The reason for this kind of approach when rendering assistance is that the child must feel that he is being believed. Linkletter (s.d: 74) maintains that believing the child is the first step in his rehabilitation – believing the child is therefore a crucial step in helping him. However, should the child appear to have been lying (and this is pos-

sible), he should still be treated sympathetically while the error of his actions is made clear to him. Confidentiality is essential when a child reports an incident – it is obvious that if confidentiality is not maintained the child will not feel free to confide in the adult concerned. The essence of it all is that the child should know that there is an avenue open for him to reveal what has happened – that he is not a helpless victim, trapped in a situation that he cannot remedy, and that help is available.

- In order to render the best possible assistance, teachers should be kept abreast of the relevant legislation and referral procedures, and should have contact with other assisting agencies.
- Teachers are *in loco parentis* and need to be part of a multidisciplinary professional team. A multidisciplinary approach to assistance seems to be indicated. Teachers and parents should know that they will probably have to call in a professional person to help them to help the child.
- All cases of child abuse should be reported to the principal on a confidential basis and certain information should be meticulously noted (date, nature of the offence or symptoms, the teacher's observations, contact with parents, etc.). Teachers should never act independently, but should consult with the principal.
- Both the victim and the transgressor should receive professional attention.

2.8 CONCLUSION

The problems facing the South African society on the threshold of the 21st century are manifold. The dynamic and radical changes taking place have many adverse influences on human relationships and are mostly negative with regard to creating a positive and sympathetic learning climate for the children of the country. A complex polyvalent social structure with its disintegrated family life, moral and sexual licentiousness, its war against positive values, child abuse, and the problems of language and cultural differences can be confusing to children and young people. Society, and in our case specifically educators, will have to take responsibility for the children and adoles-

cents in our ranks. It is necessary to create safe and secure surroundings where children can experience warmth and acceptance and where there is provision for most of their needs in order for them to fulfil their learning task as best they can.

Questions

1. Explain in what ways poverty can be a barrier to learning for children in South Africa.
2. Discuss the consequences of unplanned urbanisation on family life and explain how this can be a barrier to learning.
3. Write a short paragraph to illustrate the state of morality and the value system in your community.
4. How does moral confusion influence children's lives and their motivation to learn?
5. Write down the number of educational programmes that are offered in your community and school. Refer to the following areas:
 - Supportive guidance for parents with regard to child rearing
 - Parental involvement in the learning process
 - Health programmes
 - Programmes to establish the rights of children and to protect them against child abuse
6. Explain in detail the success or lack of success of the abovementioned programmes in your community.

Bibliography

African National Congress. 1994. *A policy framework for education and training*. Marshalltown: Education Department, African National Congress.

Cock, J. 2001. SA brutalised. *Sunday Times*, 9 December

Department of Education. 2000. *Annual Report 1999*. Pretoria: Government Printer.

Department of Health. 2000. *The Primary Health Care Package for South Africa: a set of norms and standards*. Available at <http://www.doh.gov.za/docs/policy/norms/contents.html>.

Development Update. 1999. Annual review 1997/1998: the voluntary sector and development in South Africa. *Quarterly Journal of the South African National Coalition and Interfund*, 2(3).

Development Update. 2001. Annual review 1999/2000: the voluntary sector and development in South Africa. *Quarterly Journal of the South African National Coalition and Interfund*, 3(3).

Engelbrecht, C. S. 1998. *Society as a socio-educative arena* (only study guide for Socio-education 1). Pretoria: Unisa.

Le Roux, J. (Ed.). 1994. *The black child in crisis: a socio-educational perspective*. Pretoria: Van Schaik Publishers.

Linkletter, A. s.d. The murder of childhood. *Reader's Digest*. Cape Town: Reader's Digest.

Maslow, A.H. 1970. *Motivation and personality*, 2nd ed. New York: Harper & Row.

Mohr, N. 2001. Abuse in South Africa. *Pretoria News*, 20 November.

Naidu, E. 2001. Editorial. *The Teacher*, May.

Pretorius, J.W.M. 1998. *Sociopedagogics 2000*. Pretoria: Van Schaik Publishers.

Prinsloo, E. 1998. Social change in South Africa: opportunity or crisis? *Society in Transition*, 29(1–2): 13–21.

Prinsloo, E. 2002. Challenges to the provision of schooling in South Africa. In Van Wyk, N. & Lemmer, E. M. (Eds), *Transforming education: the South African experience*. New York: Nova Science Publishers, 49–76.

Republic of South Africa. 2000. Country paper. *Education in a global era*. Paper delivered at the 14th Conference of Commonwealth Education Ministers. Halifax, Canada, 26–30 November.

Schonteich, M. & Louw, A. 2001. *Crime in South Africa: a country and cities profile*. Institute for Security Studies Paper 49, April.

South African Survey. 2001/2002. Available at <http://www.saga.org.za/SECURITY.htm>

Statistics South Africa. 2001. *South Africa in transition*. Selected findings from the October household survey of 1999 and changes that have occurred between 1995 and 1999. Pretoria: Government Printer.

Whiteside, A. & Sunter, C. 2000. *Aids: the challenge to South Africa*. Cape Town: Human & Rousseau/Tafelberg.



SECTION

C

Addressing educational barriers

IDENTIFICATION AND ASSESSMENT OF BARRIERS TO LEARNING

3

CECILIA BOWER

Learning outcomes

After reading this chapter you should be able to

- ▶▶ discuss the relevance of determining the learner's strengths, and include a process of asset access mapping during assessment
- ▶▶ discuss the importance and process of the early identification of barriers to learning
- ▶▶ explain how to achieve a holistic understanding of the way in which barriers to learning are impacting on a particular learner and may be neutralising existing strengths and assets
- ▶▶ make an informed decision, when necessary, to refer learners to a specialist for in-depth assessment
- ▶▶ timeously identify learners who may be in need of learning support
- ▶▶ analyse a particular learner's performance to determine the nature and extent of the barriers, as well as the strengths and assets regarding his learning
- ▶▶ accommodate barriers to learning when assessing the learning of a learner with an impairment
- ▶▶ deal critically and constructively with the issue of labelling
- ▶▶ strive to assess learners equitably and respectfully
- ▶▶ utilise assessment as a tool to achieve quality education for all learners.

Key terms

assessment ♦ strengths and assets ♦ asset access mapping ♦ dynamic assessment ♦ qualitative assessment ♦ criterion-referenced assessment ♦ norm-referenced assessment ♦ early identification ♦ accommodations in assessment

3.1 INTRODUCTION

Few will deny that being assessed has played, and most likely still plays, a powerful role in their lives and that not all the effects of assessment, by far, have been constructive.

In the context and process of being assessed, a predominant experience – even of learners with good learning potential – is frequently one of anxiety and threat, of embarrassment, of disempowerment, or even of disenablement. Issues which conventionally haunt assessees are: “I need to be good!”, “I need to be the best!”, “Am I good enough?” Thus the personal significance of one's assessment results often erroneously tends to hinge on the performance theme, and this may be constantly reinforced by parents, educators and peers alike.

At the very start, briefly reflect on two experiences before, during or after assessments that you had during your years at school. Think of one with positive and one with negative associations.

- List your feelings on both of these occasions as you remember them.
- Now attempt to find an explanation for the differences which you note – how much was due to you in some way, and how much to the teacher, the system, the circumstances?
- Finally, try to remember the outcomes of the two experiences during the subsequent week.

How did the assessments or their results affect your learning or your behaviour in the classroom or at home? Can you remember whether the assessment results affected the treatment that you received from the teacher or your parents in any way?

Did you find yourself recording any signs of this emphasis in the reflection exercise above? It is certainly nowhere more important to break away from the performance-orientated perception of assessment than when dealing with a learner who is experiencing a learning difficulty of some kind. The professional should not be engaged in the assessment of the *learner*, not even in the assessment *of* learning – the focus should at all times be on assessment *for* learning.

During the past decade in South Africa, much advocacy, training and effort have been devoted to changing the approach and practice of professionals regarding assessment from an orientation on achievement towards a focus on constructive support for learning. Notwithstanding such investments, in everyday practice the shift is slow to occur, among teachers, parents as well as therapists.

The Department of Education (1998: 4) defines assessment as “the process of identifying, gathering and interpreting information about a learner’s achievement, as measured against nationally agreed outcomes for a particular phase of learning”. The central purposes of assessment are stated as providing information on learner achievement and progress and improving the process of learning and teaching (Department of Education 1998: 4). Archer et al. (1999: 97) actually call assessment the major component of the teaching–learning cycle, since it “maintains the focus on the *learners*, their *needs*, their progress and their *learning outcomes*” (author’s emphasis). This central role of assessment should certainly be maintained

in the cycle of learning support, i.e. when we are required to deal with barriers to learning.

This chapter is about achieving an understanding of the context, process and products of learning of those learners who are contending with barriers to learning. The point of departure will be formed by contemplating the *purpose* of such assessment and formulating a principled *approach* or *framework* to direct our assessment practice and our interpretation of assessment results. Finally, *strategies and techniques* will be looked at to assess learning when learners are experiencing difficulty.

3.2 THE PURPOSE OF ASSESSMENT WHEN LEARNERS APPEAR TO FLOUNDER

3.2.1 *On what should you be setting your sights?*

- Looking at the introduction above and your reflective notes on your *good* experience of assessment, construct the purpose(s) that you believe should direct assessments.
- Now think of your *bad* experience of assessment – what change(s) does this suggest to your formulation of the purpose?
- Are further change(s) required when dealing with a learner who appears to be experiencing any barrier(s) to learning? What would these be?

Ultimately, your decisions about *what* information to seek and *how* to obtain and interpret that infor-

mation will be an outcome of what you perceive the purpose to be of each assessing act that you perform. However, in analysing the purpose of assessment when dealing with a learner who seems to be experiencing barriers to learning, it is really important first to unpack the concept “learning support”.

It is fairly easy, echoing theory and policy, to declare: “The purpose of assessment, when learners appear to be faced with barriers to learning, is to gather information about their learning which will contribute meaningfully to their learning support”. Addressing barriers to learning on the basis of such a broad statement will most certainly leave many a learner lost in a faceless system. Slightly more operational, but still paying little more than mere lip-service to the full purpose of assessment, one might say; “The purpose in assessing X’s learning is to understand the level and the ways in which he learns so that I am able to devise appropriate strategies for most effective learning support.” Both statements amount to little, unless the learning support is conceptualised and envisioned in sufficient detail to translate the purpose of assessment into specific questions which will define the information needed.

So, when engaged in assessment, you should constantly be setting your sights *beyond* the assessment, on the learning support! Your understanding of learning support directs your purpose during assessment, influencing your selection of strategies and techniques as well as the actual questions you ask.

Chapter 4 looks at learning support from two perspectives, i.e. the South African policy of inclusive education and cooperative learning. But since the concept itself is pivotal to the purpose of assessment, it is briefly considered below.

3.2.2 Learning support

Contrasting learning support with remedial education highlights the shift of focus endorsed in addressing barriers to learning, and the frame of inclusive education adds to our understanding of the context and strategy of the intervention.

Remedial education conventionally adheres to the medical model of diagnosis and treatment, which is, as pointed out in Chapter 1, becoming increasingly outdated among the caring professions in addressing people’s needs. You have seen that the remedial approach to educational intervention is a problem-centred, needs-based approach to learning and developmental difficulties, and Eloff (2003a: 3) observes that “the needs-based approach is so embedded in our collective subconscious that it often goes unexplained”. The medical model holds a real danger of categorising or labelling the learner in terms of a gross over-emphasis of the impairment or problem area. The power relations established when assessing in terms of the medical model are distinctly questionable. The expert role assumed by the assessor extends to an authoritative style of imparting the findings and making recommendations, creating the disempowering perception that the learner

It is helpful to think about the concept of learning support against the backdrops of remedial education and inclusive education as both of these were discussed in Chapter 1.

- Think about the run of events when you have a physical ailment, consult a medical doctor and receive treatment. Who are the main role-players in your recovery? How is recovery brought about? What part do you, the patient, play?
- In which ways, would you say, is addressing a learning difficulty comparable to treating a physical dysfunction? If you follow the medical model of diagnosis and treatment, where could you expect the process to break down the very first time?
- Now consider a policy of inclusive education. What course of events is stated as the ideal? Who are the main role-players in dealing with barriers to learning? What are the aims of intervention? How are these pursued? What part does the learner play? Most importantly, *how could your assessment practice prevent those learners who are contending with barriers to learning from simply falling behind in the system?*

and other parties are dependent on the specialist for guidance, decisions and action.

The aim of the remedial specialist is generally to “rectify” (“remediate”) the learner’s “deficits” or “shortcomings” or even “failings”, and to “accelerate” the learner’s “development”, so the focus during “therapy” is very much on addressing the specific problems or weaknesses “in” the learner as stated in the “diagnosis”. Progress is frequently measured quantitatively – in terms of more deficit-specific tests, and developmental norms and achievement scores, such as perceptual test scores and reading age.

As also discussed in Chapter 1, a policy of *inclusive education* requires schools to respond to the diversity of their learners and to provide equal educational opportunities of a high quality for all. With regard to learners who experience barriers to learning, a policy of educational equity logically implies enriching the regular education taking place in the classroom with *learning support*. However, addressing barriers to learning and participation is a shared responsibility which cannot possibly be carried one-sidedly by any school system or policy.

Learners should be supported to also chip away at the barriers to their learning in order to combat the well-researched phenomenon of learned helplessness (Johnston & Winograd 1985) and promote their maximum participation in their environment. They should be supported in reducing, circumventing, breaking through and even removing the barriers, for each to achieve the *maximum independence possible in learning*. Ideally, this amounts to enabling learners (indeed *requiring* them) to function optimally in the regular classroom, each in accordance with his own learning style, abilities and potential. Thus the teacher accommodates the needs of individual learners within the classroom curriculum through specific instructional strategies, supplemented with further support by a virtual network of other role-players in the life of each learner. Assessment of the progress of learners who are receiving learning support includes looking at their learning and participation from a systemic perspective on the classroom and their home environment, and care is taken not to overemphasise achievement scores.

The concept of learning support, then, acknowledges the potential of learners each to grow at his own pace towards his maximum level of independence in his learning, using strategies and practising learning styles of choice, and each reaching a level of achievement in accordance with his unique abilities. It further relies on the collaboration of people from the systems to which the learners belong, to participate variously in the process of their learning.

The practice of learning support is essentially constructivist in approach and a high degree of flexibility is maintained with regard to the individual learner’s course of cognitive development. Vygotsky’s (1978) principle of the zone of proximal development features prominently, especially in utilising the learner’s *strengths*. The zone of proximal development lies just beyond the learner’s present level of independent problem solving and represents the next level of potential development, where problem solving is successfully achieved under the guidance or mediation of someone more capable than the learner (Donald et al. 2001: 71)

Learning support in principle assumes collaboration of all role-players (e.g. including family and community members), adaptation of the curriculum, peer support and also, where required, specialised intervention and counselling. Enlisting collaboration for learning support depends on identifying and understanding those *assets* in the learner’s environment that might be *accessible*. The learner’s progress is assessed holistically and understood bio-ecologically.

3.2.3 The ground to cover

The purpose of assessment is to determine how learning support may best be facilitated for individual learners to learn with maximum independence in the face of the barriers to learning which exist, building on their present level of performance, their personal strengths and the particular assets accessible in the educational and social environment in which they each find themselves. Each act of assessment should thus add informa-

The task facing you when a learner seems confronted by a barrier to learning is to conduct an assessment that could best provide the type of information required to give direction to a process of true and effective learning support for that learner.

- Read section 3.2.2 again and, if required, now adapt your construction (at the beginning of section 3.2.1) of the purpose of assessment when dealing with a learner who appears to be experiencing any barrier(s) to learning.
- List the questions that you would try to explore during the assessment.
- Devise the strategies that might enable you to find the information that you would be looking for.

tion concerning the *strategy, content, level and participants for the next step(s) of learning support.*

Determining what the learner knows and is presently able to do independently, as revealed in the quantitative results of tests, is therefore but the very first step of assessment – it does not on its own contribute much meaningful information for learning support. Understanding how he goes about achieving this level of success, i.e. qualitatively gaining insight into the cognitive and emotional processes that feed into the learner's responses, is a little more helpful, but still fails to

suggest effective strategies for the learning support in operational terms. Assessors should constantly be projecting their attention beyond the present level and mode(s) of the learner's performance, asking questions such as the following:

- What learning style, abilities and skills (personal strengths) does the learner presently employ in performing learning tasks?
- What could the learner be supported to do next that could be targeted for independent functioning in the near future?

Another way of constructing your framework for an effective assessment practice is to examine the following objectives of assessment:

- **Gaining understanding of (the dynamics of) the present situation** – looking at the learner's learning behaviour (e.g. learning style, problem-solving strategies, routine) and the context of learning (various systems and role-players and the learner's interactions with them)
- **Gaining understanding of the learning outcomes** – considering factors that might be related to both high and low quality of work, and looking at the learner's self-assessment and responses to success and failure
- **Finding the growth points** – identifying the learner's strengths and zone of proximal development, and also those strategies of mediation that seem to have an effect
- **Finding the support system** – identifying resources and the role-players who could render the required support, and to whom the learner would have the required access
- **Empowering the learning supporters** – exploring and negotiating feasible strategies and levels of support with the potential learning supporters, and determining their need for enablement
- **Facilitating access to the learning support** – exploring and negotiating the measure and form of initiative of the learner to seek support, as well as the responsiveness of the support system

Notice how interlinked the components of this framework are. Now devise the strategies and more questions that you would use to meet these objectives of assessment. You may consider using the questions suggested on pages 49 and 50 as a guideline.

- What strategies and techniques of mediation seem the most effective to achieve this progress?
- Who could most effectively participate in rendering the required learning support?
- How could the learning support best be coordinated and sustained, and how could the learning supporters be empowered and enabled to perform their vital function?

A practical framework for assessment is not sufficient, however, because you may meet a purpose and objective in different ways, and you may interpret the information derived from the assessment differently as well. It is the underpinnings of the theoretical framework that will give deep direction and content to your assessment practice.

3.3 A FRAMEWORK OF THEORY

3.3.1 Orientation

Recognising that the *context* of learning is relevant to learners' performance in many ways encourages us to devise assessment techniques and strategies more richly and authentically than positivist (strictly quantitative) conventions of norm-referenced testing, and to interpret assessment results from unique angles. Norm-referenced tests compare an individual learner's performance with that of the peer group, determining his relative standing among learners of a "norm" group of the same age or grade level.

In striving to construct a grounded practice of context- and process-focused assessment, you will need to draw from multiple theoretical stances, which include at least the bio-ecological model of development, the asset-based approach, principles of dynamic assessment and accommodations in assessment, and knowledge of the specific learning area(s) in which the barriers to learning appear to exist.

The bio-ecological model of development of Bronfenbrenner and Morris (1998) is explained in Chapter 1 (section 1.4), so this section will only briefly repeat the implications for assessment before introducing the asset-based approach, dynamic assessment and accommodations in

assessment. Assessment with regard to the learning areas is presented in Chapters 7, 8 and 10.

Keep handy the strategies and questions to meet the objectives of assessment that you developed in the first activity on page 49. You will be asked to reconsider and extend them after studying each of the theoretical perspectives below.

3.3.2 The bio-ecological model of development

Conducting an assessment from a bio-ecological perspective requires you to consider the four principle components of process, person, context and time. This will have you looking at the developmental level of the learner and the influence and relevance of the interactive contexts within which he is learning, considering at least the family, school, peer group and community. An understanding especially of learners' proximal processes of interaction with their environment (see section 1.4) is an essential underpinning of the interpretation of performance results and also directs you in your search for ways to muster support from within their life-world rather than engaging in one-on-one interventions.

Learning difficulties, whether associated with intrinsic or extrinsic barriers to learning, must be

Revisit the strategies and questions that you developed to meet the objectives of assessment at the end of section 3.2.3.

- For which aspects of that practical framework does the bio-ecological model have relevance?
- Operationalise the four interacting dimensions of person factors, process factors, context and time (if necessary, rereading parts of section 1.4), by listing the behaviours and relationships which you would look at when dealing with a learner experiencing barriers to learning.
- Now make the necessary adjustments and additions to align your assessment strategies and questions with the bio-ecological model of development.

ACTIVITY

looked at in their broader social setting, thus offering a more complex and holistic understanding of situations and behaviours. The interrelatedness and mutual dependency of systems as well as individuals must form the points of reference – the framework – of the assessment and the interpretation of all information, and of a collaborative intervention plan. The teacher may be taking the role of an expert, but other people in the life-world of each learner individually also have important parts to play in addressing the barriers to learning which are being faced.

3.3.3 The asset-based approach

3.3.3.1 Strengths and assets

One can arguably have no more effective focus in undertaking an assessment for learning support than – in collaboration with the learner and other important role-players in his life-world – seeking to understand the areas of personal **strength** and the **assets** that could be utilised in the various systems in which the learner is involved. Partly reflecting the components of person, process and context of the bio-ecological model, the asset-based approach yet adds a unique and more enabling perspective. In fact, the asset-based approach and dynamic assessment practices can effectively change the very acts of assessment into the first steps of learning support.

Essentially, the asset-based approach developed by Kretzmann and McKnight (1993) is about addressing impediments or barriers *within context*. It is about getting the individual to actualise his personal attributes to the optimum in a self-regulating manner, to be less daunted by challenge and to accept an invitation to grow. It is about utilising available resources in the environment in perhaps new ways, valuing and sustaining that which is familiar, and giving that which appears foreign a fair chance. It is about recognising and appreciating all the people surrounding one for what they know and are able to do and, most especially, *approaching them with trust* when a need is felt for participation, advice or assistance.

Personal **strengths** are those intrinsic qualities which a person musters in addressing a difficulty head on, or also when taking an alternative route

to reach objectives. People sometimes fail to tap into their personal reserves, especially during childhood, because they are not fully aware of their strengths or their worth. Of greater concern is the disregard for the individual's strengths in problem-focused situations, when the power of impairment, shortcomings in the system or disadvantaged circumstances fill all consciousness, blowing up the scale of the barriers to insurmountable proportions.

The personal strengths to watch for would certainly include all of the three types of person characteristics identified in the bio-ecological model: a positive disposition, ecological resources and constructive demand characteristics. As described in section 1.4, a **positive disposition** could be taken to reflect qualities of intentionality, such as interest, initiative, a sense of motivation, engagement, rapport, sustained attention, an openness to recognise options and a willingness to make choices. The **ecological resources** which individuals bring to a task are of a predominantly cognitive-cum-linguistic nature and reflect their level of development, representing all that they have so far learned and experienced, including the underpinning abilities and skills that they could be enabled to apply in an ongoing process of development. People's **demand characteristics** influence their relationships with others and also with the environment. Although often unaware of the fact, a person's habitual style of expression and response (constantly conveyed in an interactive frame) influences his interpretation of events and much of the feedback he receives, also arcing back as a boomerang of general perceptions and self-perception. This is, then, the area of person characteristics in which control could be at issue – opting for a dark or bright view of the world (or even preferring to act blind), being problem-focused or solution-focused in dealing with an obstacle (or even carrying on regardless), recovering with resilience, or nursing bruises and requiring help after failure.

Assets comprise all the extrinsic resources in an individual's life-world of a personal, institutional and inanimate nature that could be utilised within the particular context in addressing any need as it develops. People and relationships could

therefore serve as an asset, also particular knowledge and expertise, facilities, resources, services and financial means. Time must certainly sometimes be recognised as a valuable commodity. Collaboration, especially following a trans-disciplinary model, is highly valued in the asset-based approach, with the aim of making optimal use of all possible forms and levels of contribution to improve the current condition (Eloff 2003a: 9). In true keeping with the asset-based approach, collaboration frequently is not only about the individual who is receiving the support, but also about sharing expertise and means in a process of growth throughout the system. Kleinert and Thurlow (2001: 13) draw attention to the fact that “supports for performance should be, to the maximum extent possible, those that are naturally occurring within the environment, and friendships and the development of a rich fabric of social relationships are themselves a fundamental outcome of the educational process”.

However, the existence of personal strengths and/or assets in the life-world of an individual holds no guarantee at all that these will be utilised in circumstances of need. A great many factors influence the use a person makes of that which is available, especially when perceiving any form of duress. Mapping the personal strengths and assets of learners is therefore close to worthless if restricted merely to scouting through their behaviours and environment to identify and list potentially useful qualities, individuals and facilities to address the particular barrier(s) to learning. For this reason, the task of further detailing your assessment strategies and techniques is postponed until the end of section 3.3.3.2.

3.3.3.2 Asset access mapping

Supporting learners during the very process of assessment to recognise and understand those strengths that they could build on and develop in their learning could help them to break through the impasse of their perceived weaknesses and learning difficulty. In like manner, supporting them during assessment to recognise those assets in their life-world that are accessible, and actually planning how and when to utilise each, could help them break out of the isolation and state of embarrassment and helplessness often brought

about by poor performance.

The asset-based approach calls not for a system change, but for a different map by which to negotiate the system (Eloff 2003b: 19). However, the practical value of merely profiling strengths and assets as these feature on a checklist or mapping them onto a preconceived structure is sorely limited. It is the routes and means of *access* that should be explored during the assessment. By definition, the asset-based approach is relationship driven (Kretzmann & McKnight 1993: 9). Strengths and assets only have use once they are engaged, once they are functioning dynamically within relationships – once they have been accessed.

In generating additional questions in the activity box on page 53, you will hopefully experience how essential it is to seek understanding of the relationships maintained in the learner’s life-world, and also of the improvement of relationships that can potentially be achieved. It should be clear that it is better to explore the functioning of fewer assets, but then to achieve a detailed picture of the degree and conditions of accessibility of each.

When you actually draw an access map on the information derived from the activity on page 53, you may discover that some of the strengths and assets listed originally do not feature at all (even mom or dad may, for various reasons, fall out of the learning support scheme; or the school library may prove inadequate for your purposes). You may find that the route to some of the assets contains huge obstacles or potholes, that some pathways are overgrown but could be cleared, and that some are well trodden, demonstrating mutual trust and openness.

It frequently happens that the strengths and assets identified are as yet poorly utilised or perhaps even not at all. Devising strategies to set the supportive processes in motion is then an essential component of the process of asset access mapping and should not be neglected. Mobilising strengths and assets includes, on the one hand, *empowering the learner* to realise, appreciate and access the talents and resources available and, on the other, *motivating potential supporters* to offer their time, expertise and encouragement. Eloff (2003a: 5) remarks that a professional’s role should be one of “providing leadership and guid-

So, simply identifying strengths and assets does not qualify as effective asset mapping, not even when graphically presented. It is a necessary, but incomplete step.

Look at the assorted examples below and notice how little these facts could by themselves contribute to the reduction of barriers to learning – so far they have not been of much help, have they, so why would conditions change after an assessment which ends here?

- Sam enjoys adventure stories and sport.
- He accepts routine and discipline that is fair.
- He demonstrates some perseverance when initially unable to solve a problem.
- He has a good teacher.
- The school has a big library.
- The school has a support team.
- Mom matriculated with fairly good grades.
- Dad is good at maths and science, and so is his elder brother.
- There is a supermarket and a library three blocks away.

Now devise questions to explore aspects of access to each of the strengths and assets above. Attend especially to considerations of relationship and feasibility, and reflect on how you will engage the learner and other role-players in discussion and assessment activities, eventually to succeed in plotting the access routes. A few pointers are supplied, starting from the first item. Notice how one question leads to others and actually directs attention functionally to other assets that have also been identified, when we concentrate on understanding the specifics of access.

Sam enjoys adventure stories and sport

- What are his preferred settings for enjoyment of the stories – only the television/radio, or is he amenable to bedtime reading (and by whom, and would there be time in the customary family routine, or would the family be open to a change of routine?)? Which other timeslot(s), or other reader(s), or other topic(s), would be acceptable? What is the culture of literacy in the family? What reading materials are available in the home and the neighbourhood? How are Sam's interests cultivated? Would it be at all acceptable (and feasible) to utilise his enjoyment of sport for reading development?
- At which level of text *and* content complexity does Sam enjoy adventure stories? Develop further questions to look at the suitability of text from the perspective of accessibility once you have studied Chapters 7 and 8.
- How could Sam's enjoyment of adventure stories be extended to shared and/or paired reading (and to the retelling of the story – which would be preferable to drawing, as it could contribute to the enhancement of language skills – and to quoting an exciting passage or reading it aloud, and to rereading text silently when challenged to verify crucial information)?
- Who in Sam's life-world has the skills for reading development activities, or would be able to develop the skills to support him, and who has the time, or could be released from some other obligations? Is Sam's teacher in a position to facilitate the support – does she have the time? How does the learning support team of the school (school-based support team) function – do they have materials containing guidelines available? Is the library geared to provide Sam with suitable texts?
- And, finally – of pivotal importance – how much rapport is there at present between Sam and each of his potential supporters? What is the nature of the relationships? Who would be sufficiently focused to sustain encouragement, variety, structure, and discipline over time? With whom would Sam be comfortable, able to distinguish between criticism and direction, accepting of guidance, sometimes approaching them of his own accord for learning support?

ance in supporting the process of change” and points out that successful leadership is, *inter alia*, measured by one’s ability to attract resources and support. Nowhere will this perhaps prove more vital in time to come than in the education and family systems of South Africa.

Ironically, the concept of barriers to learning forms the very opposite of the concept of accessibility of strengths and assets. It is an overriding challenge for professionals with experience in a problem-centred (needs-based) approach to transform their practice to positive psychology and proceed to function consistently in terms of facilitating access to the strengths and assets existing in a learner’s situation. We catch ourselves constantly slipping back into deficit thinking! During assessments, we need to reflect consciously on how and where we find ourselves still dealing broadly with the context of a learner’s circumstances in terms of limitations. If we are not on our guard the very thinking, in a causal frame-

work, in terms of barriers to learning and participation could actually reinforce the tendency towards problem-centredness.

3.3.4 Dynamic assessment

As pointed out earlier, one can effectively change the very act of assessment into the first steps of learning support by conducting a dynamic instead of a static assessment. Dynamic assessment is a test–teach–retest process, i.e. incorporating mediation and/or training to determine not only the learner’s current level of achievement, but especially the *potential level* of future achievement and the ability of the learner to learn from interaction (Van Eeden & De Beer 2001: 181–182). Assessors can permit themselves considerable flexibility in trying to find the form of support that will help children to do their best. Lubbe (2004: 319) actually states that the dialogue and interpretation are critical, since the focus is on *how* the learner and the assessor understand the entire process of the development of knowledge and skills.

The information contained in the results of static, formal assessments is an inadequate basis for learning support since it tells little about learning processes and nothing about mediational strategies that facilitate learning. In fact, the outcome frequently amounts to no more than a label around the learner’s neck instead of providing the functional and operational description that is so essential to move forward. Many learners, especially those coming from disadvantaged social backgrounds or having some form of learning difficulty, perform poorly on static measures, but the ways in which they may be supported remain hidden. Standard tests also seldom provide information about emotional and contextual factors that may be impacting on the performance of the individual (Tzuril 2000: 386–389).

Dynamic assessment rests on the principle of the zone of proximal development. The outcome of dynamic assessment may even reveal emergent functions that have not yet been internalised (Kozulin & Garb 2001: 1). In recognising the strengths as well as the difficulties of the learner and also taking account of context and effective modes of intervention, dynamic assessment offers

Revisit the strategies and questions for assessment as extended at the end of section 3.3.2.

- For which aspects of that practical framework does the asset-based approach have relevance? Make the necessary adjustments and additions to your strategies and questions to align them with this approach.
- Operationalise *strengths* in the types of person characteristics posited by Bronfenbrenner and Morris (in section 1.4, also explained in section 3.3.3.1), by listing at least five more qualities for each that you would be looking out for.
- List at least four individuals who could act as an *asset* to a learner who is experiencing a barrier to learning and at least four other forms of asset which you would explore in each case.
- Operationalise *asset access* where barriers to learning occur, by listing at least three considerations touching on the access to each asset that you have listed.

a more holistic view and understanding of the processes and interactions that underpin the learning. Initially developed to address cultural and experiential differences, it is also useful with learners experiencing with intrinsic barriers to learning (impairments).

Both quantitative and qualitative methods of dynamic assessment can be undertaken. In the former, the process of mediation is a standardised sequence of cues and the zone of proximal development is quantified by calculating the difference between scores before and after mediation, or the number and intensity of prompts and supports a learner needs to learn a task. In qualitative dynamic assessment, the mediation is more flexible and interactive in response to the specific needs of the learner (Losardo & Notari-Syverson 2001: 121–124; Deutsch & Reynolds 2000: 313). Mediation can take the form of actions such as repeating the question or information; focusing attention; guiding the learner’s analysis of the question or information; providing directions, suggestions or additional information; describing; demonstrating; explaining; giving feedback; and modifying tasks (decreasing and increasing their complexity).

For good effect, dynamic assessment should be integrated with the process of asset access mapping. Lauchlan and Elliot (2001: 650) actually hold the radical position that it is only useful to assess a learner’s potential to learn on condition that it

will be possible to transform or adapt his family relationships and school environment to support the realisation of the potential that is unmasked. The assessment might therefore include participation, and even “experimentation”, by individuals who are being considered for the role of learning supporters, for all role-players to achieve a deep understanding of the promotive and impeding effects of the interactions on the level of achievement that the learner is able to attain.

To make an informed choice for dynamic assessment and apply it responsibly, you must be aware of its limitations. It is admittedly time-consuming to analyse the work done during a first round of assessment, do at least one session of one-on-one or small-group intervention (to try out ways of effectively addressing the barriers and mediating the targeted knowledge or skills), and then do a follow-up assessment to determine the amount of progress made. This investment of time could yield an enormously high rate of interest when using the information obtained to enable learners and their learning supporters to actualise all the available learning potential to the maximum consistently, in all of their own time. A second limitation concerns the issues of validity and reliability of the results of a non-standardised process, when practitioners create their own assessment materials for individual learners, and a high degree of flexibility during mediation is encouraged. One could argue that this point

Revisit the strategies and questions for assessment as extended at the end of the previous section.

- To which aspects of your practical framework does dynamic assessment have relevance?
- Make the necessary adjustments and additions to your strategies and questions to align them with this approach.
- Select an item from a formal test on the learning area of your choice for learners at a grade level of which you have some knowledge and/or experience. Devise an item that is similar in complexity and could thus serve to check learners’ mastery, as well as one each at a lower and at a more advanced level. Administer the first item and find three learners who are unable to do it. Then mediate the content, noting and reflecting on the processes required in your mediation to each and the possible reasons for the differences. (You may, for example, find that you need to move back to basics with one, whereas with another you are required to control for attention and accuracy, or you may be able to proceed to practical applications more richly with some than with others.) Finally, administer the retest items and develop some suggestions for effective learning support for each learner.

recognises the importance of adequate training and expertise, which could of course be taken as a further limitation. Remember, however, that when learners are contending with barriers to learning, the dynamic assessment is primarily for purposes of learning support, not placement or promotion. Therefore, what is more at issue is the *relevance* of the information obtained *qualitatively* during the assessment and mediation in revealing the potential of the particular learner. Radencich (1995: 193) dares to say that assessment *has to be* “messy” (author’s emphasis) to be at all valid! Formal techniques of assessment are often constraining and tend to miss some aspects of the contextual, human element. Finally, dynamic assessment may impact on learners with language difficulties due to the increased linguistic input required.

3.3.5 Accommodations in assessment

In the activity in section 3.3.4, you were required to devise assessment items. This immediately raises questions concerning the accommodation of barriers to learning, especially impairments, during the assessment itself.

When assessing learners experiencing possible barriers to learning, the concept of *access* features twice: you should not only recognise the importance of their access to assets, but on a different level you should also be conscious of learners’ chances to break through to the very assessment items themselves, and even, as described by Kleinert and Thurlow (2001: 10), their need for “a different way to show what they know”.

In addition to sensory inability and/or communicative difficulties in accessing the questions, factors such as impulsiveness in responses, failure to complete tasks or questions in the time allotted and environmental disadvantage should be monitored, since these also frequently affect the assessment results and mask important information for learning support. Often learners’ performance on unaccommodating assessment tasks provides a snapshot of only fragments of their dysfunctioning (then certainly predisposing us again to a problem focus!), instead of reflecting outcomes which coherently demonstrate their cognitive development and potential, and you may erroneously be led to believe that none of the

mediation techniques attempted during the dynamic assessment have worked.

The task facing the assessor entails how to determine what learners know and how they function, when there are factors withholding or delaying them in accessing the questions, tiring and/or distracting them by the mere effort it takes to gain access, trapping them into misunderstanding questions, or losing details. What sense should be made of the response pattern across a range of items – of those items that have been refused or not reached, of errors made in questions using a multiple-choice or cloze format, of differences in the quality of responses at the receptive and expressive levels of language usage?

Based on Burns (1998: 1–8), the accommodation of barriers to learning may be defined as *adaptive* acts or measures aimed at making the information and the question of each assessment item *equally accessible* to learners contending with the particular form and degree of barrier for which the accommodation is intended as to learners not experiencing that barrier. What is at issue here is accessibility to the *question*, not to the *answer*.

Accommodation in assessment includes changing aspects of the *presentation* (e.g. format, layout, language), the way in which a test is *administered* (e.g. duration, number of breaks, read-aloud), and even the *content* of a question. Elliot et al. (1998: 13) identified eight domains of accommodations to use in assessment: (a) motivation; (b) assistance prior to the administration of the test; (c) scheduling; (d) setting; (e) assessment directions; (f) assistance during assessment; (g) use of equipment or adaptive technology; and (h) changes in format. Findings based on the data from special schools in the *National Report on Systemic Evaluation* of education in South Africa conducted in 2001/2002 (Department of Education 2003) suggest that accommodations of a linguistic nature in the form of simplifying syntax, enhancing question structure and substituting shorter, more readable words when the meaning of the item is not compromised in this way, can contribute to increased reliability of assessment instruments. Obviously, you need to be very clear about the construct underpinning the particular assessment task. For instance, accommodating a reading dis-

ability in a reading test or a disability in mathematics in a mathematics test will clearly defy the purpose of the exercise.

Revisit the strategies and questions for assessment as extended at the end of the previous section.

- For which aspects of your practical framework does accommodation in assessment have relevance?
- Make the necessary adjustments and additions to your strategies and questions to align them with the need to accommodate certain barriers to learning in assessment.
- Select three items from a standardised test in a learning area of your choice for learners at a grade level of which you have some knowledge and/or experience. Find a learner with a confirmed barrier to learning and devise accommodations to the items to increase access to the questions without providing assistance with the answers. Administer the items and reflect on the success of your accommodations.

assessment task and to the forms of support that could benefit him specifically, gives final definition to the task of learning support.

In addition to the theoretical framework contemplated in section 3.3, **strategic decisions** about assessment are of a highly practical nature and can actually sometimes dictate proceedings. Such practical considerations include opting for norm- or criterion-referenced assessment, the early identification of learners experiencing barriers to learning, the sources of information to utilise (e.g. schoolwork, assessment results, observations), and the participants to involve (e.g. teachers, parents, the learning support team of the school, the learner).

The assessment **techniques** concern the nitty-gritty of selecting and applying methods and instruments to collect the information. These could include checklists; error analyses; portfolio assessments; assessment questions; interviews with parents, teachers and learners (individually or in a group); and some improvised means if the need arises.

Guiding principles of only a small selection of the strategies and techniques will be briefly noted. The variety is huge! You are advised to consult the literature for more, and also develop your own.

3.4 STRATEGIES AND TECHNIQUES IN ASSESSING FOR LEARNING SUPPORT

3.4.1 Orientation

By now you hopefully agree that merely analysing a score profile in terms of high and low achievement cannot provide sufficient information for learning support. Knowing how the learner arrives at answers (irrespective of whether they are right or wrong), i.e. the style and processes of learning, is somewhat less static and could add considerably to your understanding. Then gaining insight into the various contexts of the learning (e.g. what happens in the classroom, during homework sessions and on family outings) and how the relationships and support could be enhanced and utilised, contribute important detail to the picture. Trying out forms of mediation and recognising the learner's potential to learn by ensuring that he has full access to each

3.4.2 Strategies in assessment

3.4.2.1 Norm-referenced versus criterion-referenced assessment

Norm-referenced tests compare an individual learner's performance with that of a "norm" group of the same age or grade level. It is important to note that these tests do not necessarily represent all the essential criteria contributing to a particular level of skill or knowledge. The test results may therefore actually prove unhelpful beyond confirming that the learner "has"/"does not have" "a problem" in comparison with others of like age or grade, and may give virtually no direction as to learning support.

When interpreting results, it is essential to take account of the conditions of test development and the particular construct and rationale of the particular test (right down to each test item!). The only way in which the contextual factor can be

allowed some of its many and pivotal effects in your interpretation of the learner's results on a standardised test is by ensuring that the measure was standardised *locally, recently*, and included sufficient data from the *particular group* to which the learner belongs.

In **critterion-referenced tests**, particular outcomes are targeted in a level-appropriate way and the learner's competence is examined in more detail. These tests are less global and typically more closely linked to a particular curriculum or set of competencies. A learner's score is not compared to a norming population; instead it is compared to a predetermined criterion. Criteria need not be traditional. By assessing learner mastery of a specific goal, these tests tend to give more direction as to the learning support desired, grouping for instruction and assessing individual progress.

3.4.2.2 *Early identification of learners experiencing barriers to learning*

To prevent barriers to learning from developing or intensifying, it is essential to identify learners who are contending with such barriers as soon as possible, even before children reach school age. Many teachers and schools actually follow a policy of routine screenings in Grade R and Grade 1. This is typically a task in which schools could most fruitfully liaise with community expertise and trans-disciplinary resources timeously to bring such needs to the attention of the school. Continuous assessment could also contribute significantly to the timeous identification of learners in need of learning support.

3.4.2.3 *Sources of information*

The purpose of using multiple sources of information during assessment is not primarily to prevent a one-sided interpretation or to clarify the understanding of the assessor – it is essentially in line with the principles of our whole theoretical framework in section 3.3: the bio-ecological model, asset access mapping, dynamic assessment and accommodations in assessment. Assessment for learning support requires you to decide which sources of information are needed in a particular case in order to inform the role-players to

join forces in addressing the barriers to learning and render optimal learning support. Sources of information include the following:

- The learner's **schoolwork** – work done in class, homework, projects, portfolios (in written, oral and practical form) – i.e. the *outcomes* of the learner's thinking and learning, instead of focusing on discrete aspects of the learner's abilities, such as perception and attention (for many professionals this will represent a shift from predominantly quantitative measurement to a more qualitative, integrated and descriptive understanding)
- **Assessment results** – on various occasions and in various formats (in written, oral and practical form); reports from the school and other practitioners, e.g. an occupational therapist
- **Observations** – notes on the learner's learning behaviour (e.g. learning style, problem-solving strategies, metacognition, time-on-task, attention, routine), emotions (e.g. reaction to success and failure, self-assessment, participation and relationships in various contexts)
- **Interviews** – with the learner, teacher, parents, other role-players

3.4.2.4 *Participants to involve*

Closely linked to considering the sources of information to examine, you need to decide whom to involve in the assessment and the learning support. These two points often influence one another. The list should obviously begin with the learner and could further include any of the teacher(s), the school-based support team, peers, the parents, siblings and members of the extended family, and other practitioners. Kleinert and Thurlow (2001: 13) recommend that supportive figures should be, to the maximum extent possible, those who occur naturally within the learner's environment, remarking that friendships and the development of a rich fabric of social relationships are themselves a fundamental outcome of the educational process.

3.4.3 *Assessment techniques*

Not only are there numerous techniques, but each also exists in several forms and can be applied in

a variety of ways. The following are a few examples, but be sure to examine more possibilities:

- **Portfolio assessment.** Since portfolios contain an assortment of the learner's work, this gives more of an idea of what the learner *can* do, not what he *cannot* do.
- **Continuous assessment.** This identifies a difficulty in the early stages and also provides a more comprehensive picture of learning as a process.
- **Self-assessment.** This is useful especially if linked to metacognitive awareness and goal-setting.
- **Tests.** Tests are valuable especially if utilised for positive feedback concerning correct and good answers.
- **Work sampling.** This is often used for error analysis, but is also useful for identifying strengths, work habits and learning style.
- **Discussion with the learner.** This serves to share ideas about what the support should focus on; an externalising conversation enables the learner to explore preferred ideas about who he can be and strengthens the intention to utilise support; when the learner can tell about past successes, it is a confirmation of ability and potential.
- **Checklists.** These often focus on problem areas, e.g. behaviours indicating attention deficits, but the items could also be formulated in a positive way.
- **Observation.** This refers to the monitoring of learning behaviours and emotional responses (e.g. How does the learner approach tasks? Is he able to focus attention easily and stay engaged? How are challenges, problems and failures dealt with?).
- **Interaction.** This is one step further than observation – direct communication gives greatest understanding of progress; it challenges, encourages or stimulates the learner, and is mostly informal.
- **Task accommodations to improve performance.** Examples of this are balancing tasks in order to keep the learner's interest, shortening tasks or breaking them down into smaller components, allowing breaks when necessary, and

relating tasks to familiar experiences and situations.

- **Interview with the teacher and/or parents.** This refers to concentrating on specifics that could be useful in developing the supportive relationship, e.g. What would happen if ...? What would you see if things were just a bit better? Why do you think that ...? Can you give me an example of this? How would he know that this is what you wanted from him? Is there anything you're thinking you need from me here? What would be the most effective way of checking this out? (Hymer et al. 2002: 47–62)
- **Assessment in a specific learning area.** Examples for reading include the following: word reading vs running text; reading aloud vs reading silently; comprehension questions vs executing instructions vs total recall vs setting of own questions; miscue analysis, e.g. grammatical errors and meaningful substitutions that reflect a focus on comprehension (e.g. *was/were*, *pluck/pick*); substitutions which change the meaning of the text, and distortion of words reflecting a focus on decoding the individual words rather than on meaning (e.g. *Nicky was hopping (happy); we saw a samil (camel)*).

3.5 CONCLUSION

If you think back to the opening questions in the introduction to the chapter, it is undeniable that the ethics of assessment are of critical importance. The ethics of assessment that one subscribes to will be strongly related to one's purpose in engaging in an assessment and the theoretical framework that directs the choice of strategies and techniques. The most salient considerations include respect, confidentiality, validity and reliability.

Reflecting on a 25-year research career on assessment, Ysseldyke (2001: 306) concluded: "We should work to have all assessment practices make a difference in students' lives rather than be a prediction about their lives." You will do well to constantly apply this measure when self-assessing your every act of assessment during your entire professional career.

Questions

1. Discuss the difference between assessing the learner, assessing learning, and assessment for learning.
2. Discuss whether it is possible (or advisable) to do away completely with labels in dealing with learners who are contending with barriers to learning. How is this to be achieved?
3. Explain the purpose of assessment when a learner seems to be facing barriers to learning.
4. Explain how the bio-ecological approach, the asset-based approach, dynamic assessment and the principle of accommodation in assessment will give direction to your assessment practice when dealing with learners who are experiencing barriers to learning. Give examples of the questions that you will be exploring during your assessment.
5. Discuss the difference between assessment practices that are a prediction about a learner's life and assessment practices that can make a difference in his life.

Bibliography

Archer, M., Rossouw, W., Lomofsky, L. & Oliver, P. 1999. Assessment in an inclusive classroom. In Engelbrecht, P., Green, L., Naicker, S. & Engelbrecht, L. (Eds), *Inclusive education in action in South Africa*. Pretoria: Van Schaik, 97–126.

Bronfenbrenner, U. & Morris, P.A. 1998. The ecology of developmental processes. In Lerner, R.M. (Ed.), *Handbook of child psychology. Volume 1: Theoretical models of human development*. New York: John Wiley & Sons, 993–1027.

Burns, E. 1998. *Test accommodations for students with disabilities*. Springfield, IL: Charles C Thomas.

Department of Education. 2003. *National Report on Systemic Evaluation. Inclusive Education, Foundation Phase*. Pretoria: Department of Education.

Department of Education. 1998. Draft assessment policy of the general education and training phase: Grades R–9 and ABET. *Government Gazette, no. 19640*. Pretoria: Government Printer.

Deutsch, R. & Reynolds, Y. 2000. The use of dynamic assessment by educational psychologists in the UK. *Educational Psychology in Practice*, 16(3): 311–320.

Donald, D., Lazarus, S. & Lolwana, P. 2001. *Educational psychology in social context*, 2nd ed. Cape Town: Oxford University Press.

Elliot, S.N., Kratochwill, T.R. & Schulte, A.G. 1998. The assessment accommodations checklist: who, what, where, when, why and how? *Teaching Exceptional Children*, 31(2): 10–14.

Eloff, I. 2003a. Introduction to the asset-based approach to intervention. In Ebersöhn, L. & Eloff, I. *Life skills and assets*. Pretoria: Van Schaik, 3–17.

Eloff, I. 2003b. Understanding the asset-based approach. In Ebersöhn, L. & Eloff, I. *Life skills and assets*. Pretoria: Van Schaik, 18–33.

Hymer, B., Michel, D. & Todd, L. 2002. Dynamic consultation: towards processes and challenge. *Educational Psychology in Practice*, 18(1): 47–62.

Johnston, P.H. & Winograd, P.N. 1985. Passive failure in reading. *Journal of Reading Behaviour*, 17(4): 279–301.

Kleinert, H.L. & Thurlow, M.L. 2001. An introduction to alternate assessment. In Kleinert, H.L. & Kearns, J.F. (Eds), *Alternate assessment: measuring outcomes and supports for students with disabilities*. London: Paul H. Brookes, 1–15.

Kozulin, A. & Garb, E. 2001. *Dynamic assessment of EFL text comprehension of at-risk students*. Paper presented at the 9th Conference of the European Association for Research on Learning and Instruction. Fribourg, Switzerland, September.

Kretzmann, J.P. & McKnight, J.L. 1993. *Building communities from the inside out: a path toward finding and mobilising a community's assets*. Chicago: Acta Publications.

Lauchlan, F. & Elliot, J. 2001. The psychological assessment of learning potential. *British Journal of Educational Psychology*, 71: 647–665.

Losardo, A. & Notari-Syverson, A. 2001. *Alternative approaches to assessing young children*. Baltimore: Paul H. Brookes.

Lubbe, C. 2004. Educational psychological assessment. In Eloff, I. & Ebersöhn, L. (Eds), *Keys to educational psychology*. Cape Town: UCT Press, 317–330.

Radencich, M.C. 1995. *Administration and supervision of the reading/writing program*. Boston: Allyn & Bacon.

Tzuril, D. 2000. Dynamic assessment of young children: educational and intervention perspectives. *Educational Psychology Review*, 12(4): 386–389.

Van Eeden, R. & De Beer, M. 2001. Assessment of cognitive functioning. In Foxcroft, C. & Roodt, G. (Eds), *An introduction to psychological assessment in the South African context*. Cape Town: Oxford University Press, 175–208.

Vygotsky, L.S. 1978. *Mind in society: the development of higher-order psychological processes*. Cambridge, MA: Harvard University Press.

Ysseldyke, J. 2001. Reflections on a research career: generalizations from 25 years of research on assessment and instructional decision making. *Exceptional Children*, 67(3): 295–309.

LEARNING SUPPORT

EMMERENTIA LANDSBERG

Learning outcomes

After reading this chapter you should be able to

- ▶ understand how learning support is provided in an inclusive education system in South Africa
- ▶ apply cooperative learning support strategies to accommodate a diversity of learners in a classroom
- ▶ design an education support programme for learners who experience barriers to learning.

Key terms

cooperative learning strategies ♦ *district-based support team* ♦ *learning support* ♦ *inclusive education* ♦ *individualised learning support programme* ♦ *teacher assistant* ♦ *school-based support team*

4.1 INTRODUCTION

According to Scruggs and Mastropieri (in Putnam 1998a: 11) teachers are of the opinion that successful inclusion requires the following:

- Teachers need more time to plan their teaching activities to include a diversity of learners.
- Teachers need systematic and intensive training, either as part of their initial training or as well-planned in-service training by competent and experienced people.
- Teachers need additional teacher assistants who can support them in teaching a diversity of learners as well as support from specialised people for advice and guidance.

- Teachers need adequate learning support materials and assistive devices appropriate for the needs of learners with disabilities.
- Teachers agree that their class size should be reduced to 20 learners or less to accommodate learners with disabilities in their classrooms.

Most of these needs of educators (teachers) are addressed in the policy documents of the Department of Education and will be discussed in this chapter.

Chapter 1 describes the policy of inclusive education and why South Africa has adopted this policy. The Department of Education is in the process of implementing this policy according to the *Education White Paper 6* (Department of Education 2001). A period of 20 years is set aside for the full implementation of this policy. In this chapter we will discuss the implementation of this policy as well as learning support strategies that will help the teacher in the classroom to teach a diversity of learners.

4.2 LEARNING SUPPORT IN SOUTH AFRICA

In this section learning support in South Africa will be discussed with reference to policy documents and other publications of the Department of Education.

4.2.1 Education White Paper 6 and its implementation

Education White Paper 6 (Department of Education 2001) makes provision for support by means of a systems approach and collaboration between these systems. In Chapter 1 these systems are discussed according to Bronfenbrenner's bio-ecological approach. In this section we shall focus on collaboration between these systems, as well as the implementation of policies designed by the national Department of Education to enable these systems to work.

4.2.1.1 At national level

The function of the national Department of Education is to formulate policy, which is done in collaboration with all the stakeholders who are involved in education. The following documents paved the way for the acceptance of the policy of inclusive education and the implementation thereof:

1. The section in the **South African Constitution** on human rights sets out the fundamental rights of each person in this country. No policy can therefore contradict these rights.
2. The ***White Paper on Education and Training in a Democratic South Africa: first steps to develop a new system, February 1995*** specifies that the provision of education to learners who experience barriers to learning and the educational support services should form an integral part of education and should not be viewed as a separate section. The provinces should assume responsibility for the provision and organisation of the education of learners who experience barriers to learning. There should be an inclusive and integrated approach to the provision of services to learners who experience such barriers. Government departments involved with learners who experience these barriers, such as Education, Welfare, Health and Labour, will have to cooperate with one another much more closely.
3. The **South African Schools Act (Act no. 84 of 1996)** makes provision for compulsory education for all and universal admission to public schools. The Member of the Executive Council (for each province) must, where reasonably practicable, provide education for learners who experience barriers to learning at ordinary public schools and also provide relevant educational support services for such learners.
4. The **National Commission on Special Needs in Education and Training (NCSET)** and the **National Committee on Education Support Services (NCESS)** released their final report in November 1997 after countrywide negotiations with all relevant stakeholders. The name of this report reveals the thinking of the participants: *Quality education for all: overcoming barriers to learning and development*. In other words, rather than special needs and support, quality education for all is emphasised. There should be a break away from "changing the person" to a systems change approach. That is to say: accept learners as they are and adapt the curriculum to suit all of them. The findings of this report coincide with outcomes-based education and therefore with the National Curriculum.
5. The ***Education White Paper 6: Special Needs Education: building an inclusive education and training system*** was published in July 2001 after several draft documents, negotiating sessions with relevant stakeholders and written comments from all walks of life. Most of the recommendations of the NCSET/NCESS report were included in this policy document. A period of 20 years is allowed for the implementation of the policy of inclusive education.
6. The **Draft guidelines for the implementation of inclusive education**, published in October 2002, was developed through a broad consultation process involving all stakeholders countrywide, as well as the National Coordinating Committee on Inclusive Education. This committee includes representatives from the Department of Education, officials from the provinces, the South African Federal Council

on Disability, teacher unions and representatives of the Disability Desk of the Office of the State President. The wider public was also invited for information and feedback (Department of Education 2002: preamble).

The South African policy on learners who experience barriers to learning is, therefore, in accordance with modern international trends, and specifies that these learners should be accommodated within the general education system and supported in an integrated, community-based manner. The overarching goal of this national education policy is to enable all learners to value, have access to and succeed in lifelong education and training of good quality. This requires a flexible inclusive education system which will be implemented during a 20-year programme. In the short and medium term, the focus will be on addressing weaknesses in the current system, gradually expanding provision for and access to education for all, building the capacity and competencies of teachers and support personnel, and monitoring and evaluating these developments within the whole system (Department of Education 2002: 93).

4.2.1.2 At provincial level

The role of the departments of education of the nine provinces is to implement policy accepted by the national Department of Education. It stands to reason that the provinces are not on the same level regarding the implementation of the policy of inclusion as resources and manpower differ from province to province. The provinces are responsible, *inter alia*, for resource development (human and technical), building of schools, distribution of finances and resource material, employment of educators, admission of learners who experience barriers to learning, etc.

4.2.1.3 At district level

Each province is divided into several districts, each of which has a team which manages inclusive education in that district. This team is called the **district-based support team** “to provide a co-ordinated professional support service that draws on expertise in further and higher education and local communities, targeting special schools and

specialised settings, designated full-service and other primary schools and educational institutions” (Department of Education 2001: 8). According to the *Draft guidelines for the implementation of inclusive education* (called *draft guidelines*) (Department of Education 2002: 98–100), the core education support service providers at district level include the following:

- **Support personnel** currently employed by the Department of Education such as therapists, psychologists, learning support teachers, experts on specific disabilities as well as other health and welfare professionals (medical doctors, social workers, etc.)
- **Curriculum specialists** who can provide curriculum support to teachers
- **Management specialists** to provide guidelines on management to schools
- **Administrative experts** who provide administrative and financial management support to schools
- **Specialist support personnel** from existing special schools and other education institutions such as higher and further education institutions
- **Other government professionals** such as local government structures, Office of the Status of Disabled Persons, Health, Social Welfare, Justice, Safety and Security, Sport and Recreation, etc. which can be co-opted depending on the particular needs and availability of resources in that district
- **Community role-players** such as parents, grandparents and other caregivers, NGOs, disabled people’s organisations, members of the school governing body, teachers, learners, etc.

This should be a flexible team that may differ according to the needs of the school(s) and the learners. Team members should possess the required competencies to fulfil the following roles (Department of Education 2002: 104):

- **Assessors** of barriers to learning and needs at learner and educator level as well as at organisational level
- **Researchers and evaluators** of resources and educational programmes

- **General learning support facilitators** to identify learning needs and to design learning programmes
- **Specialist learning support facilitators** to provide expert support (e.g. Braille, sign language)
- **Materials developers** to provide learning material that is responsive to particular learning needs
- **Health and welfare workers** to address particular health problems as well as to promote general health programmes
- **Counsellors** for learners, parents and educators

A Grade 5 learner was blinded as a result of a shooting accident. His parents did not want to send him to a special school as he was happy in the ordinary school and was popular among his friends. As this was the first learner to experience visual problems in the school, the principal called upon the district-based support team for help. The following team of experts was put together:

- An ophthalmologist from the nearest hospital to determine residual vision, if any
- An expert educator from the special school regarding assistive devices, teaching strategies and classroom management
- A mobility instructor from the SA National Council for the Blind (SANCB)
- A Braille teacher
- Parents of the learner and the learner
- A psychologist and/or social worker (from the SANCB) who are experts on visual impairment to support the parents and the learner emotionally
- The phase teachers and the learning support teacher from the ordinary school

Who else would you co-opt on this district-based support team and why? Would you say that all the competencies that are needed to support a learner who is blind are covered?

According to the *draft guidelines* (Department of Education 2002: 102–105), the core functions of the district-based support team are

- the development and ongoing back-up of support teams in schools and early childhood learning centres in supporting “the capacity building of these institutions, identifying and prioritising learning needs and barriers to learning in their district; identifying the support needed to address these challenges and pursuing these within a strategic planning and management framework and ongoing monitoring and evaluation of support
- to link these institutions with formal and informal support systems so that needs and barriers can be addressed
- the main focus would be to provide indirect support to learners through supporting teachers and school management to ensure that the teaching and learning environment is responsive to the full range of learning needs. A second focus would be to provide direct learning support to learners where necessary and possible where the school-based support team is unable to respond to particular learning needs” (Department of Education 2002: 103).

4.2.2 Network of support within each education district

Each education district is responsible for the schools in that district. In urban areas these schools are quite near to each other, but in rural areas they may not be. This causes persons from the district-based support team to travel long distances to reach each school, which may hamper the amount of support provided.

It is stated clearly in the *Education White Paper 6* (Department of Education 2001: 10) that support would be rendered according to the level of needs of learners who experience barriers to learning and not according to the impairment of those learners. Learners will be rated on a flexible scale from 1 (low intensity support) to 5 (high intensity support) by an assessment team. The Department of Education accepts that a high level of support could be flexible and that learners could move into a lower level of support and therefore to

another school, depending on the success of the support received. Learners who are in need of high intensity support would be educated in special schools as resource centres, those in need of medium intensity support would be educated in full-service schools and those in need of low intensity support in ordinary schools.

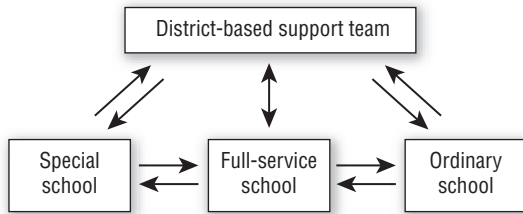


Figure 4.1 Network of support

4.2.2.1 Special schools as resource centres

By the end of the envisaged 20 years of implementation of the policy of inclusion, each education district should possess one special school as a resource centre. As said, all learners who need high intensity support will be educated in this school. The other responsibility of these schools is that of resource centre. That means that their resources should be integrated into the district-based support team so that they can provide specialised professional support in curriculum, assessment and instruction to full-service and ordinary schools in the district. According to the *draft guidelines* (Department of Education 2002: 25–33) the functions of special schools as resource centres are as follows (see Figure 4.1):

- The special school as a resource centre should function as an integrated and coordinated part of the district-based support team. That means that learning support educators should not only be able to interchange between ordinary schools, full-service schools and special schools as resource centres to provide support to teachers regarding barriers to learning but also provide support to particular learners if necessary.
- The special school as a resource centre should provide specialised professional support in curriculum, assessment and instruction to neigh-

bouring schools. This includes training of teachers regarding barriers to learning, management of inclusive classrooms, development of learning support material, guidance to parents, early childhood intervention and development of life skills programmes to make learners who experience barriers to learning less vulnerable to abuse.

- The special school as a resource centre should coordinate support from the community such as health and welfare, disabled people's organisations, the business sector, etc. The special school as a resource centre should also make its human and physical resources available to the community. For example, ABET programmes for people with disabilities could be offered at a special school, as well as outreach programmes for early childhood intervention.

4.2.2.2 Full-service schools

Each education district should have at least one full-service school. Learners who are in need of medium intensity support are accepted in full-service schools. According to the *draft guidelines* (Department of Education 2002: 44–46) the role of full-service schools is (see Figure 4.1):

- to provide support in the school to learners and teachers by means of competent and experienced learning support educators
- to support neighbouring schools with knowledge, information and assistive devices regarding barriers to learning
- to work in close collaboration with the district-based support team to coordinate support.

A full-service school works in collaboration with, and provides assistance and support to other schools in the area so that a range of learning needs can be addressed mainly in learners' neighbourhood schools. It welcomes teachers from schools in the area to learn new skills and ideas in the school and may admit learners from neighbourhood schools for short periods of time for intensive training in specialised areas, such as Braille, mobility or sign language. These services might be run in collaboration with various service providers (Department of Education 2002: 44).

4.2.2.3 Ordinary schools

Ordinary or mainstream schools cater for learners who are in need of low intensity support. Teachers are supported by the district-based support team which organises support and draws its resources from the other types of schools. Learners in need of more support can also be moved to any of the other schools for a short period of time to receive specialised education until they are able to cope in the ordinary school or support can be rendered in the school by experts from the district-based support team (see Figure 4.1).

4.2.3 Learning support in schools

Whether the school is a special school as a resource centre, a full-service school or an ordinary school, it should establish a school-based support team which is responsible for the provi-

sion of learning support together with the teacher(s) involved in a particular learner's teaching and learning.

Teachers should be dynamic, competent and innovative in their teaching methods to accommodate the different learning styles of learners. The following diagram (adapted from Morrison 1998: 407) explains how learning support can be offered in a holistic way, taking all stakeholders on board.

4.2.3.1 School-based support team (SBST)

The school-based support team in each school together with the education support service of the district should take responsibility for

- the in-service training of teachers in the identification, assessment and support of all learners including those who experience barriers to learning

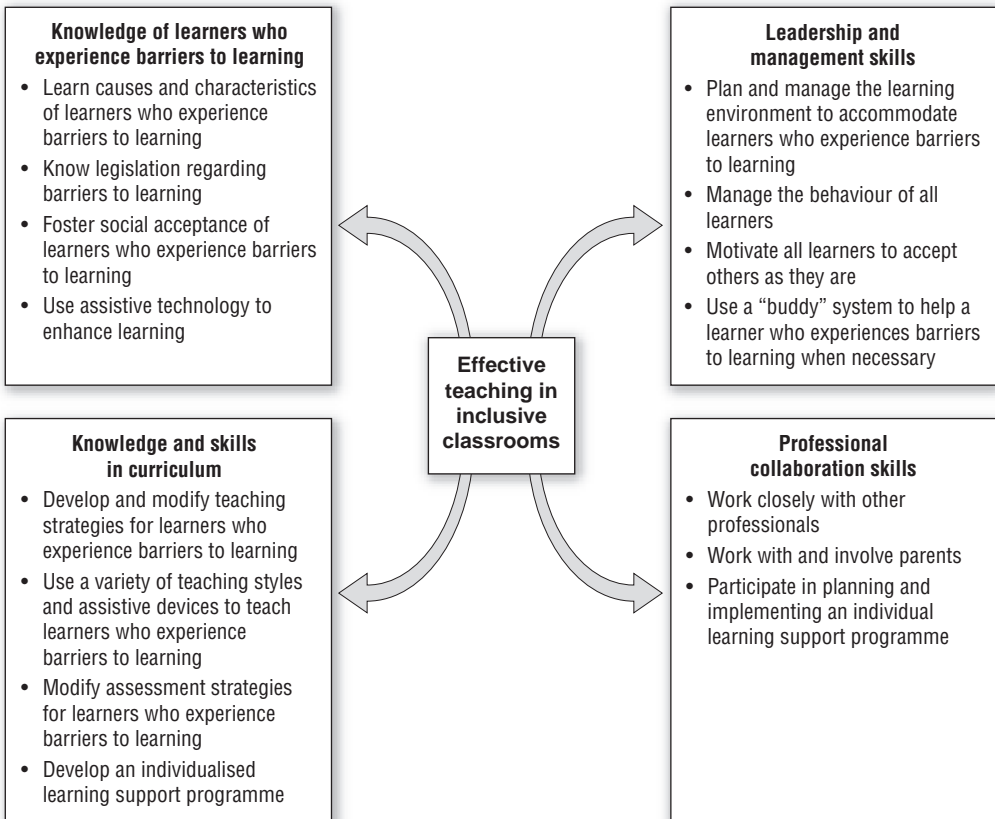


Figure 4.2 Effective teaching in inclusive classrooms

Source: Adapted from Morrison 1998: 407

- establishing networks that promote effective communication between learners, teachers and parents as well as with non-governmental organisations and the welfare, health and justice departments
 - identification and discussion of learner development (organising programmes and new teaching strategies that the class teacher may try to support the learner)
 - placement of the learner in another school if necessary
 - facilitating the sharing of resources (human and material resources: teaching methods and teaching aids) and encouraging teachers to share ideas
 - ensuring parental involvement
 - planning preventative strategies (prevention of child abuse, drug abuse, malnutrition, etc.)
 - supporting teachers on site
 - monitoring and supporting learner progress (the class teacher should give regular feedback on progress made to the SBST).
- The principal – should be involved on a part-time basis
 - A school assessment team representative
 - A learner support material committee representative
 - Any co-opted member from outside depending on the needs of the learner (e.g. an occupational therapist or psychologist)
 - The parents of the learner
 - The learner

Each member should have a particular responsibility towards the team. For example, the learning support teacher acts as coordinator and facilitates the meetings of the team. Discussions should be kept focused and clear. He should further ensure that the goals set by the group are reached and reported on within a specific time-frame. The referring teacher should first consult with the phase teachers and then with the school-based support team for advice on how to support the learner. Team members should take turns to take minutes of meetings. Minutes should be kept safely for future reference. Copies of support programmes, assessment reports (before and after support sessions), and teacher comments should be kept. The learner's progress should be monitored.

The phase representative coordinates phase meetings to discuss learners' barriers to learning and coordinates support programmes for the phase. The parents can provide valuable information about the learner's development and well-being as well as his preferences, needs and strengths. The parents can also support the learner at home under the guidance of the SBST.

The team suggests strategies to support the learner. The ultimate implementation of these strategies rests with the referring teacher who must report to the school-based support team. If the support is not successful, relevant members of the district-based support team and other teachers, also from the special school as a resource centre or the full-service school, can come on board to support the referring teacher and the learner.

4.2.3.2 The role of the teacher

From the above discussion, it is clear that the role of the teacher has changed from transferring

The school-based support team should feature strongly in each school and should be flexible. The learning support teacher should take responsibility for the organisation of this team. Experts from the community, special schools as resource centres, full-service schools and medical services could be co-opted to this team when necessary. Support to learners who experience barriers to learning is therefore a team approach but the class teacher should be in the centre of that team.

The composition of the SBST is dependent on the size and the needs of the school and the number of teachers available. According to the Gauteng Department of Education (s.a.: 10) the SBST should consist of, *inter alia*, the following:

- A learning support teacher who is competent and innovative, and possesses good collaborative skills
- The referring teacher (usually the learning area or class teacher)
- The scribe
- An elected teacher (depending on the needs of the learner – e.g. a teacher of a lower grade who is good at teaching reading if the learner experiences a reading problem)

knowledge to learner-centred teaching. Classrooms should be “exciting places where learners interact with information, people and objects in activities that enable them to shape deeper, more complex and more useful understanding of the changing world” (Rallis et al. 1995: ix). Teachers should therefore accept responsibility for all the learners in their classroom, including those who experience barriers to learning. Pijl and Meier (1997: 9) maintain that inclusive education can only be successful if teachers elicit an attitude of acceptance towards all learners, and when they have sufficient support and resources to teach all learners.

To support the teachers in achieving this, the Department of Education published *Norms and standards for educators* (1998), in which seven roles which competent teachers ought to fulfil are set out. This coincides with the roles of a dynamic teacher as described by Rallis et al. (1995). Some of these roles are:

(a) The teacher as learning mediator

A learning mediator believes that each learner has the potential to learn and the right to achieve his potential in order to live a rich, self-actualising life. This refers to moral values that teachers should possess to become good, responsible and caring. This includes the belief in the basic human rights of learners and their families such as social, cultural, political and citizenship rights identified in the Constitution. Therefore, teachers should know and accept their learners and their families to understand them. They should cherish attitudes of tolerance and respect towards diversity to construct learning environments which are suitably contextualised and which inspire learners. Learners should be educated to have self-respect and to respect others. It is necessary for learners to develop a positive self-concept and to be accountable for their learning and behaviour, thus contributing to a cooperative learning environment (Landsberg & Dednam 1999: 5).

In order to fulfil these values, teachers should examine their own values, their fears, and their assumptions about and reactions towards learners who experience barriers to learning. They should also examine their own teaching styles and investigate ways of acknowledging the vari-

ous learning styles, abilities and interests of the learners in their classes. Instead of blaming the learners for their poor behaviour or learning failures, they should investigate possible ways of finding solutions for these failures by asking themselves questions such as: “What does this learner need?” or “How can I adapt the environment and my teaching strategies so that these learners can also succeed?” (Landsberg & Dednam 1999: 5).

(b) The teacher as interpreter and designer of learning programmes and materials

Consider the following questions:

1. Can a mother teach her daughter to crochet if she herself cannot crochet?
2. Can teachers explain the basics of geometry to learners if they themselves do not understand these?
3. When do teachers know that they have a grasp of the content of the curriculum? Is it when they can explain the content in different ways with the aid of various real examples from the environment?

ACTIVITY

Rallis et al. (1995: 41) call interpreters and designers of learning programmes *constructors of knowledge*. According to them, constructors of knowledge should possess a thorough understanding of their subject field (learning area field), of education in general and of the learning-related values of the learners. This in-depth knowledge and understanding will help them to adapt the content to a variety of learner needs and to be flexible and responsive in their teaching. They will seldom be caught unprepared by questions from learners because they are able to improvise. This means that they can transform and internalise new learning content; they can use knowledge in different ways; they can contextually mediate knowledge because they can influence the values and beliefs of the community. Rallis et al. (1995: 46) summarise the characteristics of interpreters and designers of learning programmes and materials as follows:

They are grounded in content; they have constructed their own meaning for the material they teach. They are grounded in pedagogy; they understand how people learn. They are grounded in their students

[learners]; they understand developmental theories and they know the children they teach ... All dynamic teachers have a strong, constructed body of knowledge about children, teaching and the subject matter.

(c) The teacher as philosopher

Suppose you give the learners in your class the task to interview different sportpeople about what they have achieved thus far, what their goals are, how their sport influences their style of living, etc.

After two weeks you realise that there are not many sportsmen and women in your community, and that the learners' interpretation of who sportspeople are is very narrow. They have only considered football and rugby players. There is, for example, a team of wheelchair basketball players who have reached the final of their league, as well as a bowls player who is the South African bowls champion for players who are blind. What will you do to help them?

You may take the following actions:

1. Warn them that two weeks have already expired and that they have only one week to complete the project.
2. Issue no warning and allocate marks only to those who have completed the project by the due date.
3. Acknowledge that the project is not working as well as you thought it should be, and then ask the learners about the difficulties they have experienced. You discuss the problems and discover that they have interviewed only football players; that only a few players were singled out for the interviews and that these players were not at all friendly; that the learners asked embarrassing questions, for example about the private and social lives of the players and so on. You then discuss these difficulties and give advice about how to prepare for and conduct an interview. You discuss the different sports that are played in the community and extend the date of submission of the project.

The third strategy would show that your action is learner-centred and that you are professionally committed to your task. You are not afraid to acknowledge that the learners needed more preparation for this project. This entails daring and courage – the guts to be critical of yourself and the backbone to accept responsibility for your behaviour. The elements of professional involvement are, according to Rallis et al. (1995: 57), responsibility and accountability, initiative and action, as well as reflection and inquiry.

(d) The teacher as facilitator

In all education documents and especially in the National Curriculum, the role of the teacher is seen as that of a facilitator. It exceeds the traditional role of transferring knowledge and includes the role of leader, administrator and manager (Department of Education 1998: 54). According to Rallis et al. (1995: 76), teachers as facilitators

- create an environment which is rich in opportunities for learners to attribute meaning to what they learn (Facilitators need to be good organisers of their classrooms to meet the needs of a diversity of learners.)
- should demonstrate responsiveness to the fluctuating needs of learners by providing them with ways of assuming responsibility for their learning and facilitating understanding

ACTIVITY

See whether you can find evidence of responsibility and accountability, initiative and action, as well as reflection and inquiry in the actions above.

between teachers and learners as well as among learners

- question learners in an attempt to commit them to the search for knowledge (assessing them in a continuous, formative way)
- teach learners to make sense of the knowledge they acquire, but the knowledge should be tested against knowledge emanating from the community in order to ensure that it is valid, relevant and appropriate, i.e. knowledge should be *contextualised*
- coordinate the interactions which occur in the learning environment – between teachers and learners; among learners themselves; and among the learners and the community, as well as between learners and the study material and information.

(e) The teacher as assessor

The new curriculum focuses on assessment as an integrated part of learning and teaching. Dynamic teachers should equip learners with strategies to assess their own work, to review their knowledge and to critically assess what they are expected to learn. Assessment should be seen as a critical strategy for elevating learners' knowledge and skills to a more complex level of attainment (Vygotsky's "zone of proximal development" – Donald et al. 1997: 50). Authentic assessment should be an integral part of learning support and should be used to encourage questioning and promote learning. Various types of assessment should be used to assess learners' knowledge, skills and attitudes such as oral questioning, discussions, portfolio assessment, written work, tests and examinations.

(f) The teacher as bridge

In the South African Schools Act No. 84 of 1996 and subsequent documents, there is considerable emphasis on the involvement and participation of parents and the community in the education of learners. The teacher's bridging task is to bring the community into the school. This means cultivating a sense of belonging to the community, and entails working together on projects, using the resources the community has to offer to enrich the learning environment and preparing

learners to become economically active and responsible members of the community after school.

ACTIVITY

The learning support teacher acts as bridge by collaborating and working together with the district-based support team, special schools as resource centres, other teachers, parents and learners to combat barriers to learning. Justify this statement with examples from what you have learned thus far.

(g) The teacher as change-maker

Dynamic teachers ought to be lifelong learners. They identify the skills they need to teach a diversity of learners and proceed to seek ways of adding these skills to their repertoire by means of further study, attending workshops, etc. They initiate change by means of collaboration, mediation and negotiation. They defend and plead for learners who experience barriers to learning.

ACTIVITY

Reflect on yourself and your own competencies. Write down the seven roles of a dynamic teacher and assess yourself according to these roles by giving yourself marks on a scale from one to five where 1 indicates very poor, 3 average and 5 excellent. For example:

Teacher as learning mediator	1	2	3	4	5
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Then write down at least three ways in which you can improve yourself in those roles in which you assess yourself as average or below.

4.2.3.3 Teacher assistants

Teacher assistants can be a great support to teachers, especially in class groups with a diversity of learners. However, the teacher assistant should help the teacher and receive instructions from him in collaboration with the school-based support team but should not be responsible for a specific learner alone.

Which of these two scenarios is the healthy one and why?

Scenario 1

Linda is a teacher assistant for the Grade 3 class. She has a Level 5 qualification in inclusive education (i.e. a basic certificate). Although she is mainly responsible for Grant, a boy who is quadruplegic and in a wheelchair, she also supports the other learners when necessary. She helps Grant to fit his hand and neck braces. She sees that he is comfortably strapped in his wheelchair. She fetches his books, turns the pages, and moves him to and from classes as well as around the class when needed. When Grant does not need her assistance, she helps the teacher by preparing teaching aids and reading stories to the learners. During group work, she works together with the teacher and supports the groups which need attention. Initially she had to take Grant out for break, but he is now part of a group of learners who assist him when needed. Because she is involved in teaching the whole class, the other learners accept her and listen to her. She works in close collaboration with the teacher, the school-based support team and the physiotherapist of the district-based support team.

Scenario 2

Mary is the teacher assistant for John (in Grade 5) who is hemiplegic on the left side of his body. Although he can walk around with ease in the classroom, Mary usually brings his learning material to him and carries his books. She helps him do his work, but the other learners become irritated because John's work is always correct. The accusation has been made that Mary is doing his homework for him. The teacher practically ignores John because "he has his own teacher". When John is absent, Mary also stays at home.

4.3 COOPERATIVE LEARNING AND TEACHING STRATEGIES

According to Kagan (1998: 106), cooperative learning is as old as education itself. Research on cooperative learning, however, did not begin until the 1980s. Today, cooperative learning is seen as an educational innovation which forms part of outcomes-based education. Extensive research has shown (Kagan 1998: 106; Lotan & Whitcomb 1998: 1) that cooperative learning leads to

- dramatically improved academic achievement and higher-order thinking skills (especially for the lower-achieving learners)
- improvements in racial relations
- the improvement of the attitudes of teachers and learners towards learners with impairments
- the improvement of the achievement of learners with impairments in ordinary schools
- the improvement of social relations, social skills and self-esteem among all learners.

4.3.1 Characteristics of and requirements for successful cooperative learning

According to Putnam (1998b: 18), in cooperative learning groups individual learners work together to reach a common goal. Johnson et al. (1994: 4) maintain that within cooperative learning, individual learners achieve outcomes that are beneficial to themselves as well as to all group members. "Cooperative learning is the instructional use of small groups through which students [learners] work together to maximize their own and each other's learning" (Johnson et al. 1994: 3). Cooperative learning is thus considered as a sound approach for academically, physically, ethnically and linguistically heterogeneous classrooms (Lotan & Whitcomb 1998: 1; Putnam 1998b: 30–32) like the South African classrooms of today.

The following requirements are necessary for successful cooperative learning (Putnam 1998b: 19–21; Johnson et al. (1994: 9–11):

(a) Positive interdependence

Learners must understand that they are linked to each other and if one does not succeed nor can the others. Putnam (1998b: 19) maintains that positive interdependence is the essence of cooperative learning. This can only be achieved if (1) there is a mutual outcome set for the whole group; (2) the tasks are divided among all group members; (3) resources, information and materials are divided among group members; (4) various roles are assigned to different group members; (5) the group is rewarded for achieving the mutual outcome. The learners in the group must be concerned about the performance of each group member. There should be a group outcome, but each member should also have an individual one. Learners must support each other to achieve these outcomes.

(b) Individual and group accountability

Firstly, the group must be accountable for achieving its outcomes. Secondly, each learner should be held individually responsible for completing the task and contributing to the group to prevent some learners from “coasting along”. This can be done by individual assessment, such as questions asked in the group, individual tasks, tests and so on.

(c) Cooperative skills

The essence of cooperative skills includes social skills. This involves (1) getting to know and trusting each other in the group; (2) communicating accurately; (3) accepting and supporting each other; (4) resolving conflicts among group members constructively (Putnam 1998b: 27).

Putnam (1998b: 19–20) as well as Johnson et al. (1994: 10) are of the opinion that social and cooperative skills should be taught to the learners. Learners in the foundation and intermediate phases should learn to share material, take turns, encourage one another, speak softly and stay with the group. Older learners (in the senior phase, and further education and training band) should be taught to actively listen to others, paraphrase what the others have to say, give compliments, resolve controversy without criticising group members personally, and display positive body

language towards the other members of the group.

(d) Face-to-face interaction

According to Johnson et al. (1994: 10), cooperative learning groups are both an academic support system where learners learn how to learn, and a personal support system where all members of the group are committed to one another. That means that learners should interact directly with each other by means of verbal and/or non-verbal communication. They should promote each other's learning and become personally committed to each other to achieve the mutual outcomes.

(e) Learner reflection

At the end of a cooperative learning activity, the members of the group should reflect on their functioning in the group and whether the outcomes were achieved. They need to describe what contributions were helpful and what behaviour should be changed to improve the functioning of the group.

4.3.2 The size of the group

According to Johnson et al. (1994: 24–25), the size of a cooperative learning group depends on the outcomes of the lesson, the learners' age, their experience in working in groups, “the curriculum materials and equipment available and the time limits imposed on the lesson”. When selecting the size of the cooperative learning group, Johnson et al. (ibid) recommend the following factors be taken into account:

1. The bigger the group, the bigger the range of abilities, expertise, skills and the number of minds for completing a task, as well as the diversity of viewpoints and the risk for controversy and differences.
2. The shorter the period of time to complete an activity, the smaller the group should be. Smaller groups such as pairs are more effective because they need less time to get organised, and more time is available for each member to contribute.
3. The smaller the group, the better the contribution of each learner will be.

4. The larger the group, the better organised the group should be in providing everyone with a chance to contribute; in coordinating the actions of each group member; in reaching consensus; and in keeping all members focused, as well as maintaining good working relationships.
5. In larger groups there is less time for face-to-face interaction and a reduced sense of intimacy. This results in less personal support among group members.
6. The size of the group will depend on the equipment and assistive devices available. If nine computers are available for 30 learners, there could be six groups of three learners each and three groups of four learners each.
7. It is easier to identify learning difficulties if the groups are smaller, and also to pay attention to conflicts and the personal adjustment of learners to the group.

4.3.3 The group members

According to Johnson et al. (1994: 25), a “group’s productivity is determined by its members’ teamwork skills.” Training learners to work together effectively rather than grouping specific learners together is time better spent. Groups can be homogeneous or heterogeneous. Homogeneous groups can be used if they experience the same problems and the teacher wants to support them, for example when a few learners in the group experience difficulties with fractions or have reading problems. However, heterogeneous groups are preferable. Nevin (1998: 55) recommended three types of groups: *core* groups, *formal* groups and *temporary* groups. **Core groups** are more permanent ones where learners work together for six months to a year on longer projects, or they do all their work together. They should be heterogeneous and have four or five members. The members of **formal groups** are assigned to a task or activity that will keep them busy for at least three to four weeks until it is completed. The group consists of two or three members who work together until the learning outcomes have been achieved. For example, learners may be assigned to such a group to complete a project on road safety. They

may interview people and do fieldwork and then write a final report on their findings. For the next assignment, new groups may be formed. **Temporary groups** only last for a class period or two when two or three learners are assigned together to discuss certain concepts or to explain them to each other. They can, for example, watch a video on a certain topic, then divide into groups to discuss the content and find answers on certain questions pertaining the content.

According to Johnson et al. (1994: 26–28), teachers can assign learners to a group randomly, or select them or let the learners select their own groups. There are many ways to assign learners randomly to a group. For this, the teacher can use numbers. For example, if there are 36 learners in a group, nine groups of four learners each can be selected by starting with one and counting in groups of four. All the ones are in one group, the twos in the next group, etc. When the teacher selects the group, he can make sure that one learner who experiences any barrier to learning be assigned to each group, for example a learner who displays disruptive behaviour may be in a group of caring, hardworking learners; a very shy or slow learner could be with a group where there is at least one learner who is supportive and popular. The least recommended procedure for grouping learners is where learners select the group they want to work with, because the learners who are not popular will be chosen last.

ACTIVITY

As a teacher of a class group of 36 learners, how would you go about dividing them into groups to do projects for life skills? Justify your answer.

4.3.4 Classroom management for group work

It is important that the furniture in the classroom be arranged in such a way that it promotes group work. The classroom design should be flexible and may be changed according to the needs of the learners. Visual attractions can be used to focus attention on the most important group rules. Boundaries of workspace should be defined by using labels and signs to designate certain work

areas. However, care should be taken to see that the classroom is not too colourful with too much information. This will distract the attention of learners with short attention spans. The following general guidelines are stipulated by Johnson et al. (1994: 31):

- Members of a group should be close enough to each other so that they can share material, maintain eye contact and talk to each other without disrupting the other groups.
- All the learners should be able to see the teacher without difficulty.
- The space between the groups should allow the teacher to reach each group.
- The learners should have easy access to the equipment, to the learning material and to each other without disturbing others.

4.3.5 *The roles of each group member*

It is the task of the teacher to assign a specific role to each group member. This ensures that each member participates in the group, and it creates interdependence among group members. The learners in the group can take turns to fulfil a specific role.

Johnson et al. (1994: 34) distinguish the following roles according to functions:

- **Roles that help the group form:** one member ensures that all group members speak in soft voices, that they move around quietly and that they take turns when completing an assignment.
- **Roles that help the group function:** one member acts as explainer of ideas; one writes down the group's decisions; one encourages all members to participate; one observes the frequency with which the members engage in the task; one provides support through praising ideas; and one rephrases the others' ideas and conclusions.
- **Roles that help learners formulate what they know and integrate it with what they are learning:** a summariser who summarises the major conclusions completely and accurately; a checker who makes sure that everybody understands the conclusions; an elaborator who relates new concepts to existing information.

- **Roles that enhance higher-order thinking and reasoning:** a criticiser of ideas who challenges members by criticising their ideas; a prober who asks in-depth questions that may lead to better understanding; a reality tester who tests the validity of the work by comparing it with instructions, available time and common sense.

It stands to reason that not all the groups would have all these roles. It depends on the age of the learners, the assignment that has to be completed and the size of the groups. For example, it would not be expected from foundation phase learners to have more than one member for the role of enhancing higher-order thinking skills, while for learners in the senior phase more than one member could be assigned to fulfil this role.

A role could be assigned to each learner by means of a card on which the role is explained. When beginning with cooperative learning groups, it would be good idea to start with simple roles such as a reader, a recorder, a checker and an encourager. Roles should be rotated so that each group member gets the chance to play several roles.

4.3.6 *Explaining the assignment*

It is the task of the teacher to explain the assignment so that all the groups fully understand it. Procedures to follow to complete the assignment and how group members will work together must be clearly explained. Visual organisers such as mind maps that match the thinking process necessary for the assignment may be attached to the wall to help the groups organise their thoughts.

Outcomes that the learners should achieve by completing the assignment should be clear and accurate. Each group should receive a written set of these outcomes. Cooperative learning requires criterion-based and curriculum-based assessment. Criteria which describe the level of performance expected from each group should be attached to a wall chart. For an example of this see Figure 4.3.

Teaching by means of cooperative learning requires good preparation from the teacher. If the teacher is not well prepared, if all the learning material is not available, if the classroom is not well managed and if the teacher does not know

Full marks	Criteria	Marks awarded
5	A clear, accurate, descriptive title	
10	Introduction in which the problem is stated	
15	A topic sentence to begin each paragraph	
5	Use of at least three sources	
20	Correct use of capital letters, punctuation, spelling	
20	Sentence structure: verbs, nouns, prepositions, etc.	
15	Critical thinking	
10	Conclusion	
Total: 100		Total:

Figure 4.3 Assessment form for written assignments

Source: Adapted from Johnson et al. 1994: 49

the strengths and weaknesses of each learner, cooperative learning may not be successful.

4.3.7 Problem-based learning

Cooperative teaching and learning can be used for problem-based learning. According to Jones et al. (1997: 5) in problem-based learning, teachers and learners “integrate concepts and skills” from one or more learning areas while investigating a problem.

ACTIVITY

A Grade 10 science class decided to investigate the purity of the drinking water in their town after a few children had been diagnosed with cholera, one of whom had died. Where should they start? What learning areas are involved? What support do they need from the community to do experiments? What else is necessary?

4.3.8 Conclusion

Cooperative learning and teaching can be a wonderful strategy for teachers when teaching big, heterogeneous groups. However, this way of teaching needs in-depth preparation from the

teacher otherwise it will not be successful. Each and every learner must benefit from cooperative learning.

4.4 AN INDIVIDUAL LEARNING SUPPORT PROGRAMME

Outcomes-based education makes provision for the development of the unique potential of each learner. The contents of the curriculum, the teacher’s teaching strategies and methods as well as classroom management are adapted to suit the potential of each learner.

Putnam (1998b: 42) is of the opinion that learners who experience diverse needs will require some degree of individualised support together with cooperative learning activities. For example, a learner who experiences reading difficulties may need only a few sessions of individual support to overcome them. Individual learning support can be provided by the class teacher in collaboration with the school-based support team. An individual learning support programme should be well planned in advance, but should be flexible so that changes can be made if the initial programme proves not to be successful.

The following five procedures form the core of a learning support programme (Landsberg & Dednam 1999: 24):

- Assess the learner to determine what he has already mastered.
- Formulate the outcomes, i.e. what the learner should have achieved by the end of the learning support.
- Select the contents of the curriculum or learning programme.
- Choose the learning support strategies and methods.
- Assess the learner’s progress.

4.4.1 Assessing the knowledge, skills and attitudes the learner has thus far achieved

ACTIVITY

Assessment has been discussed in Chapter 3 and will not be repeated here. Please read Chapter 3 again before continuing with this chapter.

Assessment should be holistic. The following points should be taken into account:

- The environment in which the learner lives, socio-cultural circumstances, etc. are important. Parents, other persons who were previously involved in the education of the learner and the learner should, therefore, be interviewed.
- Interviews should be conducted with the present and previous teachers to determine their attitudes towards the learner, the learner's attitude towards the learning material, the learner's progress throughout the years, etc.
- The learner's classwork and homework books, portfolios, tests and examination papers should be studied to determine the learner's strengths and needs regarding the curriculum.
- Curriculum-based tests should be used to determine the learner's current performance according to the curriculum.
- A report should be written on the findings.

4.4.2 Outcomes

The outcomes flow from the results of the assessment. The learner's background, knowledge, skills as well as the content of what he has already mastered, determine the outcomes for the learning support. According to Naicker (1999: 21), "outcomes are clear learning results that we want students [learners] to demonstrate at the end of significant learning experiences."

4.4.3 Selecting the curriculum contents

Landsberg and Dednam (1999: 24) maintain that learning support should commence on the level (grade) in which the learner is. If the learner finds it difficult to understand the content or to master it, content from a lower level could be selected until the learner experiences success. The content should be contextualised for the learner to gain better understanding. For example, when explaining the concepts of *bigger than* and *smaller than*, one cannot compare an aeroplane with a motor car if a learner from the rural areas has not seen a big aeroplane on the ground. In the air it looks smaller than a car. The same applies when using pictures of animals such as a giraffe and a warthog

if a learner in a city has not seen these real animals.

4.4.4 Choosing learning support strategies and methods

When choosing learning support strategies and methods, the learner's learning style should be taken into consideration. Learners who are visual-ly orientated will be bored in a class where the teacher is doing all the talking. Learners who learn best when they are touching and manipulating objects will find it equally boring if they must just sit and listen. Learners who want to listen and think about problems first will find it stressful if they must immediately try to solve a problem (discovery). Therefore the learner's learning style must first be determined by means of checklists before appropriate learning support strategies can be chosen (the school-based support team can be of assistance here). Because these learners have not experienced success, the best way of supporting them is to guide them towards experiencing success and to work from the known to the unknown.

ACTIVITY

Please read Chapter 7 on first-language problems, Chapter 8 on second-language problems and Chapter 9 on mathematical problems for specific learning support strategies and methods to support individual learners.

4.4.5 Assessment

Assessment should be ongoing throughout the learning support to determine whether the learner has mastered the skills from a learning support session. Learned skills should also be applied in different contexts in the classroom and in daily living. For example, if a learner who struggles with fractions masters their calculation after a few learning support sessions, examples of fractions in everyday life should be used to assess the learner's newly attained competencies.

Curriculum-based tests could be applied after the outcomes set for the learning support have been met to ensure transfer of skills and knowledge to other contexts.

4.5 CONCLUSION

The point of departure for learning support in inclusive education in South Africa is “the pedagogy of possibility that takes into consideration barriers to learning, different intelligences and learning styles” (Department of Education 2002: 22). This means that every learner can learn and that the teacher should make provision for every learner to succeed. To achieve this, teachers need support from the school-based support team and the district-based support team. On the other hand, teachers should be innovative and energetic. They should experiment with new teaching strategies to involve all the learners in the teaching and learning process.

Questions

1. Select a group of three or four teachers to write a school policy on inclusive education that can be used in your school. First decide how you are going to initiate this assignment. Allot specific roles to each member of the group. Provide each member with a specific assignment to complete the task.
2. Design an individualised learning support programme for a learner who experiences first-language problems. This learner has a limited vocabulary and speaks in very short sentences. His writing is on the same level. Because his reading is poor, he does not comprehend what he has read.

Bibliography

Department of Education. 1998. *Norms and standards for educators*. Pretoria: Department of Education.

Department of Education. 2001. *Education White Paper 6: Special Needs Education: building an inclusive education and training system*. Pretoria: Department of Education.

Department of Education. 2002. *Draft guidelines for the implementation of inclusive education (second draft)*. Pretoria: Department of Education.

Donald, D., Lazarus, S. & Lolwane, P. 1997. *Education psychology in social context: challenges of development,*

social and special needs in southern Africa. Cape Town: Oxford University.

Gauteng Department of Education. s.a. *Guidelines for the establishment of school-based support teams*. Johannesburg: Gauteng Department of Education.

Johnson, D.W., Johnson R.T. & Holubec, E.J. 1994. *Cooperative learning in the classroom*. Alexandria, VA: Association for Supervision and Curriculum Development.

Jones, B.F., Rasmussen, C.M. & Moffitt, M.C. 1997. *Real-life problem solving: a collaborative approach to interdisciplinary learning*. Washington, DC: American Psychological Association.

Kagan, S. 1998. New cooperative learning, multiple intelligences, and inclusion. In Putnam, J.W. (Ed.), *Cooperative learning and strategies for inclusion – celebrating diversity in the classroom*, 2nd ed. Baltimore, MD: Paul H. Brookes, 105–136.

Landsberg, E.I. & Dednam, A. 1999. *Learning support (only study guide for OSN432-T)*. Pretoria: Unisa.

Lotan, R.A. & Whitcomb, J.A. 1998. Introduction. In Schulman, J., Lotan, R.A. & Whitcomb, J.A. (Eds), *Group-work in diverse classrooms; a casebook for educators*. New York: Columbia University, Teachers' College Press, 1–10.

Morrison, G.S. 1998. *Early childhood education today*, 7th ed. Upper Saddle River, CO: Prentice Hall.

Naicker, S. 1999. Inclusive education in South Africa. In Engelbrecht, P., Green, L., Naicker, S. & Engelbrecht, L. (Eds), *Inclusive education in action in South Africa*. Pretoria: Van Schaik, 12–23.

Nevin, A. 1998. Curricular and instructional adaptations for including students with disabilities in cooperative groups. In Putnam, J.W. (Ed.). *Cooperative learning and strategies for inclusion – celebrating diversity in the classroom*, 2nd ed. Baltimore, MD: Paul H. Brookes, 49–66.

Pijl, S.J. & Meier, C.J.W. 1997. Factors in inclusion: a framework. In Pijl, S.J., Meijer, C.J.W. & Hegarty, S. *Inclusive education: a global agenda*. London: Routledge, 8–14.

Putnam, J.W. 1998a. The movement toward teaching and learning in inclusive classrooms. In Putnam, J.W. (Ed.), *Cooperative learning and strategies for inclusion – celebrating diversity in the classroom*, 2nd ed. Baltimore, MD: Paul H. Brookes, 1–16.

Putnam, J.W. 1998b. The process of cooperative learning. In Putnam, J.W. (Ed.), *Cooperative learning and strategies for inclusion – celebrating diversity in the classroom*, 2nd ed. Baltimore, MD: Paul H. Brookes, 17–48.

Rallis, S.F., Rossman, G.B., Phlegar, J.M. & Abeille, A. 1995. *Dynamic teachers: leaders of change*. Thousand Oaks, CA: Corwin.

EARLY CHILDHOOD INTERVENTION

5

ERNA ALANT & MICHAL HARTY

Learning outcomes

After reading this chapter you should be able to

- ▶ define early childhood intervention and state its importance
- ▶ identify the different approaches to early childhood education and discuss the benefits of both an ecological approach and a resource-based approach
- ▶ discuss the characteristics of quality inclusive early childhood development programmes by considering relevant social and physical ecological variables
- ▶ discuss the advantages of using community-based activities as a basis for teaching within the early education context
- ▶ apply the underlying principles of an ecological resource-based approach within early childhood development centres.

Key terms

early childhood intervention ♦ *bio-ecological approach* ♦ *resource-based approach* ♦ *participatory learning opportunities* ♦ *classroom ecological variables*

CASE STUDY

Social context

Mpho (a six-year-old boy with Down syndrome) lives with his mother in an urban settlement with access to infrastructure and services such as a community hall, primary school (with a Grade R classroom), churches, police station and a clinic.

Family composition

Mpho's mother was 25 years old when Mpho was born. Mpho's father left his mother when

Mpho was about a year old and he has had no contact with Mpho since. Mpho and his mother presently live with her second husband and his parents. Mpho has two siblings; a younger sister (from his mother's second marriage) and an older brother (from his mother's first marriage). His stepfather has recently lost his job and the family currently survives on the pension of his parents. Mpho gets along well with his stepfather, but not with his siblings.

Educational experience

Mpho had not previously attended school until this year and has had little exposure to peers in his community, as his mother says they tease him. Mpho's mother enrolled him this year in the Grade R class attached to his local primary school. Mpho's older brother attends the same primary school. Mpho and his brother walk to school and back in the afternoon. Throughout the

year Mpho's mother has been receiving reports that Mpho upsets the class due to his hyperactivity (which seems worse in summer than in winter). The educator says that he does not play with other children – he is very aggressive and hits them. Mpho's mother has recently heard that the school will not accept Mpho into the Grade 1 class next year and she has been asked to put Mpho in another school. Mpho's mother is angry and upset as she says he is able to perform self-help skills independently and he is able to talk, although some of the words are not too clear. She has found a school that will accept Mpho next year but he will have to board as it is far away. Mpho's stepfather says that he is not willing to let Mpho board and that boarding will be too expensive.

5.1 EARLY CHILDHOOD EDUCATION: A SOUTH AFRICAN POLICY PERSPECTIVE

In the Constitution of South Africa, Section 28 of the Bill of Rights (1996), it is stated that a child's best interests are of paramount importance in every matter concerning the child, and that each child has the right to

- a name and nationality
- family or parental care or appropriate alternative care
- basic nutrition, shelter, basic health and social care
- basic education
- protection from maltreatment, neglect, abuse or degradation
- protection from exploitative labour practices.

The Constitution thus reflects a sound basis for addressing issues related to early childhood intervention.

Approximately 40 per cent of young children in South Africa grow up in conditions of abject poverty and neglect (*Education White Paper 5: Early Childhood Education 2001*: 13). It is well known that children born and raised under these conditions are at risk for low birth weight, delayed development, poor adjustment to school and learning problems. These factors necessitate a critical look at how early learning in young children can be enhanced to reverse the effects of early deprivation and maximise the development of potential.

The government has made a clear commitment towards addressing this challenge to “help break the cycle of poverty by increasing access to early childhood development programmes, particularly for poor children and to improve the quality of these programmes” (*Education White Paper 5: 2001*: 7). In *Education White Paper 5*, it is evident that government promotes a multi-sectoral approach towards child development through the government's *National Programme of Action for Children*. This strategic plan focuses on the delivery of appropriate, inclusive and integrated programmes for all children, but in particular for those from poor families, those who experience barriers to learning and those infected with HIV/Aids.

Apart from the Department of Education, a list of more than 30 other government departments have also developed specific policies, laws and programmes in recognition of the need for focusing on early childhood development. These include:

- the Free Health Care Policy of 1994 for all children younger than six years
- the Integrated Nutrition Strategy (draft: January 1998) to facilitate administration of the strategy
- the Welfare Laws Amendment Act of 1997 which states that a child support grant is payable for needy children younger than seven years
- the *White Paper on Disability* adopted in 1997, which focuses on the provision of services to very young children
- the draft policy on pregnant women in prison and children under five who should be allowed to be with their mothers

The extent of the needs of young children and families (which necessitated the drafting of these policies and strategies) clearly reflects a most comprehensive and complex scenario for intervention.

Education White Paper 6: Special Needs Education (2001) also clearly describes the policy for building an inclusive education and training system in the country. The Paper describes how the policy will systematically move away from using segre-

gation according to categories of impairment as an organising principle for institutions. The focus will be on supporting learners who experience barriers to learning to be included in mainstream educational contexts wherever possible. This Paper clearly describes the principles of “education for all” by acknowledging the right to education of all learners including those with impairments.

Before discussing issues surrounding early childhood education in more depth, however, it is important to focus on what is meant by the term “early childhood intervention”.

5.2 EARLY CHILDHOOD INTERVENTION: A BIO-ECOLOGICAL APPROACH

Early childhood intervention is the broad term that refers to the processes oriented towards facilitating optimal early childhood development. These processes are focused on preventing developmental problems in young children as well as minimising the impact of problems or impairments once they are identified. Early childhood intervention thus addresses both issues relating to how to prevent children at risk from developing difficulties, as well as how to minimise the impact of the impairment on the lives of children with established risks or impairments. Meisels and Shonkoff (2001: 3) describe the mission of early childhood intervention as “helping young children and their families to thrive”.

Addressing early intervention clearly implies not only focusing on the child and the needs of children, but also facilitating the environment that the children live in, in order to ensure a more congenial context for child development, as discussed in Chapter 1. This means that families are important participants in early intervention processes. Apart from families, however, the broader community that the children live in plays a major role in facilitating early childhood intervention. An orientation towards facilitating a sensitivity to children and their needs and rights in early childhood education programmes, as well as to programmes focusing on children’s health and psychological well-being, is vital in securing a favourable environment for children to grow up in. Bronfenbrenner (1979) describes the interac-

tion of parents and children within the context of multiple relationships and milieus. This theoretical model recognises the significant influential factors and relationships in the environment and how these can impact on the child’s development. As discussed in Chapter 1, the revised bio-ecological model (Bronfenbrenner & Morris 1998) acknowledges that a person’s disposition, individual characteristics and experiences also contribute to shaping future development. Clearly this influence between family, child and environment is not one way but reciprocal, as parents and children both influence and are affected by the environment.

Figure 5.1 illustrates Bronfenbrenner’s model of interlinking systems.

From this figure it is clear that Bronfenbrenner describes four ecological contexts for human development. One of the main benefits of this ecological type of approach to early childhood development is that it emphasises that situations and actions of people in the child’s environment significantly impact on child development – irrespective of whether the child has direct contact with that environment or not.

The inner circles represent the microsystems. These systems are the immediate settings in which an individual develops. The system therefore includes the immediate family, early learning centre and social relationships. The quality of the microsystem depends on the sustainability and consistency with which it can provide a positive and congenial environment for children to learn and experience new challenges that will enhance development. The system is dynamic and changes as children get older and relationships change. The social richness of an individual’s life is therefore measured by the availability of nurturing, multifaceted relationships that emphasise playing, working and loving.

Mesosystems are the relationships between microsystems in which the individual experiences reality. This refers to the links between the different microsystems in which the individual functions. An example would be the number and quality of the connections between the child’s family and the school that the child attends. What role do the parents play in facilitating the child’s coping at school? How frequent is the contact

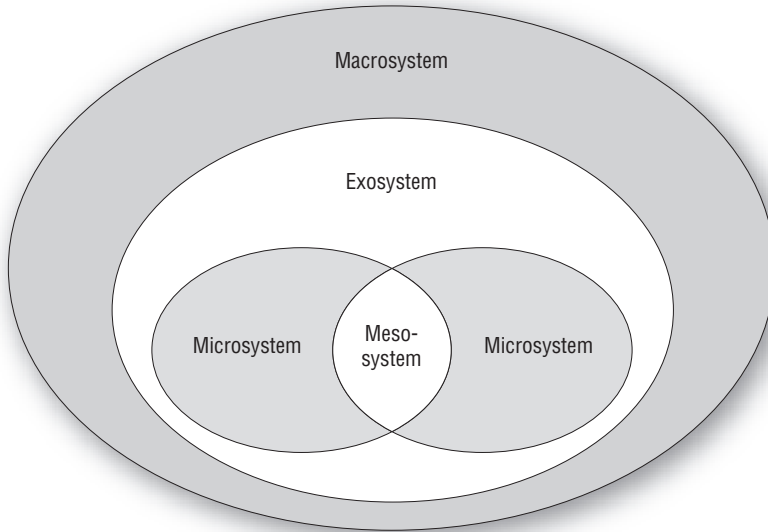


Figure 5.1 Visual representation of Bronfenbrenner's ecological systems approach

between the educator and the parent? Research suggests that the stronger the link between microsystems (e.g. home and school) the more effective intervention is in the long term (Bruder 2001: 216).

Exosystems are those settings that have an influence on children's development, but in which the children themselves do not play a direct role. For most children this would include their parents' workplace, decision-making boards like parent-educator associations, sports councils, etc. These systems impact on the children in two ways – either by increasing risk or by increasing opportunity. Risk could occur from conditions at the parent's work that would negatively impact on the parent's behaviour at home, for example long working hours or low payment. This would lead to increased stress within the home. This could negatively impact on the children's relationship with their parents and thus increase risk. On the other hand, parents with a better job and pay could spend more time at home. This situation would enhance the opportunities for interaction for the child and could be seen as increasing opportunity.

Macrosystems, are the broad, ideological, demographic patterns of culture or subculture

and serve as the blueprint for the development of the child. This system refers to the general orientation to the world as it is and as it can be. An increase in the concentration of families who live in poverty within specific geographic areas, for example, imposes great challenges on early childhood intervention practices. For early childhood intervention to succeed in such situations, a systemic approach towards addressing not only issues relating to the child, but also issues in facilitating ecological transformation as part of the programme goals is required.

5.2.1 Application of a bio-ecological analysis

The framework of Bronfenbrenner's model (Bronfenbrenner 1979; Bronfenbrenner & Morris 1998) can be meaningfully applied to different social contexts. For example, we can take a family living in a poverty context in an area with a high infection rate of HIV/Aids.

On the macrosystems level in South Africa there are large segments of the population that live in poverty. This means that many of these families have great difficulties in providing children with adequate environmental circumstances in which to thrive. In addition, the problem of HIV/Aids has

caused great numbers of children to be infected and affected by HIV/Aids. Child-headed households and households headed by grandparents who are not able to provide adequate support to the development of young children are increasing. It is indeed difficult to overemphasise the devastating conditions that many young children in South Africa have to grow up in.

On an exosystem level, increasing violence in many communities negatively impacts on children's safety and their freedom to run around and play with friends in the neighbourhood in a care-free way. Similarly, poor work conditions and unemployment have left many families without homes, electricity and running water. This has a negative impact on children's health and general well-being.

On a mesosystemic level, adverse conditions often lead to isolation of families, thus greatly reducing networks or social capital within communities where this resource is pivotal. Contact between the home context and school, church and health care system becomes most tenuous as families isolate themselves and get isolated by communities. Most important in this process is also the social isolation of families, in particular those with family members infected with HIV/Aids.

On a microsystemic level, this scenario clearly has major implications for close interactions around the child. As parents become more stressed and irritable, child and sexual abuse may become more prevalent. Parents become less able to provide a secure home in which their children can use opportunities to learn and take risks while feeling secure and protected. This is because they themselves are struggling to survive in difficult circumstances. Similarly on a personal level the child may experience feelings of insecurity and may present as distractible or withdrawn within the home and other contexts. Physiological consequences to the individual such as malnutrition may also negatively influence the child's ability to engage in learning opportunities.

From the above it is clear that a reciprocal interaction exists between the different ecological levels within which a child and family live. Although we can isolate the different levels to enhance understanding of the complexity of fac-

tors related to early childhood issues, it is impossible to separate them.

ACTIVITY

Describe the factors on each of the micro-, macro-, meso- and exosystemic levels discussed in Bronfenbrenner's model on page 81 that contributed to Mpho's failure to thrive at school.

5.2.2 A bio-ecological approach to early childhood intervention: focusing on assets and resources

From the bio-ecological model developed by Bronfenbrenner it is evident that children should ideally grow up in an environment that is potentially rich in opportunities for learning and participation. Apart from the immediate family and close networks, children also interact within a community and are exposed to multiple sources of opportunities for interaction. The developing child is exposed to a vast number of experiences, each of which makes some impact on the development of the young child on different levels. These kinds of experiences constitute the socio-cultural context for the child's participation in everyday life activities. These interactions in turn provide some opportunities for the development of skills, as well as learning social and cultural roles and routines, which facilitate inclusion within the community. Clearly these experiences of daily life play a major role in promoting learning and development.

According to Dunst (2001: 308), one way of describing and grouping the life activities of a child is to look at three sources of experience, i.e. family life (including experiences within the parent, child and family routines, parent-child play, family rituals, celebrations, etc.), community life (a mix of people and activities that provide children with experience in the context of family outings, running errands, neighbourhood and community places) and the early childhood education programme (i.e. learning opportunities afforded in the context of early learning programmes, early childhood special education programmes, parent-child play groups). However, community, family and childhood education activities are not independent sources of environmental influences

and consequence. They overlap and provide some of the most meaningful learning opportunities for the young child.

The identification of the resources in the child's environment that can provide a basis for learning opportunities and participation is pivotal for early childhood education. Children, like adults, learn and develop interests from exposure to events and experiences within their environment. It is well-acknowledged practice to facilitate learning by focusing on what is familiar to the child and to expand learning experiences from this interest base. Clearly a comprehensive early childhood education programme would aim to use the learning opportunities and resources in the child's environment (i.e. family and community exposures) as a basis for classroom learning experience and to facilitate generalisation of classroom experience into family and community life. The interaction between the three environmental resources of family, community and classroom is thus pertinent in using existing opportunities to facilitate child development.

5.3 HOW CAN THE EDUCATOR USE A RESOURCE-BASED APPROACH TO FACILITATE EARLY CHILDHOOD EDUCATION?

Clearly, one way of undertaking such an integrated approach to early childhood education would be by focusing on the activities in different environments that the child must engage in. According to Dunst (2001: 313) an activity setting is an everyday experience or event that provides a context for learning for the child – a participatory learning opportunity (PLO). At the basis of the child's participation in the community is the ability of the child to be interested in and become engaged in the learning opportunity. The activity setting to a large extent determines whether a child becomes engaged within the specific context. Activity settings therefore provide a context for developing competencies and describe the activities that a child is exposed to which will arouse the child's interests. When a child is interested in an activity, the chances are much greater that the child will become engaged, and therefore involved in the activity. Dunst (2001: 313) thus

formulated an interesting paradigm that states that

- interests create opportunities for different skills and competencies to develop
- engagement provides opportunities for mastery of the skills through active participation.

Therefore, mastery of skills occurs through engagement in activities. This implies that the educator needs to interact closely with the environment (i.e. family and community context) of the child in order to identify potential activities that can be used to facilitate learning within not only the classroom context, but also in the broader social context of the child. Educators, parents and community members thus need to get together to develop prominent activity settings in the children's environment that can be used as a basis for the comprehensive development of the child. Table 5.1 provides examples of sources of community-based participatory learning opportunities based on the identification of activity settings within the community.

This table reflects a broad range of activities that children and families could participate in within the broader community context. To use this resource on various levels within the classroom context would clearly assist the child in identifying with the topics or activities, while at the same time drawing from his own experience as a resource for sharing information and events within the class context. An example would be an outing to the funfair. The resulting experiences from the activity could be used as a basis for various classroom activities. Examples of such activities may include, but are not limited to, an arts-and-crafts activity where all learners help paint a giant Ferris wheel. Every learner could bring a photograph of himself from home and place it somewhere on a seat in the Ferris wheel. Such an activity may then be used to illustrate language concepts such as *above/below/next to*. Learners' photographs may be swapped around to further illustrate the concepts. The learners may then compile a story that includes all of the exciting activities that occurred during the day. Once again the learners should be an integral part of the story and share how they felt when certain things happened (to themselves or to others in

Table 5.1 Community-based participatory learning opportunities

<p>Amusements and attractions</p> <ul style="list-style-type: none"> Aquariums Bird sanctuaries Farms: holiday activities Planetarium Science centres Zoos National parks/game reserves Hiking trails Circus Funfairs/amusement parks <p>Arts and culture activities</p> <ul style="list-style-type: none"> Children's museums Historic sites Museums Musicals/plays/ballets Outdoor concerts Performing arts for children Regional attractions <p>Clubs and organisations</p> <ul style="list-style-type: none"> Community centres Hobby/activity clubs Playgroups Scouts/Girl Guides/Brownies Toy lending libraries <p>Community celebrations</p> <ul style="list-style-type: none"> Public holidays Church festivals Historic celebrations Local fairs Shows 	<p>Family occasions</p> <ul style="list-style-type: none"> Church/synagogue/mosque Family gatherings Movies Picnics Shopping Eating out Weddings Funerals Religious holidays <p>Learning and education activities</p> <ul style="list-style-type: none"> After-school programmes Art Ceramics/pottery Creative movement Dance Radio/TV programmes Drama classes Child care/preschools Gymnastics/tumbling Library story times Magic shows Music Nature centre activities Puppet shows Religious education Science centre activities <p>Parent and child activities</p> <ul style="list-style-type: none"> Playgroups Moms and Tots 	<p>Outdoor activities</p> <ul style="list-style-type: none"> Biking Birdwatching Boating Camping Fishing Gardening Hiking Horseback riding Walks/races Kite flying <p>Parks and recreation</p> <ul style="list-style-type: none"> Open/family gym time Organised activities Parks Playgrounds Swimming pools Botanical gardens <p>Sports activities</p> <ul style="list-style-type: none"> Golf/adventure golf Rugby Karate Kick-boxing Rollerblading Soccer Swimming Tennis Running Netball/basketball Softball Hockey Action cricket Tenpin bowling
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Source: Modified from Dunst 2001: 318

the class), as well as how they felt when they went on various rides. Lastly each learner could take his entrance ticket and stick it on a piece of paper or in a book and draw a picture of his favourite ride to take home and show his family. Similar activity settings could also be drawn up for families and

could be used as a basis to encourage parent participation in early education programmes.

5.3.1 Involving parents in the early education programme

Parents are children's most enduring educators. When parents and practitioners work together in early childhood settings, the impact on the child's development and learning multiplies. An effective partnership with parents in the early education setting is thus pivotal to ensure long-term and sustained impact. This partnership will be discussed in more detail in Chapter 11.

Create a list of community-based participatory learning opportunities that children growing up in a community such as the one in which Mpho resides in may experience. Compare this list with the list of opportunities specific to the community you grew up in.

What are the benefits of involving parents in early childhood education?

5.3.1.1 Benefits for children

Continuity between home and the early childhood education programme is most important to increase consistency in the child's life. Parents and educators who share a joint focus can enrich each other's understanding of the child's development and work towards achieving common goals. A mismatch between home and school values can introduce considerable tension in children, which would negatively impact on their development and freedom to explore. It is therefore vital that sustained contact is maintained, in order to allow the child to grow up in a context of ecological harmony between settings.

5.3.1.2 Benefits for parents

Parents are ultimately responsible for bringing up their children. This experience can be most challenging and most parents would welcome support from practitioners and educators who have a broader experience. Parents themselves also need to develop. Involvement in school activities and governing bodies of early childhood development centres provides parents with the opportunities to build their own skills and empowers them to speak for themselves within the schooling system. In addition, involvement in school activities brings parents together, which enables them to interact and share common joys and sorrows. This is particularly important in disadvantaged communities where parents have fewer social networks for support. By actively participating in school activities parents can gain access to additional social networks to facilitate access to further resources in the community.

5.3.1.3 Benefits for educators

Many early childhood practitioners are parents themselves which narrows the gap between practitioners and parents, as practitioners are able to identify with some of the common issues in raising children. By cooperating, educators and parents bring together two important parts of the child's world. The educator has specialised knowledge and understanding of child development and education, and the parents have in-depth

knowledge of their own individual child and the circumstances within the family and social context. Differences can be shared, explored and respected; however, this requires a trusting relationship between parents and educators. In the early childhood development context this kind of interaction also brings another dimension to the work of early childhood practitioners as it facilitates the expansion of their own understanding of diversity and family patterns and practices.

5.3.1.4 Challenges of the partnership

Parents and educators often have anxieties about working together. Past experiences of parents, who may perceive educators as being evaluative, often lead to parents being hesitant to approach educators to discuss issues of mutual concern. Transport problems, limited opportunities to meet, as well as long working hours and pressures at work all contribute to the difficulties in establishing partnerships between educators and parents. Misunderstanding between parents and educators could also lead to the educators misinterpreting parent behaviour as a lack of interest in their child's development. Educators can become discouraged owing to the parents' apparent lack of participation and may systematically decrease their efforts in involving parents in school activities. These issues are all prominent in the South African school context. However, none of these problems are insurmountable and consistent efforts need to be made to put partnership into action. In the next section some ideas for the facilitation of partnerships between parents and educators will be discussed.

5.3.2 Strategies for building partnerships between educators and parents

Draper and Duffy (2001: 151) identify four different aspects of working with parents within the early childhood education environment. These include

- working with parents around children's learning
- support for parents
- access to further training
- parental involvement in management.

These aspects and others relating to building relationships with parents will be discussed in more depth in Chapter 11. For the purpose of our discussion, however, we will focus on building partnerships between parents and educators within the early childhood development context.

Firstly, working with parents around aspects of their children's learning involves being sensitive to the specific needs of the child and parent. For example, educators can be flexible in allowing a parent to stay at school if the child is experiencing separation anxiety during the first few days of the new year. Arrival and collection times are most valuable in developing a relationship with the parents as this allows for opportunities to discuss the child's learning experiences for specific days. Educators and care workers therefore need to be available during this time for discussions with parents. Alternatively a communication system can be implemented where parents and educators communicate with each other about what has happened in their respective learning contexts. Keeping a book or diary with daily entries is one suggestion.

Many parents may be working and/or studying, and finding specific ways of providing them with access to discussions with educators and of keeping abreast with school activities is important. Meetings over weekends or on a monthly basis, newsletters, as well as websites that parents can access at their own convenience are all additional ways of providing access to those parents who do not transport their children to and from school. Contacting parents who are illiterate or who have low levels of literacy is a current challenge in many early childhood development centres. Suggestions for contacting such parents include using a dictaphone to record a short message in the home language of the parents (with the help of an educator who is able to speak that language, if necessary). The message can then be replayed at home and the parents can compose a reply that can be sent back with the child. Alternatively many more people are gaining access to cellular phones and the voice message option may be utilised to leave messages for the parents in a language they understand. In certain communities there may be a family member, nurse/sister at a clinic or another person in the vicinity who may

be literate and who (with consent) may agree to act as an "interpreter" of written messages for the parents. Parents, family members, community members and the educators involved should engage in collaborative problem solving to reach a solution that is acceptable to everyone.

Parents can also be involved in specific programmes with educators to develop relevant material for use in the classroom. The development of a common understanding of different community and family activity settings, and descriptions of what happens in these activities is particularly important in providing the educator with a relevant context for facilitating learning in the early learning stage. These joint discussions can also create awareness among parents from different communities of how to facilitate different opportunities for learning at home and in the community.

A second way of involving parents is by means of parent support. Very often parents are in need of support and an opportunity to share their difficulties with teaching staff. Difficulties in coping with children at home, particularly with children who experience barriers to learning, necessitate that structures for parental support are developed. These structures could include parent support groups, visiting psychologists to assist parents in dealing with relevant issues as well as visiting social workers to assist in financial and other familial difficulties. In particular, immigrants or parents who are newcomers to a specific area often need additional assistance to facilitate their inclusion into the community. A thorough understanding of the parents' point of view is crucial in providing meaningful and relevant support. Clearly the development of such support structures should be a joint initiative between educators and parents.

Thirdly, the early childhood education context needs to be sensitive to directing parents into different areas of training. This could include courses in first aid, parenting skills workshops, nutrition, hygiene and many others.

A fourth way of involving parents in early childhood contexts (many of which are institutionalised) is involvement in the governing board or management of the school. A parent forum that advises the board can also be established to expand the participation of parents as part of the

management of the school. These structures are indeed important in facilitating partnership between practitioners and parents on different levels. Clearly, involvement of parents in only one way in an early education context would severely limit the scope of the partnership and consequently have long-term impacts for all involved, but particularly for the learning child.

ACTIVITY

Discuss some strategies and activities that Mpho's educator could have used to build a positive partnership with all the parents of the children in Mpho's class.

5.4 DIFFERENT APPROACHES TO EARLY INTERVENTION: THE IMPORTANCE OF SOCIAL INCLUSION

To place the current approach in perspective, it is important briefly to refer to different approaches that can be taken towards early childhood intervention. Clearly, the aim of early intervention is to see that intervention with children and families starts as early as possible to prevent the development of more extensive developmental problems in children. Rather than waiting until the child is in school, effort must be invested to identify children and families at risk at an earlier stage to ensure more long-term success.

Traditionally most early intervention programmes have been oriented towards facilitating the skills of the individual child. This approach is based on the theoretical stance that there are certain critical periods of learning for a child. This would imply, for example, that before the age of five years, there are critical learning periods during which the child develops communication, social and motor skills. The implication is that stimulus deprivation during these critical periods could lead to delays in development (Meisels & Shonkoff 2001: 12). It is true that younger children can learn certain skills more rapidly than older people can; for example young children clearly are more adept at learning new languages. It is also important to note that having missed out on a critical period in development does not mean that the child cannot develop specific skills.

Learning these skills at a later point, however, might take longer. It is thus beneficial to start earlier rather than later.

Focusing on skills teaching of the young child, however, does have definite limitations. In the first instance the focus is on the child and not necessarily on the family or environment in which the child grows up. This often means that skills learned by the child within the intervention setting are not practised or generalised into the different contexts within the child's world. These children then often seem to regress after a period of no intervention, as the sustainability of this approach to early intervention is often very limited.

More recent approaches in early intervention increasingly acknowledge the limitation of focusing only on skills training of the child. As interventionists become clearer on the interaction between child, family and environment, the process of intervention is increasingly seen in the context of a broader and more comprehensive approach towards supporting the child and family within the community. This means that the focus is on the child's mastery of skills within the social context – the ability to cope functionally, solve problems and participate within the community. This can be described as a functional, community-focused approach to early childhood intervention. It implies that the focus in early childhood education is more on the inclusion of information and interaction from parents and those in the environment, in order to increase the integration of learning opportunities within multiple contexts.

Systematically, a greater sensitivity has also developed to the accommodation of diversity as a means to enhance interaction and learning. Multilingual and multicultural experiences provide not only a rich source of learning experiences, but contribute largely to facilitating the social skills necessary in an inclusive community. An inclusive approach, however, also focuses on the integration of children with impairments within the mainstream. The current focus on the inclusion of children with impairments within mainstream, early-education learning contexts is based on the premise that enhancing interaction between children with varying abilities and cultural backgrounds from an early age will facilitate their adaptation and socialisation into a diverse socie-

ty. To achieve this, however, it is essential that educators are sensitive to the ways in which the early childhood educational context needs to be structured and to function in order to facilitate these interactions.

The early childhood learning centre itself is clearly also an environment on its own and therefore an ecological context. Educators need to be sensitive to how they can facilitate interaction between children by structuring the classroom. It is for this reason that the next section will focus on the different classroom variables that researchers have identified which may have an impact on children's interaction and learning.

5.5 CLASSROOM ECOLOGICAL VARIABLES

Ecological variables in the classroom can be defined as both *physical* and *social* in nature. The physical ecology refers to the more static characteristics of the classroom, such as the physical space, organisation of space in the classroom, toys and play material available, number of learners in the class and the educator–child ratio. The social ecology refers to the social interactions between learners.

5.5.1 Physical ecological variables

Table 5.2 provides an overview of some research findings in relation to the different physical ecological variables that need to be considered when actually planning the inclusive early childhood environment needed in order for learning to take place.

The physical ecology of the classroom provides the environmental structure within which social interactions between learners, and between learners and adults occur. The research discussed in Table 5.2 shows that it is important that educators are aware of the different aspects of the physical set-up of the classroom and how this can have an impact on the social behaviour of learners in the class. Although some of these aspects (e.g. the ratio of educators to learners) cannot necessarily be controlled by the educator, at least the educator is alerted to the way in which this factor can impact on learners. The educator is then able to address the problem and compensate for it. Examples of possible solutions may be to intro-

duce more structured play areas in the class so that learners do not get in each others' way, or to plan activities carefully by setting up some learners outside, while others are inside to allow for more space for each activity.

5.5.2 Social ecological variables

The interactions between learners make up the social ecology of the classroom. Traditionally children with impairments were in separate schools; however, the international and local trend is for inclusion of these children within the mainstream classroom. Table 5.3 briefly outlines the main research on factors impacting on the social ecology.

Table 5.3 focuses on conditions within the preschool setting that could have an impact on interaction between peers and learners experiencing barriers to learning. Pertinent features that can impact on the social ecology or interactions within the classroom are highlighted.

From these factors it is evident that, in general, the social inclusion of children with impairments with typical peers has a positive impact on the learning of these children. However, limited research has been conducted on the topic in relation to how these interactions impact on other learners in the rest of the class. This table provides important information that can be used as a guideline for educators in evaluating issues surrounding the inclusion of children with impairments in the classroom. An educator, for example, needs to be aware of the impact that personal beliefs can have on the effectiveness of the inclusion process.

It is evident from Tables 5.2 and 5.3 that issues surrounding social interaction and the interaction between physical and social ecological factors in the classroom are varied and complex. The influence of educator interaction with children, educator beliefs and professional collaboration are clearly important features that impact on the learning environment.

ACTIVITY

Using Tables 5.2 and 5.3 as guidelines, draw up a checklist that Mpho's educator could use to evaluate the social and physical ecology of the classroom.

Table 5.2 A description of the physical ecology in a classroom

Physical variable	Research findings
Space for activities	<ul style="list-style-type: none"> • Well-defined space for activities may lead to smaller groupings of learners and greater engagement with materials (Pollowy 1974). • Size of space for activities may affect learners' participation. When density increases by adding additional learners to a fixed amount of space, learners are more likely to maintain their distance from peers and become more aggressive (Carta et al. 1988).
Number of activity materials and toys	<ul style="list-style-type: none"> • When the number and range of activities are limited, more disruption and conflict among learners occurs (Carta et al. 1988). • An increase in the availability of materials may lead to learners being more engaged with materials and less engaged with peers (Chandler et al. 1992).
Types of play materials and nature of the activity	<ul style="list-style-type: none"> • Generally learners tend to be involved in <ul style="list-style-type: none"> – solitary play when materials such as blocks, puzzles, play dough, clay and books are available (Quilitch & Risley 1973) – parallel play when sand, water toys and crayons are available – social play when dolls, housekeeping and dress-up materials are available. • Research also suggests that that when educators organise activities around a theme, typically developing learners will engage in more complex levels of play (Bagley & Klass 1998). • Generally more social interaction is observed among peers in activities that have a relatively high structure (e.g. doctor, shop) compared to activities with a low structure (e.g. waterplay, painting).
Class schedules	<ul style="list-style-type: none"> • Schedules specify the order and amount of time devoted to routines and activities per day. They provide the classroom with a degree of predictability that assists some learners with impairments to make transitions between activities more independently (Sainato 1990). • Sequencing of scheduled activities indicates that the activity level of learners in one activity will influence their level of physical activity in the next one (Krantz & Risley 1977).
Ratio of learners to educators	<ul style="list-style-type: none"> • For preschool programmes a ratio of not more than 16 three-year-olds per two adults and no more than 20 four-year-olds per two adults is recommended (Odom & Bailey 2001). • If there are learners with impairments who require instructional assistance, an even lower ratio might be needed. • Lower ratios of learners to educators resulted in children spending less time in social interaction with peers (Hauser-Cram et al. 1993).
Ratio of learners with and without impairments	<ul style="list-style-type: none"> • There has been little systematic research on the effects of this ratio. Hauser-Cram et al. (1993) found a positive relationship between the degree of inclusion of learners with impairments and the degree of social engagement with typically developing peers.
Accessibility of space and materials	<ul style="list-style-type: none"> • Accessibility is a phenomenon that varies according to the needs of each individual child. Reasonable accommodations need to be made to ensure that facilities are available and accessible to learners with a range of impairments, including those with physical and/or sensory impairments.

Source: Based on Odom & Bailey 2001

Table 5.3 Features that impact on the social ecology of a classroom

Social variable	Research findings
Characteristics of the peer group	<ul style="list-style-type: none"> • The logical way to group children is by chronological age as this has the advantage of normalisation, but it means that peers may at times be engaged in activities that may be too advanced for learners with impairments. Matching learners on the basis of developmental age is another option. • Findings suggest that developmental age and chronological age of peers are salient variables in inclusive classrooms but highlight that more research needs to be conducted (Odom & Bailey 2001).
Social interaction among peers	<ul style="list-style-type: none"> • Interaction between learners with impairments and their typically developing peers has been studied extensively. The primary rationale for inclusive preschool programmes is that they will provide an environment in which positive, playful and developmentally important interactions will occur with socially competent peers (Bricker 1978; Guralnick 1990). • Mixed evidence exists about the degree to which learners with impairments are integrated into preschool settings. • Inclusion in play activities and programmes with typically developing children seems to directly affect the social and communication behaviour of the children in the environments. • Studies of children with impairments seem to show/indicate that they engage in more interaction with peers when in inclusive environments (Erwin 1993; Hauser-Cram et al. 1993), although there have been some exceptions (Hundert et al. 1993). • Without any prompting from educators, typically developing learners are able to adjust their communication to equate with the level/method that learners with impairments use at that point (Guralnick & Paul-Brown 1977).
Educator interaction	<ul style="list-style-type: none"> • Educators tend to interact more frequently, facilitate more cognitive play, supply more support for and pay more attention to learners with impairments in an inclusive setting (Brown et al. 1999; File 1994; Quay 1993). • An exception to these research findings includes a study by Kontos et al. (1998) who found that educators in inclusive settings are more likely to ignore learners with impairments.
Educator beliefs	<ul style="list-style-type: none"> • Educator beliefs in relation to inclusion affect the nature of the learning environment and for this reason can be regarded as a feature of social ecology. Generally, early childhood development educators are positive towards inclusion. They seem to feel more positively towards the inclusion of learners with mild impairments (Buisse et al. 1996). • When asked, educators identified a number of benefits of inclusion for learners with impairments (Buisse et al. 1996) as well as typically developing learners (Marchant 1995).
Professional collaboration	<ul style="list-style-type: none"> • McCormick et al. (1998) found that consistent interaction between educators was related to learners' engagement in the inclusive environment. Such collaboration between professionals is based on consistent communication, a shared philosophy about education and inclusion, and a shared responsibility for the learners with impairments in the context. • Peck et al. (1993) found that the primary factor associated with discontinuation of inclusion was the poor relationships that developed between adults in the programme. Professional relationships have a positive or negative influence on the social ecology of the early childhood development centre that undoubtedly affects the child's learning environment.

Source: Based on Odom & Bailey 2001

5.6 LEARNING THROUGH COMMUNICATION

That young children communicate is much more important than how they communicate (Centre for Augmentative and Alternative Communication 2000).

One of the basic skills required in learning is the ability to interact with peers and adults. Although children do learn from observation, their own initiations and exploration in interaction with others are vital in optimising their potential. Through actively participating in their environment they can make mistakes, receive feedback (of varying kinds) and correct themselves in order to continue with the process.

Language and communication skills thus form the basis of the process of learning. Without the ability to understand language and express messages, children become isolated and unable to learn from environmental exposures. Communication, however, does not only happen through speech – it manifests through facial expressions, body language and other non-verbal strategies (e.g. drawing). These expressive modes of communication form the backbone of the young child's creative expression and should be encouraged.

Children who are learning through a second language (and are thus not fluent in the language of learning and teaching in the classroom) can, for example, be accommodated by allowing them to use their home language to ensure that they are included from the beginning in order to facilitate social inclusion and participation. Chapter 8 provides more detail on second-language learning and instruction within the classroom. These expressions in the home language can then be used in a positive way to encourage interest in the foreign or home language of the child. The result would be to use the diversity of the languages in the class as a resource rather than a “difficulty”. Diversity breeds strength in all senses of the word: if the child cannot communicate in the language of learning and teaching, access to any other language will do as a starting point. Similarly, if a child cannot talk, he needs access to the use of gestures, communication boards or other communication systems (e.g. augmentative and alternative communication aids – see Chapter 9) to ensure that he is able to participate in the learning experience.

5.7 PRINCIPLES OF EARLY LEARNING

In the next section, we will explore some of the underlying principles of early childhood learning.

5.7.1 *Relaxed modes of learning: play as the foundation for learning*

Perhaps one of the most important early learning principles relates to the acceptance that children learn through “relaxed modes of cognition” (Miller 2000: 14). This means that children learn alongside adults and peers through watching, playing and slowly doing, rather than through the “fast route” of direct teaching. In fact, purposeful direct instruction can impact most negatively on children's disposition to learn (Klein 2003: 76). In the early childhood education context, this implies that learners will learn from educators who set the example. This means that the educator must take an active part in the activities of the classroom and model the skills and activities that are being acquired by the learners.

5.7.2 *Active participation as a prerequisite for learning*

Children need to be interested enough in the activity to become engaged in it. This engagement will facilitate the mastering of skills in the process. A child that is not able to engage and get involved has great difficulties participating in the learning process. Active participation (through action and communication) facilitates learning. An example would be a learner with cerebral palsy who is in a wheelchair and also unable to talk. Without necessary adaptations this learner would find it difficult to become part of the activity and therefore would have difficulty in participating in the learning process. A picture board with relevant line drawings of the activity could be given to the learner and by pointing to the correct picture he would then also be able to participate. A peer who is seated beside the learner could then speak the message.

5.7.3 *Developing positive attitudes and dispositions towards learning*

The early years are most important to facilitate a child's eagerness to explore and learn. Children cannot be taught everything there is to know,

therefore we need to instil in them the basic need to want to find out for themselves, to facilitate their own problem solving in coping with life issues. Early childhood education should focus on different ways in which the child's interest in learning can be enhanced. This becomes possible by acknowledging and understanding where the children are at in order to use this knowledge to encourage them to explore further. Concerns about setting time schedules for teaching skills have been raised (Drummond 1997: 7). These concerns focus on the principle that "sooner is not necessarily better". In fact, focusing on the end result (outcome) can distract educators from the process – which is where much of the learning takes place. It is important to remember that of the two, learning is more important!

5.7.4 Building foundations for learning and literacy by focusing on real-life contexts

The importance of a bio-ecological approach towards early childhood education is once again emphasised. The aim of early years is not "to teach the child early literacy skills" by getting them to produce "write and tell" activities. Rather, educators should "seize the opportunity to protect the route into literacy" in such a way that it remains playful, explorative and enjoyable (Miller 2000: 14). For many children this process has already begun in the home. This does not imply a sloppy, *laissez-faire* approach to the curriculum or an excuse to do no planning. This is an approach in which children are encouraged to take risks, make choices and become independent learners within the context of sensitive and appropriate adult support. A practical example would be an educator who encourages parents of learners to join the local library and provides suggestions on types of books that parents could borrow from the library in order to facilitate a positive experience to literacy.

5.7.5 Collaboration between children and educators and parents is at the heart of early childhood education

A bio-ecological approach towards early child-

hood education aims to ensure the use of home-based knowledge and experiences as a basis from which the educator can facilitate the extension of the children's knowledge and skills. For parents to be able to support the educator's approach in the classroom, it is essential that they are able to understand and reinforce the skills and their applications within the broader environmental context. As mentioned earlier, consistency of interaction patterns and language use throughout the different contexts is most important in order to facilitate a harmonious learning environment for the child.

ACTIVITY

As Mpho's educator, what instruction principles do you think are necessary in your classroom to enhance the literacy experience of the learners?

5.8 WHAT IS A RESPECTFUL EARLY CHILDHOOD PRACTITIONER OR EDUCATOR?

Nutbrown (2001) describes the importance of "respect" in education, but with specific reference to early childhood practice. She states that "respect is not about being nice, it is about being clear, honest, courteous, diligent and consistent" (Nutbrown 2001: 75). Respectfulness can be expressed through what is done, what is said, how relationships are conducted and the attitudes with which educators meet the daily challenges they face at work. Those who observe children reflect on what they see and convey what they see to those in the child's environment. These people in the environment will know how to adapt and change activities in the environment to foster growth. Table 5.4 describes the approach of a respectful educator.

Table 5.4 meaningfully consolidates issues discussed in this chapter by pointing out, once again, the importance of

- children as participants, thus placing great importance on experiences of the child and family
- building on existing learning by involving parents

Table 5.4 The approach of a respectful educator

Respectful approaches	Disrespectful approaches
Towards learners in general	
Children as participants in the learning experience	Children as recipients of knowledge
Building on existing learning	Disregarding prior knowledge
Focus on individual's learning needs	Curriculum with predetermined outcomes
Responsive to learners' needs and interests	Unresponsive to learners' needs and interests
Learners understand what is expected of them	Learners do not understand what is expected of them
Towards learners with impairments	
Inclusive attitude towards diversity and disability	Non-inclusive attitude towards diversity and disability
Teaching based on developmental needs	Teaching based according to chronological age and fixed outcomes
Each individual learner matters	The majority matter
Towards the physical ecology of the classroom	
Sufficient space and access to equipment	Insufficient space and access to equipment
Adequate accessibility to buildings and equipment for all learners	Inadequate accessibility to buildings and equipment for some learners
Appropriate ratio of educators to learners	Educator–learner ratio too high
Towards the social ecology of the classroom	
Educators aware of children's rights	Educators disregard issues relating to children's rights
Continued professional development for early childhood educators and other educators	Lack of continued professional development for early childhood educators and other educators
Acknowledgement of the role parents play in their child's education	Minimisation of the role parents play in their child's education

Source: Based on Nutbrown 2001: 76

- creating sensitivity towards the physical and social ecology of the classroom.

This table clarifies some of the basic principles of a bio-ecological approach to early childhood intervention and education.

5.9 CONCLUSION

This chapter discusses the underlying principles of a bio-ecological resource-based approach within an early childhood development context. A discussion of the characteristics of quality inclusive early childhood development programmes as well as relevant variables that should be considered when evaluating such programmes is provided. Some suggestions as to how educators may apply some of these principles within the practical context of early childhood education and intervention are included in order to encourage the appli-

cation of these principles within this environment.

Questions

1. Child abuse and neglect are most likely to occur in families under stress who reside in a high-risk neighbourhood. Using the knowledge you have acquired in this chapter as well as from Chapters 1, 2, 9 and 11, discuss the risk factors that may be present in these families and that may contribute towards abuse and neglect. Group the factors under the different systems (micro-, meso-, exo- and macrosystems) as described by Bronfenbrenner.
2. Using the case study as an example, discuss how the educator could promote collaboration between Mpho's mother and his educator to maximise Mpho's learning experience.

3. As an educator you have been asked to provide information to the parents of the children in Mpho's class about the principles of early childhood learning. Discuss the five principles you would regard as most important and give an example of a participatory learning opportunity that parents could use to reinforce what their child is learning at school.
4. Discuss some of the negative educator beliefs towards children who experience barriers to learning (like Mpho) that could negatively affect the child's functioning in the classroom.

Bibliography

- Bagley, D.M. & Klass, P.H. 1998. Comparison of the quality of preschoolers' play in housekeeping and thematic sociodramatic play centers. *Journal of Research in Childhood Education*, 12: 71–77.
- Bricker, D.D. 1978. A rationale for the interaction of handicapped and non-handicapped preschool children. In Guralnick, M.J. (Ed.), *Early intervention and the integration of handicapped and non-handicapped children*. Baltimore: University Park Press, 3–26.
- Bronfenbrenner, U. 1979. *The ecology of human development: experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Bronfenbrenner, U. & Morris, P.A. 1998. The ecology of developmental processes. In Lerner, R.M. (Ed.), *Handbook of child psychology: Volume 1: Theoretical models of human development*. New York: John Wiley & Sons, 993–1027.
- Brown, W.H., Odom, S.L., Li, S. & Zercher, C. 1999. Ecobehavioral assessment in inclusive early childhood programs: a portrait of preschool inclusion. *Journal of Special Education*, 33: 138–153.
- Bruder, M.B. 2001. Inclusion of infants and toddlers. In Guralnick M.J. (Ed.), *Early childhood inclusion: focus on change*. Baltimore: Paul H. Brookes, 203–228.
- Buysse, V., Wesley, P., Keyes, L. & Bailey, D.B. 1996. Assessing the comfort zone of child care educators in serving young children with disabilities. *Journal of Early Intervention*, 20: 189–203.
- Centre for Augmentative and Alternative Communication (CAAC). 2000. *Breaking the silence: a decade of commitment and achievement*. Commemorative brochure. Pretoria: University of Pretoria.
- Carta, J.J., Sainato, D.M. & Greenwood, C.R. 1988. Advances in ecological assessment of classroom instruction for young children with handicaps. In Odom, S.L. & Karnes, M.B. (Eds), *Early intervention for infants and children with handicaps: an empirical base*. Baltimore: Paul H. Brookes, 217–239.
- Chandler, L.K., Fowler, S.A. & Lubeck, R.C. 1992. An analysis of the effects of multiple setting events on the social behavior of preschool children with special needs. *Journal of Applied Behavior Analysis*, 25: 249–262.
- Department of Education. 2001. *Education White Paper 5: Early Childhood Education: meeting the challenge of early childhood development in South Africa*. Pretoria: Government Printer.
- Department of Education. 2001. *Education White Paper 6: Special Needs Education: building an inclusive education and training system*. Pretoria: Government Printer.
- Draper, L. & Duffy, B. 2001. Working with parents. In Pugh, G. (Ed.), *Contemporary issues in the early years: working collaboratively for children*. 3rd ed. London: Paul Chapman Publishing, 146–159.
- Drummond, M. 1997. An undesirable document. *Coordinate*, January: 7–8.
- Dunst, C. 2001. Participation of young children with disabilities in community learning activities. In Guralnick M.J. (Ed.), *Early childhood inclusion: focus on change*. Baltimore: Paul H. Brookes, 307–336.
- Erwin, E.J. 1993. Social participation of young children with visual impairment in specialized and integrated environments. *Journal of Visual Impairments and Blindness*, 8: 138–142.
- File, N. 1994. Children's play, educator-child interactions, and educator beliefs in integrated early childhood programs. *Early Childhood Research Quarterly*, 9: 223–240.
- Guralnick, M.J. 1990. Social competence and early intervention. *Journal of Early Interventions*, 14: 3–14.
- Guralnick, M.J. & Paul-Brown, D. 1977. The nature of verbal interactions among handicapped and non-handicapped preschool children. *Child Development*, 48: 254–260.
- Hauser-Cram, P., Bronson, M.B. & Upshur, C.C. 1993. The effects of the classroom environment on the social and mastery behavior of preschool children with disabilities. *Early Childhood Research Quarterly*, 8: 479–497.
- Hundert, J., Mahoney, B. & Hopkins, B. 1993. The relationship between the peer interaction of children with disabilities in inclusive preschools and resource and classroom educator behaviors. *Topics in Early Childhood Special Education*, 13: 328–343.
- Klein, P.S. 2003. A mediational approach to early intervention: Israel. In Odom, S.L., Hanson, M.J., Blackman, J.A., & Kaul, S. *Early intervention practices around the world*. Baltimore: Paul H. Brookes, 69–89.
- Integrated National Disability Strategy (INDS). 1997. *White Paper on Disability*. Office of the Deputy President T.M. Mbeki. Ndabeni, South Africa: Rustica Press.
- Kontos, S., Moore, D. & Giogetti, K. 1998. The ecology of inclusion. *Topics in Early Childhood Special Education*, 18: 38–48.
- Krantz, P. & Risley, T.R. 1977. Behavior ecology in the classroom. In O'Leary, K.D. & O'Leary, S. (Eds), *Classroom management: the successful use of behavior modification*. 2nd ed. New York: Pergamon, 349–366.
- Marchant, C. 1995. Educators' views of integrated preschools. *Journal of Early Intervention*, 19: 61–73.

- McCabe, J.R., Jenkins J.R., Mills, P.E., Dales, P.S., Cole, K.N. & Pepler, L. 1996. Effects of play group variables on language use by preschool children. *Journal of Early Intervention*, 20: 329–340.
- McCabe, J.R., Jenkins J.R., Mills, P.E., Dales, P.S. & Cole, K.N. 1999. Effects of group composition, material, and developmental level on play in preschool children with disabilities. *Journal of Early Intervention*, 21: 283–293.
- McCormick, L., Noonan, M.L. & Heck, R. 1998. Variables affecting engagement in inclusive preschool classrooms. *Journal of Early Intervention*, 21: 160–176.
- Meisels, S.J. & Shonkoff, J. P. 2001. Early childhood intervention: a continuing evolution. In Shonkoff, J.P. & Meisels, S.J. (Eds), *Handbook of early childhood intervention*, 2nd ed. Cambridge: Cambridge University Press, 3–34.
- Miller L. 2000. Play as a foundation for learning. In Drury, R., Miller, L. & Campbell, R. (Eds), *Looking at early years education and care*. London: David Fulton Publishers, 7–25.
- Nutbrown, C. 2001. Watching and learning: the tools of assessment. In Pugh, G. (Ed.), *Contemporary issues in the early years: working collaboratively for children*, 3rd ed. London: Paul Chapman Publishing, 66–77.
- O'Brien, M. & Bi, X. 1995. Language learning in context: educator and toddler speech in three classroom play areas. *Topics in Early Childhood Special Education*, 15: 148–163.
- Odom, S.L. & Bailey, D. 2001. Inclusive preschool programs: classroom ecology and child outcomes. In Guralnick M.J. (Ed.), *Early childhood inclusion: focus on change*. Baltimore: Paul H. Brookes, 253–276.
- Peck, C.A., Furman, G.C. & Helmstetter, E. 1993. Integrated early childhood programs: research on implementation of change in organizational contexts. In Peck, C.A., Odom, S.L. & Bricker, D.D. (Eds), *Integrating your children with disabilities into community programs: ecological perspectives on research and implementation*. Baltimore: Paul H. Brookes, 187–205.
- Pollowy, A.M. 1974. The child in the physical environment: a design problem. In Coates, G. (Ed.), *Alternative learning environments*. Stroudsburg, PA: Downden, Hutchinson & Ross, 370–382.
- Quay, L.C. 1993. Social competence in non-handicapped, low interacting, and five handicapped groups of preschoolers. *Early Education and Development*, 4: 89–98.
- Quilitch, H.R. & Risley, T.R. 1973. The effects of play materials on social play. *Journal of Applied Behavior Analysis*, 6: 575–578.
- Republic of South Africa. 1996. Constitution of the Republic of South Africa, Act no. 108 of 1996. Pretoria: Government Printer.
- Sainato, D.M. 1990. Classroom transitions: organizing environments to promote independent performance in preschool children with disabilities. *Education and Treatment of Children*, 13: 288–297.

ADDRESSING LIFE SKILLS PROBLEMS

6

IRENE STRYDOM

Learning outcomes

After reading this chapter you should be able to

- ▶ describe in your own words what life skills are and why they are emphasised as a developmental task of the learner
- ▶ describe in your own words what the core themes of the Life Orientation Learning Area are and how life skills are part of this learning area
- ▶ explain the different kinds of life skills problems and what kinds of barriers learners may experience in acquiring specific life skills
- ▶ explain the core outcomes-based learning principles of a life skills model which should always be taken into account
- ▶ work out a life skills session to address a particular area of growth in learners.

Key terms

life skills ♦ *life orientation* ♦ *barriers to life skills acquisition* ♦ *addressing life skills problems* ♦ *life skills model* ♦ *intrapersonal skills* ♦ *interpersonal skills*

6.1 INTRODUCTION

There are a great number of interpretations and definitions of the concept “life skills”. Different authors define the concept in different ways and it is clear that life skills have different meanings for different people. For the squatter, the ability to build a secure corrugated iron house can be seen as a life skill. For the blind person it may be the safe crossing of a busy street; for the paraplegic, learning to drive a motor car again after a devastating car accident.

ACTIVITY

The people described in these real-life situations have to master certain skills to survive the obstacles of everyday living, and to adapt to these daily changes and challenges.

How would you define life skills? In your description, consider the different aspects mentioned in the preceding paragraph.

In this chapter, reference will be made to the different obstacles the young learner may experience in acquiring the necessary life skills to survive life’s challenges. A proposed life skills model will be discussed briefly, and special reference will be made to very particular skills the learner has to master in order to survive the many challenges the home, school and broader community environment pose.

The life skills to be mastered by learners and mentioned in this chapter form part of one of the eight learning areas as stated in the Revised National Curriculum, namely Life Orientation. As a learning area, Life Orientation aims to guide and prepare learners for life and its possibilities (Department of Education 2002: 4). In the next section, reference will be made to the “life tools” learners need to master and successfully apply to tackle life’s possibilities.

6.2 LIFE SKILLS AS COPING TOOLS

There is no question about the necessity of acquiring life skills to cope with the demands of modern life. The perfect set-up would be for learners to be exposed to these skills from a very early age in their homes. Parents are the primary educators and are in essence responsible for equipping their children with the necessary personal, social and thinking tools to grow as unique persons and to solve problems successfully in different life situations. The reality, however, is that because of many personal, educational, financial and socio-economic realities, many parents themselves have not mastered important life skills and are not able to recognise particular favourable set-ups to expose their children to a learning opportunity. We are not talking about formal educational set-ups, but about everyday realities and situations life throws at us to teach us more about ourselves and life.

Life skills can indeed be seen as coping tools to survive everyday emotional, social and cognitive onslaughts. To “cope” means to deal effectively or successfully with a challenge (Hutchinson 1992: 180). A “tool” can be defined as an implement that gives the user an advantage over a person who does not have such a tool (Hutchinson 1992: 828). Life skills can thus literally be described as tools the learner should be equipped with to successfully have insight into and manage life tasks, and that this equipment will favour the learner who has mastered these skills. The Life Orientation Learning Area also refers to “equipping learners” and states that the “Life Orientation Learning Area equips learners for meaningful and successful living in a rapidly changing and transforming society” (Department of Education 2002: 4).

ACTIVITY

Is it really necessary deliberately to expose learners to life skills programmes? Is it not possible for them to acquire these skills by going about their daily routines normally? What do you think?

Surely all learners will be able to learn more about themselves and their environments – even if they are left “alone” to explore new internal and external horizons? As Vygotsky (Kinginger 2002) has taught us, learners will indeed be able to learn a lot on their own, but will not be able to break through their own personal “knowledge ceilings” without the guidance and help of a mentor. Vygotsky (Kinginger 2002: 240) calls this zone in which learners are helped to master new richer insights the “zone of proximal development”. Here they are enabled to break through their own barriers to a more advanced level of themselves. It seems as if mentoring can be seen as one of the ways in which learning in the zone of proximal development can be successfully facilitated (Evans & Ave 2000). Mentoring is becoming an increasingly popular strategy for addressing the needs of young learners and, in general, the benefits for learners can be seen in the acquiring of specific life skills rather than being a preventative panacea for all social problems (Evans & Ave 2000: 41). It remains a basic need of learners not merely to be left alone to explore their inner and outer worlds, but to be helped through the zone of proximal development to get to the place of self-realisation in all the aspects of their being human. Other researchers (Abrahams et al. 2002: 2) also refer to the needs learners have during their journey of discovery and emphasise their need to be acknowledged, guided and nurtured. The unmistakable role of the mentor, who is emotionally available, to guide learners through their growing and learning processes seems to be evident. The importance of the skilled mentor and facilitator will be discussed further in Section 6.4.2.1.

So, the components of implementing a life skills programme are: the learner, a skilled mentor or facilitator and a programme. Is it really that simple? The literature tells another story. There are numerous realities and circumstances which

complicate the implementation of a life skills programme. One cannot just compile a life skills programme, get a teacher and a bunch of learners and there you go: a successful outcome! In the next section, a few aspects of these complexities that can inhibit the successful development and implementation of a life skills programme will be deliberated.

It is also essential, at this stage, to mention that a life skills programme is part of the compulsory Life Orientation Learning Area and provision should be made for it on the school timetable. Schools are compelled to provide ample opportunity for learners to be exposed to specific life orientation periods. The ideal situation is actually to include and incorporate life skills themes and principles in all the other learning areas too. The five learning outcomes for the Life Orientation Learning Area, which can also be addressed in the other learning areas, are as follows (Department of Education 2002: 7):

- **Learning Outcome 1: Health Promotion**

The learner will be able to make informed decisions regarding personal, community and environmental health.

- **Learning Outcome 2: Social Development**

The learner will be able to demonstrate an understanding of and commitment to constitutional rights and responsibilities, and to show an understanding of diverse cultures and religions.

- **Learning Outcome 3: Personal Development**

The learner will be able to use acquired life skills to achieve and extend personal potential to respond effectively to challenges in his or her world.

- **Learning Outcome 4: Physical Development and Movement**

The learner will be able to demonstrate an understanding of, and participate in, activities that promote movement and physical development.

- **Learning Outcome 5: Orientation to the World of Work**

The learner will be able to make informed decisions about further study and career choices.

6.3 LIFE SKILLS PROBLEMS

In this section, there will be a brief discussion on reasons why learners may have problems acquiring life skills. This will be a general discussion of particular difficulties some learners may experience in mastering skills. When one thinks about life skills problems, it seems that there are numerous reasons why learners do not acquire a wide range of competencies which will enable them to better understand and manage themselves and the different spaces they inhabit. The different reasons will be dealt with under separate headings, but there should be an understanding that even so, one cannot really separate these intertwined causes.

The premise from which this discussion will be led assumes that the human being consists of various aspects or facets, and that developmental or environmental problems may cause an individual not to reach the potential, with regard to a particular aspect, that he was destined to reach. The six aspects of human existence which will be highlighted are the physical, emotional, social, cognitive, motivational and moral aspects. These aspects correlate with the themes highlighted in the Life Orientation Learning Area, namely physical, personal and social development, and health and future development. In a sense, one can convert each of these into intelligences of being human.

In the 1980s, Gardner (1983) coined the concept of multiple intelligences and emphasised seven intelligences as competencies human beings are capable of, namely linguistic intelligence (the extraordinary ability to use language to express and appreciate complex meanings); logical-mathematical intelligence (the wonderful ability to quantify and consider complex mathematical propositions); spatial intelligence (the capacity to perceive external and internal imagery in a three-dimensional set-up); bodily-kinesthetic intelligence (the ability to fine-tune physical skills); musical intelligence (a rare sensitivity to melody, tone and rhythm); interpersonal intelligence (the ability to understand and interact effectively with others) and intrapersonal skills (the ability to understand and manage the self successfully).

In our model, one can define each of the six aspects of being human mentioned earlier as an *intelligence*. “Intelligence” can be defined as the power of learning, understanding and reasoning (*Oxford Advanced Learner’s Dictionary of Current English* 1994: 652). The concept has an element of survival in it, because the individual who has the ability to learn, understand and create meaning, will probably cope with living demands, stressors and traumas. The core ingredient of intelligence is probably the ability to adapt and to change. In the next section, each of the aspects of being human will be described as an aspect of human intelligence and will be followed by a discussion of problems learners may have in reaching a specific intelligence potential.

6.3.1 Problems in acquiring physical skills – physical intelligence (PQ)

Physical intelligence correlates with Gardner’s (1983) bodily-kinesthetic intelligence. Physical intelligence can be defined as the ability to use the body as an instrument to manage everyday physical demands creatively, and to apply the body in unique ways to manipulate it and objects in different spatial set-ups. It implies that every learner has ample knowledge of the body, what it looks like, what it consists of, how it works and how it should be nurtured. The young learner, from a very early age, should realise that we all get one body to inhabit on our journey through life and that this body should be cared for. The learner should realise that the body is a living being and will thrive only in a nurturing environment. If the physical survival of the body is under constant threat, there will be no possibility of healthy growth, and in fact the very existence of that person will be threatened. If the body is exposed to dangerous environments, most of the person’s energy will be used to stay alive and survive, which will negatively impact on the development of the other identities (e.g. the emotional, social and cognitive modalities). It is also imperative to realise the uniqueness of each body and that it is equipped with wonderful body parts which will keep on working if they are cared for. The tragedy, however, is that if a part of the body is lost (e.g. a limb, an eye), it can rarely be replaced.

So what are the important physical skills learners should acquire from a very young age? Obviously, different physical milestones should be reached by learners at different stages of their lives, and long lists of these can be mentioned. We will refer here to only the most significant and general physical skills learners should master during the developmental years. They can be distinguished as the following:

- The ability to gain knowledge of the physical self with regard to basic physical functioning, body parts and the functions of different organs.
- Realisation that each body is different and unique and that this may influence physical performance – even other abled bodies need to see their uniqueness and ability to use the body effectively.
- Understanding that the body needs healthy nurturing which entails instilling healthy and regular eating habits (Murray 2000: 44), and regularly engaging in a safe exercise routine in the fresh air. Good nourishment of the body also involves the nourishment of the mind and the spirit of the individual learner.
- Understanding the concept of illness and contracting diseases. Learners should be exposed, on a daily basis, to teachings on maintaining a healthy body and the handling of diseases. Learners should especially be exposed to a formal training programme on sexuality and HIV/Aids issues.
- Seizing opportunities to participate in physical challenges and developing very specific activity skills (Thompson 2000: 33), like taking part in group activities in nature to learn more about the self, others and nature. The focus here is on handling physical challenges.
- Mastering very specific gross motor skills to enable learners to effectively manipulate their bodies and big instruments and tools which will help to develop mechanical and technical skills.
- Mastering fine motor skills to enable learners to develop drawing, writing, painting, fine motor and technical skills.

There are many reasons why learners do not develop these physical skills, but only a few of

these barriers to optimal physical growth will be summarised here:

- Socio-economic realities like poverty, malnutrition, homelessness and a bleak future make it difficult for parents to give their children the nourishment they need to grow physically healthy, able bodies.
- Many families and societies fail to recognise the basic needs of learners to physical security and care taking. Nelson and Allison (2000: 28) refer to this basic need by emphasising the importance of “food before thought”.
- Parents sometimes do not have the knowledge to grasp the importance of healthy nutrition and allow children to engage in reckless eating habits.
- Some learners are treated so harshly from a very early age and are exposed to severe physical punishment and sexual abuse that they may get the impression that they and their bodies are not really important or valuable, which may result in dangerous and reckless physical behaviour.
- Schools do not always have the time or means to look after the nourishment of learners and sometimes neglect the implementation of a healthy feeding and physical training programme.
- In some cases, schools do not have the capacity to expose learners to programmes on sexuality, physical well-being and nourishment.
- Some learners underestimate the value of their bodies and engage in risky sexual activities or fall into the trap of following a specific crowd who may use drugs, alcohol or other substances.
- Tragic circumstances of learners may drive them to bad coping behaviours during which they try to escape from themselves or their environments by harming their bodies.

The need to introduce physical intelligence components in schools has led to the development of the field of exercise psychology (Van Raalte & Brewer 2002: 5) which proposes the inclusion of sport and physical health as education themes in schools’ life skills programmes. For these

researchers there is no question about the importance of sport and exercise education as part of a life skills programme.

6.3.2 Problems in acquiring emotional skills – emotional intelligence (EQ/EI)

There is no other concept in education, and particularly in psychology, that is used so often but is so difficult to define as the term “emotion”. Definitions vary from vague descriptions to complex explanations. Collins (1997: 35), for instance, proposes a very simple definition of emotion and is of the opinion that the foundation for almost all the other feelings lie in the basic four emotions which are: to be *mad*, *sad*, *scared* or *glad*. Without mentioning all the different definitions, it is safe to acknowledge the working definition of Oatley and Jenkins (1996: 96) which describes “emotion” as follows: An emotion is usually caused when a person evaluates an event of importance and an aim, which is considered a priority, is formulated. The core of an emotion is the readiness to engage in an activity and the planning of action. The feeling that action is necessary may interrupt other actions and cognitive processes or may compete with those. An emotion can thus be seen as a unique state which goes hand in hand with bodily changes, bodily expressions and actions. One can see that there are many aspects of being human integrated into the experiencing of an emotion which, indeed, is a whole body experience. In the next paragraph, the big brother of “emotion”, namely “emotional intelligence”, will be dealt with briefly.

Long before Goleman (1996) popularised the concept of “emotional intelligence”, Salovey and Mayer (1990), and Bar-On (1992) had done significant research on this phenomenon. The most recent definition of emotional intelligence by Salovey et al. (2002: 10) may be summarised as follows:

Emotional intelligence

- represents the ability to perceive, appraise and express emotion accurately and adaptively
- is the ability to understand emotion and emotional knowledge
- is the ability to access and/or generate feelings

when they facilitate cognitive activities and adaptive action

- is the ability to regulate emotions in oneself and others.

Emotional intelligence can thus be described as the ability to process emotion-laden information competently and to use it to guide cognitive activities, like problem solving, and to focus energy on required behaviours.

Considering the high levels of domestic and school violence, it is apparent that many learners have not adequately acquired emotional intelligence skills to manage stressful personal, scholastic and societal demands. Many learners have little experience in dealing with their own emotions and quickly see emotional reactions from others as a threat. Research done by Ciarrochi et al. (2002: 173) reveals that learners who are low in emotional awareness and who are poor at identifying, describing and managing their emotions are the least likely to seek help from people around them, and have the highest intention of refusing help from everyone. So what we have here is that many neglected, hurt, confused and angry learners may be alone, fighting their personal battles until they are overwhelmed by them and the only way out of this tight corner is to revert to aggressive and violent acts. A low awareness of the importance of emotionality in our lives can thus indeed be described as one of the most important barriers to acquiring apt emotional intelligence skills.

Other problems learners may experience that will inhibit their mastering of emotional intelligence skills are as follows:

- Children are supposed to be cared for by emotionally available (Collins 1997: 7) adults who should be present to spend time with them and expose them to a safe and emotionally sound environment. In many cases adults are the very ones who abuse and neglect children, which from a very early age creates the idea that people cannot be trusted, which in turn has a devastating effect on their further emotional development.
- Learners have the need to belong (Elias 2001: 20). If this need is not satisfied at home, in

school and within the society, learners may develop the idea that they have no security and acceptance base to fall back on, which may create feelings of desolation.

- Many learners grow up in a non-caring, non-sharing environment which creates the idea that not to care and not to share is acceptable (Lantieri 2001: 33).
- Learners have a need to be appreciated (Elias 2001: 21) and to be acknowledged which instils in them the feeling of being important and being “good enough”.
- Learners also have to be educated in the science of emotions, which implicates an appreciation of the emotional aspect of being human, and that it is normal to have a wide range of feelings. If this normal aspect of being human is denied (as children are often exposed to emotionally abusive situations when they are ordered to “stop crying” or told “you should not feel like that” or asked “why are you so emotional?”), learners quickly learn not to show their feelings any more, which in turn can create great emotional problems. An emotional numbness may result from learners not being educated in emotional intelligence skills. This numbness may paralyse them briefly which prevents them from taking positive action to address their hurt. Thus the unavailability of an empathetic adult may eventually erupt into socially unacceptable behaviours.

The emotional intelligence movement has brought to the fore the importance of developing each learner’s emotional capacities and, as mentioned earlier, the knowledge of emotions will help learners to understand themselves and others better. A learner who qualifies as being emotionally intelligent will be less impulsive, will develop an inner self-control, will be able to care and share, and will, in the end, use the energy emotions create in a positive way to plan self-improvement activities.

6.3.3 Problems in acquiring social skills – social intelligence (SQ)

When a baby is born, he is immediately part of some kind of social set-up, hopefully one of

warmth, caring and emotional nurturing. The dependence of the helpless little baby on the social beings in his environment to look after him is apparent as the baby cannot do much to feed or care for himself. The baby needs the constant support of other human beings and is entirely dependent on the goodwill of others. As we grow older, we become more independent of others, and gradually gain more skills which enable us to engage in activities we ourselves plan. But we will always have human beings around us. Perry (2002: 36) is of the opinion that we will never become fully independent of others and that we rather become *interdependent*. This means that we will continually be part of give-and-take relationships, building a healthy interdependence with family, community and culture.

Yet it seems as if the given variables, namely being a social creature in a social structure, are not enough to guarantee personal happiness and success. There are clear indications that many individual learners have great problems in adapting to social demands, and struggle to competently manage themselves in set-ups where people are part of the equation. The effect of this on the development of the learner is devastating. It was found that poor social skills in people are thought to make them vulnerable to psychosocial problems pursuant to the experience of stressful life events (Segrin & Flora 2000: 489). But what are these social skills we refer to?

Ganzel (2001: 56) has a very short, but striking definition of social skills by calling them “soft skills” or “people skills”, which indicates an ability to successfully communicate and negotiate with others, the ability to reveal personal needs and feelings, as well as to give constructive feedback to others. Although it is accepted that the home environment will equip learners with these basic social skills, it is generally known that many parents lack the knowledge and inclination to empower their offspring to survive in the social jungle outside the home. Murray (2001: 7) feels strongly about helping learners not only to survive social set-ups, but really to prepare them for adult life where they will have no other choice than to aptly handle the social demands in training and working environments. For Murray (2001: 7) the concept of “social education” is all about

enabling learners to cope with the world as it is, and also about helping learners to change their world. This they will be able to do if they know as much as possible about themselves and others as interacting beings.

What are the social skills learners need to assert themselves in demanding social set-ups? A summary of the work of researchers such as Gut (2000: 46), Baker et al. (2000: 42), Strop (2000: 16), and Frey et al. (2000: 102) highlights the following social skills as being of great value to learners:

- Desiring and demonstrating basic social skills such as the ability to respond to the needs of others, and the ability to maintain healthy relationships with others, all of which are based on the following intrapersonal skills: self-awareness, self-acceptance and the ability to regulate thoughts, emotions and behaviours
- Acquiring three social-emotional competencies, namely empathy, social problem solving and anger management skills
- Taking up responsibilities which comprise the following elements: learning the importance of accountability, commitment, dependability, reliability and trustworthiness (responsibility is called the fourth “R” after reading, ’riting and ’rithmetic)
- Developing leadership skills such as the ability to plan, manage, organise, implement and evaluate
- Developing “following skills” which assumes that learners will learn sometimes to take a back seat and allow others to implement their plans
- Acquiring conversational skills such as beginning and ending a conversation
- Developing listening skills such as active listening and questioning
- Realising the importance of perspective-taking skills such as recognising others’ feelings, showing understanding of feelings, expressing concern for others and understanding teasing
- Developing consequence-predicting skills such as avoiding trouble and accepting consequences

These skills are the core social skills learners should master, but does this really happen? There are many reasons why not, and only a few of these barriers to acquiring basic social skills will be discussed below. This discussion is based on the findings of Mayer (2001: 414), Morris (2002: 66), Lutzner and Day-Vines (2001: 158), Salzman and D'Andrea (2001: 341), and Garner and Estep (2001: 29):

- Some parents engage in poor emotional socialisation practices and expose their children to insufficient social learning opportunities.
- Some teachers are unaware of their contribution to learners' developing antisocial behaviour and even cause learners to stop attending school. The implementation of harsh punitive methods of control, not providing clear rules, exposing learners to constant failure experiences, not using appropriate behaviour management procedures, not implementing a social education programme and not valuing cultural differences are some of the negative influences of teachers.
- Some adults and educators do not understand that certain learners may have non-verbal learning impairments which hinder the acquisition of non-verbal skills such as understanding and interpreting other learners' body language and facial expressions.
- Many schools have no programme in place to identify, support and guide at-risk learners who demonstrate social skills deficits.
- Schools fail to include a prejudice prevention programme as part of the social education curriculum. Such a programme can enhance the development of intercultural social development and cooperative skills.
- Many schools fail to see the wonderful opportunities of experiential adventure activities like playing sports, games and planned activities in the open air. If learners are outside and they are thrown together, they are exposed to experiential social skills activities which help develop an atmosphere of acceptance, where learners are willing to take risks, share, discuss and problem solve together.

No learner is an island. It is up to adults to guide learners on an inner journey to better understand themselves as social-emotional beings, which will give them the courage to venture into the social jungle out there.

6.3.4 Problems in acquiring thinking skills (IQ)

The thinking or cognitive dimension of being human is perhaps the most difficult part to describe as it consists of so many intrapsychic processes and the development thereof is influenced by so many external factors. Briefly, it can be described as the part of the human involved in the internal, mental processes with a very distinct flavour of uniqueness. Aspects which can be mentioned here are factors like attention, concept formation, information processing and memory (Reber 1995). Every individual has a characteristic style or manner in which thinking tasks are approached or handled. The three most common thinking or cognitive styles, namely a levelling-sharpening style, a field dependence-field independence style and a reflectivity-impulsivity style (Reber 1995), will be discussed briefly:

- The learner who makes use of a **levelling** thinking style has the tendency to smooth over the unusual, irregular or novel aspects of a situation, an event, a story or a drawing so that details are glossed over, and what ultimately remains in memory is a more homogeneous, less incongruous version than that which was objectively presented. The reverse tendency is **sharpening**, in which details are overemphasised and accentuated.
- **Field dependence** represents a continuum along which an individual may be placed to characterise the extent to which the learner's perceptions are dependent on, or independent from, cues in the environment.
- In the solving of problems, some learners tend to be rather **impulsive** and react quickly on the basis of the first thing that comes to mind while others are more **reflective**, more systematic and tend to think the problem through before acting.

Can you imagine what the experience of a learner who has a levelling-field independent-impulsive thinking style and is taught by a teacher who has a sharpening-field dependent-reflective thinking style will be? What do you think?

Indeed, the learner will quickly see relations in solving a problem, will want to reveal his ideas immediately, and will not pay too much attention to environmental issues. The teacher, on the other hand, will evaluate the learner as being impulsive and will send him back to reconsider his solution to the problem more carefully. By the time the teacher is ready to listen to the learner's inputs, the learner will have lost interest.

So one of the first lessons we as human beings have to learn is that people are unique, that they learn and think in different ways and that their unique solutions, perceptions and answers should not be seen as threats, but rather as gems of new insight and opportunity.

Only a few of the important thinking skills learners have to master will be discussed here. According to Rodgers (2002: 842), O'Hearn and Gatz ((2002: 281), Wilterding et al. (2000: 27), Hay et al. (2000: 101), Elder and Paul (2002: 34), Reber (1995) and MacKnight (2001: 17), the following core thinking skills should be developed:

- **Critical thinking skills.** These skills are essential to the process of filtering, assimilating and finding new meaning in the torrents of information faced daily. One example of how these skills can be developed is to assist learners to become critical readers and effective, critical communicators.
 - **Reflective thinking skills.** Reflection is a meaning-making process that moves a learner from one experience into the next with deeper understanding of its relationships with and connections to other experiences and ideas. Reflective thinking makes the continuity of learning possible and ensures the progress of
- the individual and, ultimately, society. It is a systematic, rigorous, disciplined way of thinking, with its roots in scientific inquiry. Reflection needs to happen in a community with others and requires attitudes that value the personal and intellectual growth of the self and others.
- **Problem-solving skills.** Learners have to understand the inevitability of problems arising in their lives. A problem arises when there is a situation in which some of the attendant components are known and additional components have to be determined. Learners are helped to identify the initial unknown characteristics which may lead to the solution of the problem.
 - **Conflict resolution skills.** Although this may be seen as an important interpersonal skill, it is included here because the handling of a conflict has many close links with the application of intricate, advanced cognitive processes. A conflict can be described as any situation where there are mutually antagonistic events, motives, purposes, behaviours and impulses. Learners should understand the dynamics of a conflict situation and how it originates, and that these challenges require personal and interpersonal insight and the application of high-order thinking manoeuvres.
- This then is the ideal: learners should master these thinking skills as this will equip them to understand real-life situations and dilemmas better. Hopefully they will be able to analyse the problem and delve into their own mental capacities in an endeavour to address these challenges. But does it really happen? What are the barriers to mastering effective thinking skills? The most obvious ones are as follows:
- A learner from a restricting environment where poverty, hunger, illnesses and danger are prevalent will probably focus on physical survival. It is possible, though, for a determined soul to turn the adverse circumstances into challenges.
 - Parents are supposed to expose their children to cognitive expansion opportunities, but sometimes may lack the knowledge and means to do so.

- The school environment may focus on the distribution of knowledge and not on developing young minds, which may inhibit the fostering of high-order thinking skills.
- If learners are exposed to a programme that intends to help develop specific thinking skills, the problem situations imitated are often not related to real-life situations. This will, in the long run, be a futile exercise because little transfer of skills will take place.

What is apparent is that there is no use in exposing learners haphazardly to a programme to develop thinking skills. Research done by Dincer and Guneyesu (2001: 207) reveals that young learners need to be continually exposed to training in thinking skills for the skills to be useful. This is an important principle in the presentation of a life skills programme and is also applicable to the mastering of all physical, emotional, social, thinking, motivational and moral skills. The layman's saying: "If you don't use it, you lose it" may well apply here.

6.3.5 Problems in acquiring motivational skills – motivational intelligence (MQ)

Murray (2001: 6–13) is of the opinion that we as humans can distinguish the motivational system as part of the human system. He contends that the motivational system is as much part of human existence as the other systems like the physical system (the body or psychomotor system), the idea system (cognitive/thinking system) and the relational system (social domain). It is then not inappropriate to talk about motivational intelligence as one of the human intelligences, as it refers to the ability of man to act successfully on a specific need or motive. Motivation suggests movement in a very specific direction. If one looks at the words "motivation" and "emotion", one detects the notion of movement, motion or moving in a direction. Motivational intelligence also suggests that if the initial endeavour to act or to move is not successful, the person will try again and keep on trying in order to satisfy the need or motive.

ACTIVITY

What do you think are the key elements of motivation? Think about movement, emotion ... Indeed! You need a

- person
- an inner state (a motive or need)
- action
- in a direction.

And what do you think motivates learners? Is it more of a motivation to attain rewards than to avoid punishment? Do learners act only on the incentive in the form of concrete and symbolic rewards?

Let us look at what the experts say about motivation. Reber (1995: 454) sees motivation as an energiser of behaviour. The learner goes into a motivational state as the result of multiple interactions of a large number of variables such as

- the need or drive level (the urgency to address a basic urge)
- the incentive value of the goal (how big the reward will be)
- the learner's expectations (the possibility to succeed)
- the availability of appropriate responses (applying learned behaviour)
- the presence of conflicting or contradictory motives and unconscious factors.

From what we have said so far, it is clear that there can be a number of problems which will inhibit an individual learner from acquiring motivational skills. Some of the most important barriers to mastering motivational skills are the following:

- The learner has a low drive level because of physical and psychological factors – he does not see the necessity of acting on a need.
- The learner contends that the effort of the action does not equal the final reward.
- The learner who has failed before will be reluctant to try again as the fear of failure exceeds the possibility of a successful outcome.
- Some learners have mastered specific skills, but do not know which to apply and when.

- Some learners are easily distracted and would sometimes rather go along with less demanding tasks or social interactions than pursue a dream or need.
- Some learners are paralysed by continual crippling health, socio-economic and emotional realities and do not want to engage in “selfish” enrichment strategies to the disadvantage of the group or family.

As you see, there are an endless number of variables which play a pivotal role in this elusive term, *motivation*. In the next section, a few other aspects of motivation will be discussed briefly.

One of the most basic elements which underpins motivation is the ability of the learners to have a dream or a vision. The learner who can see where he wants to end up in life will probably be more motivated than a learner who just takes every day as it comes. The learner with a vision will try each day to take one small step towards that goal he has set for himself. Every choice he makes will be evaluated – he will first want to make sure a particular choice will be to the advantage of the realisation of his dream. For Gottfredson (2002: 200) this belief in the self and the individual’s goals are correlated with interests and activities which are useful predictors of occupational choices. This implies that a learner who has a dream and believes in it and in himself will probably engage in activities and choices which will help him to reach that dream. Another aspect of motivation is the ability to bounce back from failure, disappointments, disaster, setbacks, criticism and trauma. Reivich and Shatte (2002) define resilience as the one element which determines how high we rise above that which threatens to wear us down. Resilience can also be described as a systematic phenomenon which is the result of the relationship between inner strengths and outer help (Janas & Nabors 2000: 17). The emphasis here is on the notion that learners need to be deliberately exposed to the concept of resilience and its many implications and facets. Brown (2001: 83) supports the idea of exposing learners to the dimensions of resilience and describes how effective a resilience education programme was in helping learners to deal with life’s problems.

6.3.6 Problems in acquiring moral skills – moral intelligence (MQ/MI)

ACTIVITY

We often hear the words “morality” or “moral” in everyday encounters and conversations with others. People talk about the “moral fibre” of a community, or refer to a person who “acted immorally” or to the country facing a “moral crisis”, or we experience a “moral dilemma” or challenging a person on “moral grounds”, etc.

But what does the concept entail? Can you write down the variables of the concept?

Read the following paragraphs and see if you were on the right track.

In its simplest form, the concept “moral” can be defined as the understanding a person may have between what is right and what is wrong. The dictionary definition describes morality as following the standards of right, virtuous or good behaviour (*Oxford Advanced Learner’s Dictionary of Current English* 1994: 804). What is clear is that we define morality in terms of human behaviour and actions in specific situations and set-ups. Humans abide by specific ethical and moral rules – or do not – and their behaviour is evaluated accordingly. Morality, then, is a human affair, because humans act according to social guidelines and will be judged for actions taken. These sets of sanctions and rules for classifying that which is regarded as right and proper within a particular group or society can be called a **moral code**.

Children develop morality over a period of time by observing the behaviour of others, and adopting and internalising the standards of right and wrong of their society. The work of Kohlberg, various psychoanalysts and Bandura (Sternberg, 2001; Reber 1995: 450) is regarded as the fundamental view on moral development and can be summarised as follows:

- Children identify with the values of parents and internalise these values into the superego (the human entity associated with ethical and moral conduct).
- The development of morality is assumed to take place through the dispensing of rewards

and punishments by adults and peers who serve as models for acceptable behaviour.

- Morality develops through the stages of avoiding punishment, gaining the approval of others, adherence to legitimate authority and developing moral judgement based on personal principles.

We can thus see that the development of morality implicates a number of variables, such as

- a developing, growing child
- who is exposed to the values and norms of parents and the wider community
- which uphold acceptable behavioural patterns and codes of conduct
- and demonstrate appreciation for diverse cultures and religions.

The ideal situation is that the child will internalise good-quality behaviour. However, the biggest barrier to developing moral intelligence is the adults that the child sees everyday (Coles 1998). What do children see everyday? They are exposed to authority figures who cheat, lie, bribe, defeat justice, disobey rules of conduct, condone injustices, act prejudicially and choose to ignore abuse. This is the behaviour children will probably internalise. Let us take the question of morality a step further.

Morality does not include only the description of good and bad behaviour; it has a ring of spirituality to it as well. Human beings are spiritual beings because they engage in rituals to honour and experience various forms of a deity. The child who is encouraged to connect with this deity will probably be better equipped to manage life's stressful situations. Levin (2001) is of the opinion that individuals who develop their spiritual intelligence will be able to unlock the inner powers of intuition, which prove to be a valuable asset in creative endeavours.

What is important is that the development of this part of being human should not be neglected, as it has the potential to enrich or destroy the soul of people and communities. In the end, the purpose of this dimension of humanness is to develop individuals (Bruess & Pearson 2000: 61) who have

- personal autonomy

- mature interpersonal relationships
- mature conduct
- a purpose.

ACTIVITY

If you were asked to select only one of the intelligences discussed above as being the most important, which one would you select and why? Read in the next section what our views are on this matter!

6.3.7 Situational intelligence (SQ)

We acknowledge the importance of all the intelligences discussed in this chapter. We, however, are of the opinion that the person, with his experience, knowledge and creativity, can apply a combination of all these intelligences to create surprising solutions and results in any specific situation. We would like to call it **situational intelligence** (Strydom & Venter 2001). This intelligence entails the surfacing of a talent which becomes evident when an inviting situation arises in which a person has to respond and react. During the application of situational intelligence, a person may push himself to achieve what he never thought possible. Sometimes people only become aware of this talent when they are faced with challenging and adverse situations. The individual then has to delve deep into the self to find the appropriate personal tools to apply in a situation. The idea of applying personal assets and experiences intelligently corresponds in some ways with the ideas of Ebersöhn and Eloff (2003) on life skills and assets in which the person is seen as a great source of creativity, which can be applied if the inner assets and capacities are accessed and applied.

ACTIVITY

You are strongly advised to read the work of Ebersöhn and Eloff (2003). Their approach to life skills is a valuable contribution to this developing field. You can find the full reference details at the end of this chapter.

To summarise: situational intelligence

- is applied in the *now*
- by a person who has access to all his intellectu-

al, physical, social, moral, emotional and motivational assets

- and has created the means of applying this industriously
- to the benefit of himself and the surrounding community
- in response to the development of challenging situations.

This positivistic approach sees the human being as the creator of his own destiny, rather than the victim of surroundings and circumstances.

But how do we prepare learners for surviving these challenges? In the next section, an example of a life skills model which can be presented to learners will be described.

6.4 FACILITATING LIFE SKILLS ACQUISITION – AN INTEGRATED HOLISTIC LIFE SKILLS MODEL

6.4.1 Introduction

South African schools are bound by law to implement the outcomes-based learning model which strives to enable all learners to achieve to their maximum ability. Specific outcomes are set for all eight learning areas including Life Orientation. As with the other learning areas, these outcomes encourage a learner-centred and activity-based approach to education (Department of Education 2002: 1). In the next section, the core principles of the learner-centred and activity-based approach will be touched on briefly.

6.4.2 The outcomes-based principles of a life skills model

Very specific outcomes-based learning principles are applicable in a life skills programme. Only a few of these principles, which should be kept in mind, will be discussed briefly.

6.4.2.1 Implementing a unique life skills programme by a skilled facilitator

As stated earlier, each educational set-up differs, and it is impossible to work out a complete life skills programme, and implement it, without considering the realities of that set-up. The ideal situation is that all educators in a school set-up

should be equipped and professionally trained to facilitate life skills programmes in the school. Nowadays teachers are trained in an outcomes-based framework to equip them to implement the Life Orientation programme. However, one person cannot implement one specific life skills programme in a school. The idea that is emphasised here is that teachers should be sensitised to the life skills needs in their schools and communities and should take the lead in addressing the identified themes by implementing the suggested life skills programme. They should, however, also take the learners' unique needs into account.

6.4.2.2 A life skills programme as part of the curriculum

The idea that life skills programmes should not be taught as add-ons to the regular curriculum, but should be fully integrated into the overall school academic programme is supported by recognised researchers (Zeidner et al. 2002). An emerging strategy in emotional education is, for instance, not to create a special class for teaching these skills, but rather to complement regular academic subjects by blending lessons on emotions with other topics like arts, health and science. This is hopefully the case with the compulsory implementation of the Life Orientation programme.

Other outcomes-based principles of a life skills programme which should be kept in mind and implemented will be discussed in the following section.

6.4.2.3 Life skills are presented in a group context

Human beings are group creatures and being in a school suggests that learners are constantly in contact with different groups of learners. It is then obvious that life skills work will be organised as group work sessions. The principle emphasised here is that we will always be part of a group, something that will continue after school, for instance in future work situations. The pressure on learners to learn how to work in a team is increasing. It is no longer acceptable that bullies and manipulators negatively influence the sensitive dynamics of a group. St Clair and Tschirhart (2002: 449) are of the opinion that team skills

should be taught as early as possible and that team education should be part of the main curriculum.

The main purpose of team education is for learners to acknowledge the fact that we need each other and that we all have the need to be included and valued by the group. Another purpose of team education is to enhance peer relations and the acquisition of cooperative skills (Cowie & Berdondini 2001: 517; Johnson & Johnson 1994). Cooperative learning forms a crucial ingredient of a life skills programme and provides training opportunities for learners to explore their own, and others', feelings during cooperative group work sessions, thus coming to a better understanding of group skills.

Learners should also be prepared to apply these group skills in community set-ups, as the school is part of this larger group: the community. Learners should also be helped to understand the role they can play in the community and to acquire skills to establish collaboration between the school and the community. McLaughlin (2001: 14) suggests that the best way of doing this is by developing collaborative community-based programmes. These programmes could be on a small scale, like painting the community hall or helping homeless people to start a vegetable garden. The significance of these projects is that learners will learn more about themselves, others and their community, thus creating young people with consciences and better insights.

6.4.2.4 Acquiring life skills is part of a continual learning process

Besides the cooperative learning skills learners will acquire during their exposure to life skills programmes, they will also be confronted with transformative and experiential learning opportunities. These two concepts will be defined briefly.

Transformative learning theory is based on the assumption that a learner's current perspective and consequent approach to life is derived from his experiences, thoughts, values, knowledge and skills (Christopher et al. 2001: 134). Transformative learning processes occur when learners critically reassess their current perspective and examine whether their present approach to doing things is right or wrong. It is clear why transfor-

mative learning principles should be incorporated into a life skills programme.

Another important ingredient of any life skills programme is **experiential learning**. Experiential learning is radically different from the traditional lecture approach to learning where the learner is a passive listener and the control of the material being presented is in the hands of the teacher. Experiential learning offers the opportunity for experiencing success by allowing the learner the freedom to decide what aspects of the learner's experience he wishes to focus upon, what skills he wishes to develop and how he conceptualises the conclusions drawn from the experience (Johnson & Johnson 1994: 51). Thus the primary motivation for learning in experiential situations is experiencing psychological success.

ACTIVITY

In your own words, define the following **outcomes-based learning principles** of a life skills programme:

- Cooperative learning
- Transformative learning
- Experiential learning

6.4.2.5 The life skills programme as part of a personal journey

Following a life skills programme should be seen as part of a learner's personal journey of discovery. Acquiring life skills is a process and during this process learners should be guided to learn more about themselves, about the people around them, and about their external worlds and environments. The idea is that the learner should become aware of these internal and external dynamics, explore the possibilities and meanings of these worlds and internalise the wisdom they have gained during the life skills learning processes.

6.4.3 An integrated holistic life skills model

Because it is impossible to elaborate here on the content of a life skills model, a summary will be given of the themes of one particular South African life skills model which was originally

developed in the early 1990s (Strydom 1991) and has since been elaborated upon. This life skills model contains original themes, as well as themes which incorporate many aspects already mentioned earlier in this chapter. This summary must be seen as mere suggestions of themes which could be incorporated in a life skills model. There are four main categories in the model: personal skills, social and communication skills, thinking skills and survival skills. **Personal skills** are intrapersonal skills and are seen as all those skills an individual has to master to grow personally and intrapsychically in order to understand the self better. **Social and communication skills** are interpersonal skills and suggest the skills a learner has to master to interact successfully with other peo-

ple. **Thinking skills** encompass some of the mental activities associated with concept formation, problem solving, intellectual functioning, creativity, complex learning, memory, symbolic processing and imagery. In short, thinking skills are those cognitive manipulation skills a learner has to master to give unique meaning to his world and to learn to apply in order to survive mentally in a competitive environment. **Survival skills** is a very broad term which refers to all those additional skills a learner has to acquire to survive in a demanding modern society. These include basic skills like reading and writing skills and include, for instance, high-level ones like computer skills. A summary of the themes of the model is given in Table 6.1.

Table 6.1 Themes of a life skills model

Intrapersonal skills	<ul style="list-style-type: none"> • Understanding the self • Understanding the body and diseases • Developing a healthy lifestyle: exploring the effects of food, nurturing and exercise • Using emotions as a motivational and explorative tool • Developing a sense of responsibility • Developing a future perspective • Handling challenges – resilience education
Interpersonal skills	<ul style="list-style-type: none"> • Communication skills • Interpretive skills • Developing body language skills • Understanding differences – culture and values education (dangers of prejudices and stereotyping) • Acquiring group work skills • Developing friendship skills • Acquiring conflict-resolution skills • Mastering community skills – identifying and reacting to community needs • Developing an understanding of peace/peace education • Developing the ability to understand other people's perspectives and views on issues
Thinking skills	<ul style="list-style-type: none"> • Mastering cooperative, experiential and transformative learning principles • Acquiring decision-making and problem-solving skills • Developing creative and critical thinking skills • Developing reflective thinking skills • Debating ethical and moral issues
Survival skills	<ul style="list-style-type: none"> • Mastering basic reading, writing, spelling, science and mathematical skills • Critical reading skills (evaluating what is read in papers and magazines) • Skills in admiring and preserving natural resources • Computer skills • Job application skills: compiling a curriculum vitae/preparing for an interview • Entrepreneurial skills

In the next section, an example will be given of an *intrapersonal* life skills lesson and after that an example of an *interpersonal* life skills lesson will be presented.

6.4.4 An example of an intrapersonal life skills lesson

Table 6.2 Sample lesson: intrapersonal skills

Theme
Developing a sense of a unique self
Outcomes
To explore aspects of the inner self To accept the self To develop a sense of identity
Planning
Take the learners on a two-hour walk in nature where they have to face mild natural obstacles. This walk in nature represents a walk into the inner self. Prepare the learners for the walk by asking them to focus on what they see, what they experience and what they think. Get material ready: poster paper and pens
Assessment
<ol style="list-style-type: none"> 1. After the walk, ask the learners to lie on their backs with their eyes closed. Ask them to imagine reliving the expedition again. Learners should try calmly and quietly to focus on what they are wearing, seeing, carrying, experiencing, drinking, eating, feeling and thinking. At this stage they should all be quiet. 2. The learners are now asked to draw a picture of what they have experienced. This picture is shared with the group. Learners were prepared for this by having been reminded of how to listen actively and to enquire politely about their friend's experience. The uniqueness of each learner's experience is emphasised and the principle of there being more than one way of interpreting an event is again discussed. 3. Each learner is now asked to summarise the full event on a piece of paper using the following headings: My physical experience: My limitations and strong points / My emotional experience: what I felt – some pleasant and some unpleasant feelings / My thinking experience: what thoughts were racing through my mind: some positive, some negative. 4. This information is shared with the group and learners have to share their ideas on the following: What have I learned about myself? How am I different from others? In which ways am I the same as others? 5. Finally the group shares, with each other, their feelings on being guided through the experience and on experiencing their feelings and uniqueness being acknowledged and validated by the group.
Personal skills which were revised during the lesson
Reflection-on-the-self skills Sharing skills Feeling the connection with others and allowing them to be
Personal skills which were taught during the lesson
Developing a sense of identity Self-evaluation skills Accepting the uniqueness of the spontaneous self Accepting differences

6.4.5 An example of an interpersonal life skills lesson**TABLE 6.3** Sample lesson: interpersonal skills

Theme
Developing perspective-taking skills via role-playing
Outcomes
To identify the sub-skills involved in recognising the feelings of others To develop strategies for recognising others' feelings and responding appropriately To identify situations where it is necessary to be aware of the feelings of others
Planning
Prepare learners by talking about sharing strategies Get material ready: Poster papers and pens
Assessment
<ol style="list-style-type: none"> 1. Present scenario for recognising the feeling of others: "You walk into the school cafeteria and you see one of the learners who is usually very bouncy and happy, sitting with his head bent and not speaking to anyone. When you approach him to speak to him, he responds with a cutting remark." 2. Individually, each learner is asked to list strategies for recognising how the other person is feeling in the scenario. 3. Each learner is to select a partner to share his strategies with. The partners then continue to generate strategies together. 4. By making use of consensus-reaching skills presented by the facilitator, each pair of learners selects the best strategy from their list and creates a role-playing situation to demonstrate it to the class. 5. After all the strategies have been presented to the class, the class determines the best strategy by again making use of consensus-reaching skills. 6. The strategy is written on the poster paper.
Social skills which were revised during the lesson
Participation skills Active listening skills Cooperation skills Consensus-reaching skills
Social skills which were taught during the lesson
Perspective-taking skills Recognising the feelings of others Accepting others and their feelings Acting diplomatically

Source: Adapted from work done by Gut 2000: 49

6.5 BARRIERS TO IMPLEMENTING LIFE SKILLS PROGRAMMES SUCCESSFULLY

Despite the fact that life skills programmes have been developed and that teachers have been trained, many factors still inhibit the successful

implementation of these programmes in school. Coetzee and Kok (2001) undertook a research project to determine the success of an HIV/sexuality and life skills programme. They (Coetzee & Kok 2001: 6–10) found that there are numerous factors which could inhibit the successful imple-

mentation of a life skills programme. Although these factors cannot be generalised for other school set-ups, the following serves as a summary:

- **Problems in the school:** Some teachers who were sent for training in presenting the life skills programme were not interested in the topic / No time on the school timetable had at the time of this research been allocated for the life skills programme / Some schools had problems with basic resources like electricity, which inhibited the implementation of the programme.
- **Problems in the community:** The attitude of some parents and communities was not supportive of the programme (parents would, for instance, say that they do not discuss sexual matters with their children) / Some illiterate parents were indifferent to the programme because of their own struggle to survive economically.
- **Problems in the district and province:** Teachers reported that they did not receive support from management, and insufficient monitoring functions were conducted by district and provincial management.

Only once these barriers are addressed appropriately will there be a chance of implementing the very important life skills programmes successfully in schools.

6.6 CONCLUSION

Any ordinary citizen in South Africa will be able to remind you of the social and economic realities of the country. With the HIV/Aids pandemic raging through our communities, unfavourable crime statistics, prevailing prejudices and the cruel dimensions of poverty, we can no longer afford to just focus on the three Rs of school life. It is accepted that our children need to be better prepared for real-life situations and that they should be exposed to more real-life skills. We hope that the contents of this chapter stimulated your thoughts on this broad topic and that you will be challenged to life skills action in your community!

Questions

1. If you were asked to describe life skills as a coping tool, how would you do so?
2. Name the different intelligences which correlate with the seven intelligences of Gardner.
3. In your opinion, what are the biggest barriers to the acquisition of life skills by learners?

Bibliography

- Abrahams, R., Creighton, K., Naidoo, N., Parker, A., Pillay, S. & Wegner, L. 2002. Life skills – a platform for nurturing adolescents through the journey of self-discovery. *South African Journal of Occupational Therapy*, 32(2): 2–5.
- Baker, K., Jacoby, J. & Gugliuzza, P. 2000. The fourth R. *Principal Leadership*, 1(2): 42–43.
- Bar-On, R. 1992. *The development of a concept and test of psychological well-being*. Unpublished doctoral thesis. Tel Aviv: University of Tel Aviv.
- Brown, J.H. 2001. Youth, drugs and resilience education. *Journal of Drug Education*, 31(1): 83–122.
- Bruess, B.J. & Pearson, F.C. 2000. A study of the relationship between identity and moral development. *College Student Affairs Journal*, 19(2): 61–70.
- Christopher, S., Dunnagan, T., Duncan, S.F. & Paul, L. 2001. Education for self-support: evaluating outcomes using transformative learning theory. *Family Relations*, 50(2): 134–142.
- Ciarrochi, J., Deane, F.P., Wilson, C.J. & Rickwood, D. 2002. Adolescents who need help the most are the least likely to seek it: the relationship between low emotional competence and low intention to seek help. *British Journal of Guidance and Counselling*, 30(2): 173–188.
- Coetzee, A. & Kok, J.C. 2001. Wat verhoed die suksesvolle implementering van die HIV/Vigs, seksualiteit en lewensvaardighedeprogram in skole? *South African Journal of Education*, 21(1): 6–10.
- Coles, R. 1998. *The moral intelligence of children*. London: Bloomsbury.
- Collins, B.C. 1997. *Emotional unavailability: recognizing it, understanding it and avoiding its trap*. Chicago: Contemporary Books.
- Cowie, H. & Berdondini, L. 2001. Children's reactions to cooperative group work: a strategy for enhancing peer relationships among bullies, victims and bystanders. *Learning and Instruction*, 11(6): 517–530.
- Department of Education. 2002. *Policy: Revised National Curriculum Statement Grades R–9 (Schools)*. Pretoria: Department of Education.
- Dincer, C. & Guneyso, S. 2001. Examining the permanence of problem-solving training given for the acquisition of interpersonal problem-solving skills. *International Journal of Early Years Education*, 9(3): 207–219.

- Ebersöhn, L. & Eloff, I. 2003. *Life skills and assets*. Pretoria: Van Schaik.
- Elder, L. & Paul, R. 2002. Critical thinking: distinguishing between interferences and assumptions. *Journal of Developmental Education*, 25(3): 34–35.
- Elias, M.J. 2001. Easing transitions with social-emotional learning. *Principal Leadership*, 1(7): 20–25.
- Evans, I.M. & Ave, K.T. 2000. Mentoring children and youth: principles, issues and policy implications for community programmes in New Zealand. *New Zealand Journal of Psychology*, 29(1): 41–49.
- Forgan, J.W. & Jones C.D. 2002. How experiential adventure activities can improve students' social skills. *Teaching Exceptional Children*, 34(3): 52–58.
- Frey, K.S., Hirschstein, M.K. & Guzzo, B.A. 2000. Second step: preventing aggression by promoting social competence. *Journal of Emotional and Behavioral Disorders*, 8(2): 102–112.
- Ganzel, R. 2001. Hard training for soft skills. *Training*, 38(6): 56–59.
- Gardner, H. 1983. *Frames of mind: the theory of multiple intelligences*. New York: Basic Books.
- Garner, P.W. & Estep, K.M. 2001. Emotional competence, emotion socialization and young children's peer-related social competence. *Early Education and Development*, 12(1): 29–48.
- Goleman, D. 1996. *Emotional intelligence*. London: Bloomsbury.
- Gottfredson, G.D. 2002. Interests, aspirations, self-estimates and the self-directed search. *Journal of Career Assessment*, 10(2): 200–208.
- Gut, D.M. 2000. We are social beings: learning how to learn cooperatively. *Teaching Exceptional Children*, 32(5): 46–53.
- Hay, I., Byrne, M. & Butler, C. 2000. Evaluation of a conflict-resolution and problem-solving programme to enhance adolescents' self-concept. *British Journal of Guidance and Counselling*, 28(1): 101–113.
- Hutchinson Concise Encyclopaedic Dictionary*. 1992. London: Helicon.
- Janas, M. & Nabors, M.L. 2000. Teaching strategies: fostering resiliency in young children. *Journal of Early Education and Family*, 8(2): 17–21.
- Johnson, D.W. & Johnson, F.P. 1994. *Joining together: group theory and group skills*. Boston: Allyn & Bacon.
- Kinginger, C. 2002. Defining the zone of proximal development in US foreign language education. *Applied Linguistics*, 23(2): 240–261.
- Lantieri, L. 2001. An ounce of prevention is worth a pound more than metal detectors. *Reclaiming Children and Youth*, 10(1): 33–38.
- Levin, M. 2001. *Spiritual intelligence*. London: Hodder & Stoughton.
- Lutzner, V.D. & Day-Vines, N. 2001. The healthy relationship program: preventing sexual assault of youth. *Reclaiming Children and Youth*, 10(3): 158–161.
- Mayer, G.R. 2001. Antisocial behavior: its causes and prevention within our schools. *Education and Treatment of Children*, 24(4): 414–429.
- MacKnight, C.B. 2001. Supporting critical thinking in interactive learning environments. *Computers in the Schools*, 17(3–4): 17–32.
- McLaughlin, M.W. 2001. Community counts. *Educational Leadership*, 58(7): 14–18.
- Morris, S. 2002. Promoting social skills among students with nonverbal learning disabilities. *Teaching Exceptional Children*, 34(3): 66–70.
- Murray, C.G. 2000. Learning about children's social and emotional needs at snack time – nourishing the body, mind and spirit of each child. *Young Children*, 55(2): 43–52.
- Murray, C. 2001. Personal and social education: perspective and practice. *Education and Training*, 43(1): 6–13.
- Nelson, A. & Allison, H. 2000. Values of urban aboriginal parents: food before thought. *Australian Occupational Therapy Journal*, 47(1): 28–40.
- Oatley, K. & Jenkins, J.M. 1996. *Understanding emotions*. Oxford: Blackwell.
- O'Hearn, T.D. & Gatz, M. 2002. Going for the goal: improving youths' problem-solving skills through school-based intervention. *Journal of Community Psychology*, 30(3): 281–303.
- Oxford Advanced Learner's Dictionary of Current English*. 1994. Oxford: Oxford University Press.
- Perry, B.D. 2002. Belonging to the group. *Instructor*, 111: 36–37.
- Reber, A.S. 1995. *The Penguin Dictionary of Psychology*. London: Penguin.
- Reivich, K. & Shatte, A. 2002. *The resilience factor: 7 essential skills for overcoming life's inevitable obstacles*. New York: Broadway.
- Rodgers, C. 2002. Defining reflection: another look at John Dewey and reflective thinking. *Teacher College Record*, 104(4): 842–866.
- Salovey, P. & Mayer, J.D. 1990. Emotional intelligence. *Imagination, Cognition and Personality*, (9): 185–211.
- Salovey, P., Mayer, J.D. & Caruso, D. 2002. The positive psychology of emotional intelligence. In Snyder, C.R. & Lopez, S.J. (Eds), *Handbook of positive psychology*. London: Oxford University Press, 159–171.
- Salzman, M. & D'Andrea, M. 2001. Assessing the impact of a prejudice prevention project. *Journal of Counseling and Development*, 79(3): 341–346.
- Segrin, C. & Flora, J. 2000. Poor social skills are a vulnerability factor in the development of psychosocial problems. *Human Communication Research*, 26(3): 489–514.
- St Clair, L. & Tschirhart, M. 2002. When and where? Facilitating group work beyond the borders of the classroom. *Journal of Management Education*, 26(4): 449–461.
- Sternberg, R.J. 2001. *Psychology: in search of the human mind*. Fort Worth: Harcourt.

Strydom, I. 1991. *Die invloed van lewensvaardighede op die skolastiese prestasie van onderpresterende begaafde adolessente*. MEd dissertation. Pretoria: Unisa.

Strydom, I. & Venter, M.A. 2001. *Informal lecture on the fields of talent*. Pretoria: Unisa.

Strop, J. 2000. The affective side of gifted students' development: do we need to teach students intrapersonal and interpersonal skills? *Understanding our Gifted*, 12(4): 16–17.

Thompson, V. 2000. CITs are campers in transition. *Camping Magazine*, 73(4): 32–34.

Van Raalte, J.L. & Brewer, B.W. 2002. *Exploring sport and exercise psychology*. Washington: American Psychological Association.

Wilterding, J., Baughn, C.C & Wanek, J.E. 2000. The inquiry process: another way of facilitating problem-solving through training. *Performance Improvement*, 39(9): 27–31.

Zeidner, M., Roberts, R.D. & Matthews, G. 2002. Can emotional intelligence be schooled? A critical review. *Educational Psychologist*, 37(4): 215–231.



**Section
D**

**Addressing
literacy
barriers**

FIRST LANGUAGE PROBLEMS

7

ANNATJIE DEDNAM

Learning outcomes

After reading this chapter you should be able to

- ▶ use the theoretical knowledge on spoken language, reading and written language to understand a learner's problems in any of these fields
- ▶ assess learners' spoken language, reading and written language problems
- ▶ support learners who are experiencing problems in spoken language, reading and written language.

Key terms

spoken language ♦ *reading* ♦ *written language* ♦ *spelling*

7.1 INTRODUCTION

Communication through language is the main ability which distinguishes humans from all other species on earth. In comparison with the stimuli-driven communication system of animals, language is a multidimensional and open system in which humans communicate their thoughts to

others who are familiar with the specific language system. It is subject to change and new words are formulated depending on new concepts that develop with the changes in the environment. It also enables humans to function independently in their world.

7.2 LANGUAGE AND COMMUNICATION

According to Jalongo (2000: 52) the two basic means of communication are **paralinguistics** (non-verbal) and **linguistics** (verbal). Paralinguistics includes facial expressions, gestures, body

The features of language are as follows (Jalongo 2000: 50):

- **Language is communicative:** through language we transmit and receive messages.
- **Language is abstract:** it is a system of signs and meaningful symbols that represent something.
- **Language is rule-governed:** the rules determine the order of sounds in words and words in sentences.
- **Language is social:** it enables a person to interact with other people.
- **Language is versatile:** it can be rearranged and combined limitlessly, and be used to communicate future information.

posture and intonation. It plays an important role in language comprehension. Linguistics, on the other hand, is the utterance of words and sentences. Communication can also take place through written language (reading and writing).

The main functions of communication (Tchudi 1994: 55–56)

- **Informing** is to give informative content to others by means of essays, lectures, reports, demonstrations, discussions, etc.
- **Expressing feelings** is communicating feelings, verbally or non-verbally, about oneself to others. These are feelings such as love, appreciation, admiration, disappointment and frustration.
- **Imagining** includes creative communication activities like dramatisation, fantasy, story-telling.
- **Ritualising** covers ordinary speech acts like greeting, introducing, teaching.
- **Controlling** is when one person tries to influence the thoughts and actions of another through threats, commands, arguments, etc.

7.3 SPOKEN LANGUAGE

When a person is speaking, he utters successive speech sounds. The order in which these sounds are uttered forms meaningful words and sentences, which enable the listener to understand the speaker's message if he is familiar with that specific language (Yule 1996: 1–20).

7.3.1 Cognition and language

When a person listens to a familiar language he is able to recognise the series of speech sounds perceptually and reconstruct them into meaningful words and sentence structures. This information is stored and recalled at a later stage. The cognitive functions involved are as follows:

- **Grouping:** information is grouped according to corresponding characteristics.

- **Differentiation:** the difference between a stimulus and an object is identified.
- **Generalisation:** information is classified.
- **Association:** the stimuli are associated with the objects they symbolise.

Cognitive schemas and schemata

For Tompkins (1998: 4–5), a cognitive structure is knowledge that becomes organised in the brain. As the knowledge increases it becomes "... increasingly integrated and interrelated", which is called a *schema*. When this knowledge is arranged in categorical systems they become *schemata*, and consist of the following components: "... categories of knowledge, the features or rules for determining what constitutes a category and what will be included in each category, and a network of interrelationships between the categories."

According to Ormrod (1998: 74), cognition consists of the following:

- **Inner language**, which is a symbolic thought system used to construct a message to convey to another person. Inner language differs between individuals since the concepts of individuals differ.
- **Receptive language**, which can be auditory (listening) or visual (reading) in nature. When listening to spoken language one decodes the auditory stimuli perceptually and organises them in meaningful word units.
- **Expressive language**, which is effective communication using speech or print to convey a message.

7.3.2 Metacognition and metalinguistics

Metacognition is the awareness one has about one's own thinking processes and the ability to use this knowledge to monitor and control one's cognitive processes. It enables one to learn and to evaluate one's quality of learning (Mather & Roberts 1995: 167; Mariotti & Homan 2001: 154;

Tompkins 1998: 8). Metacognition is involved in spoken language, reading and written language. On the subject of metacognition in reading and written language, Tompkins (1997: 136) states that learners think about the strategies they use for reading and writing and they apply and regulate their use of these strategies. During the foundation phase, learners' metacognitive knowledge grows as they learn about the reading and writing processes and the strategies that readers and writers use.

Metalinguistics, on the other hand, is one's ability to think about language and its uses (Mather & Roberts 1995: 167), to be aware of its functions and to manipulate it in different ways. In children, metalinguistic awareness develops in the following three phases: (1) *phonological*; (2) *syntactical*; and (3) *semantic awareness* embedded in the dimensions of language.

7.3.3 Dimensions of language

The three dimensions of language are *form*, *content* and *function*. When speaking, a person uses all three dimensions of language.

(a) Form

Form (*phonology*, *morphology* and *syntax*) is the grammatical construction of speech sounds according to set rules (Mercer 1992: 419).

Phonology is the sound system of language. A phoneme on its own has no meaning. "Phonemes deal with the position of a sound in a word, with stress, and with internal constraints that certain sounds put on others when pronounced together" (Sampson et al. 1995: 258). Although most languages contain the same basic sounds, each language has a specific sound system. Each language system has its own set of rules that determines the order of sounds (phonemes) in words and words in sentences.

Morphology is the system of meaningful forms in words. Morphemes are the smallest sound units in a word with meaning. If a morpheme is broken up into smaller sound units, it becomes phonemes without any meaning. Words are constructed of phonemes and morphemes. There are four different types of morphemes:

- **Free morphemes** are single root words, such as *book*, *water* and *key*.
- **Bound morphemes** become meaningful when used as a prefix or affix to a free morpheme: the prefix *un-* plus the root word *do* becomes *undo*; and *-ing* plus *water* becomes *watering*.
- **Derivative morphemes** change the meaning of the root word: *book* plus *-ing* becomes *booking* and has nothing to do with the word *book*.
- **Inflexion morphemes** do not change the meaning of the word but indicate time: past tense: *walk* plus *-ed* becomes *walked*; and plural: *cat* plus *-s* become *cats*, etc.

ACTIVITY

Use examples and make a list of a number of the most generally used *free*, *bound*, *derivative* and *inflexion morphemes* in the language you are teaching the learners. For example, in English, a single word such as *pen* is a free morpheme, because the word stands alone.

Syntax refers to the order in which the words are combined to form a sentence. A sentence always contains a *subject* and a *verb*. The words in a sentence are combined according to fixed rules. This combination may change to transform the sentence into another type of sentence, for example from a *descriptive* sentence to a *question* such as: *Mary is eating* to *Is Mary eating?*

(b) Content (semantics)

Content "...refers to the meaning of words" (Jalongo 2000: 57) in sentences. There are three categories of semantics: *objects* (*tree*, *dog*, *sugar*, etc.); *actions* (*eat*, *run*, *read*, etc.); *relations* between objects (*Peter and Ann*; *cat and dog*, *chair and table*, etc.) and *relations* between events (i.e. cause-and-effect relations like *drowsiness* and *going to sleep*). There are four forms of semantics:

- **Lexical semantics**. This refers to the literal meaning of each word in the sentence: *The blue sky* meaning *The sky is blue*.
- **Sentence semantics**. The meaning lies in the whole sentence and not in individual words: *He is cool* meaning *He is smart*.

- **Semantic relations.** Each word in a sentence has a particular function that expresses the relations between the ideas in the sentence: *He puts on his jacket before leaving home* meaning *It is cold outside.*
- **Interpretive semantics.** This refers to the various ways in which the same thought may be expressed, such as *The boy is naughty* and *The boy is impossible.*

(c) Function (pragmatics)

According to Tompkins (1998: 13), **pragmatics** “... deals with the social and cultural aspects of language use”. Pragmatics also includes the non-verbal behaviour of a person. It refers to the different ways in which a person expresses himself in a particular situation, for example the differences in a formal situation: *It is not the kind of music I prefer*, or to a friend: *I do not like the music*, or to a child at home irritating his parents: *The music is ugly!*

ACTIVITY

Two teams of learners are playing marbles during break. While one player is aiming at the marbles in the circle, the other members of his team are watching him with great enthusiasm. If he hits a marble in the circle they cheer him, but when he misses, there is a loud roar of dissatisfaction. While the one team is playing, the members of the other team are standing around, some are watching, others are yawning or eating their lunch.

Indicate which players show signs of the following non-verbal expressions: *happiness, concentration and attention, boredom and stress.*

guage ability develops gradually while interrelating with others and as their perception and speech motor skills (the way in which the mouth and the tongue are moved, for example) develop and their knowledge increases. Gradually they start using words – although not always correctly pronounced – at the age of two to three years. At the age of four their sentence structures are used in the correct order and include prepositions. Due to the rapid increase of their cognitive abilities, their ability to organise their thoughts and memory also increases (Yule 1996: 180). There is a rapid increase of their vocabulary and they are able to speak about a larger variety of topics and remember content for longer periods of time. By the time children’s spoken language resembles the language used by adults, this quick development of spoken language diminishes.

Children’s reading abilities develop after they have mastered a certain level of spoken language. This is when they are able to express themselves and understand what others are saying; therefore their expressive and receptive language abilities must be at a certain level of development before they are able to read.

Spoken language is learned incidentally, while reading is taught purposefully to learners, or they learn to read by themselves while watching others reading and by asking questions about the text and written letters.

Written language is a more complex use of language than spoken language or reading. The development of written language takes place concurrently with reading, although learners first become aware that the signs or scribbles on paper have meaning. Most learners are able to use written language adequately after they have mastered reading.

7.3.4 The development of spoken language, reading and written language

When a child is born the language areas in the left temporal lobe of his brain are developed to the extent that he is able to accommodate language. Children are not formally taught to use spoken language. They “learn language by using it and experiencing it rather than by being given rules about it to follow” (Tchudi 1994: 8). Their lan-

7.3.5 Relations between spoken language, reading and written language and their dimensions

The skills involved in spoken language are also involved in reading and writing. The involvement, however, differs. In spoken language people use their inner language system to encode their messages into a phonological sound system. When reading they decode the graphic symbols and integrate the information embedded in the ortho-

graphic symbols into their inner language system in order to extract meaning from the text. When writing they encode their message from their inner language system into graphic symbols. While speaking a person is more aware of the message he is transmitting than the language, words and sentence structures he is using. In reading, his attention shifts from decoding to comprehension, and in writing it shifts from the letters and spelling to communication (Dednam 2000: 147–148).

Perfetti (1997: 28–29) compares the relation between spelling and reading to the two sides of a coin. In spelling the speech sounds are transformed (decoded) into written letters and in reading the written letters are transformed (encoded) into speech sounds.

All three of the language dimensions (form, content and function) are involved while speaking, reading and writing. In spoken language learners are less aware of their use of the dimensions form and function than during reading and writing. This is especially true during the first grades at school while the learners are still learning to read and write.

7.3.5.1 Form (phonemes, morphemes and syntax)

In spoken language the learners utter a combination of the speech sounds or phonemes and morphemes according to fixed rules to form words used in such an order that they form sentences. They are not aware of the phonemes, morphemes and syntax and the rules relating to the specific language while talking.

In reading the learners have to decode the written word. They should also be able to identify written symbols and to relate them to the representative sounds of the phonemes and morphemes. Learners should know the rules relating to the combinations of phonemes and morphemes in order to identify the words. They should also be aware of the meaning of the words and sentences to understand the written text.

In written language the learners should know the relation between the graphic symbols, the letter sounds and the combinations of letter sounds to be able to express themselves through written language. This also requires knowledge of the

graphic symbols and motor ability to form the symbols correctly while writing.

7.3.5.2 Content (semantics)

To be able to comprehend what they are reading, readers should be familiar with the language the writer has used when writing the text as well as with the three components of semantics, namely *objects*, *actions* and *relations*. If learners cannot decode and identify a specific word in the text, it is possible to give meaning to the word by using contextual clues based on their knowledge of the topic and the structures of the sentences, for example:

Unfamiliar word: *locomotive*

Sentence: The *locomotive* of the train is pulling the carriages on the rails.

The words *train* (object), *pulling* (action) and *train* and *rails* (relations) give the indication of the word and its meaning. At the same time the learner identifies some of the letters and letter combinations in the word *locomotive* like *lo-* in the beginning and possibly the *-tive* at the end. If the reader is familiar with the word *locomotive* he would know it must be *locomotive* and not *engine*.

In written language the learners should have a message to write down. By means of the rules for writing words and constructing sentences the learner writes his message down.

7.3.5.3 Function (pragmatics)

Pragmatics is not embedded in word construction but in the words chosen and the manner in which the sentence is formulated in the text. Punctuation is further used to express feelings.

ACTIVITY

Compare the following two sentences. Do they differ in terms of emotion?

When John saw the snake behind his brother Tim, he shouted that there was a snake behind him.

When John saw the snake behind his brother Tim, he shouted: "Look out, Tim, there is a snake behind you!"

7.4 READING

Definition of reading

Ekwall and Shanker (1989: 3) use the following definition to describe reading:

“Reading is a process of constructing meaning from written texts. It is a complex skill requiring the coordination of a number of interrelated sources of information.”

Richek et al. (1996: 6–7) explain that readers give meaning to what they are reading. As all readers’ thoughts differ, the meaning and image each one gives to the content of the text is unique. Taylor et al. (1995: 3–5) give the following detailed description of reading:

- It is a *language process* of communication and is related to other language processes namely listening, reading and writing.
- It is a *cognitive process* as reading is also related to other cognitive processes like attention, perceiving, giving meaning and memory.
- It is a *socialising process*, as an absent writer is influencing the readers’ knowledge and motivation. It often takes place in a social situation where more than one person is involved, as in school and at home. It groups people together in social activities and it also enables individuals to practise certain careers.
- It is an *interactive process* where the quality of the reader’s comprehension is determined by the reader himself, the text and the writer, as well as the context in which the reading is taking place.

Pike et al. (1997: 24) briefly summarise reading as follows: “Reading ... is an *interactive* process in which readers use information from the printed text along with what is in their heads to *construct* meaning in a given situational context.” Most authors agree in their definitions that reading is an *interactive* and *social* process, as readers construct meaning of the written word through their cognitive abilities.

7.4.1 The involvement of the language dimensions in reading

Reading is a language act as all the language dimensions are involved while a learner is reading. In the beginning the learners concentrate more on the dimension of *form* for identifying the words and sentences in the written text, although the dimension of *function* (giving meaning to the written text) is also applicable. The third dimension of *pragmatics* is less involved in the early stages of reading but becomes more involved as the readers’ reading abilities improve.

7.4.2 The components of reading

The main components of reading are *recognising and analysing words* (identification of words) and *understanding of words and ideas* (comprehension). In the initial school phase, learners learn to read and in higher grades they read to learn. In the first two to three grades of the primary school phase, the basic reading skills are taught to learners who learn to recognise words although comprehension on a direct level of understanding is also involved. In the higher grades reading comprehension is the main focus of reading although word identification is still involved.

The scheme (Figure 7.1) for reading enfoldment as based on the reading framework of Ekwall and Shanker (1989: 16) illustrates the enfoldment of the reading components during the different school levels. Not all learners reach each level at exactly the same stage – some reach a higher level in an earlier or later school level. Older learners may still use the reading skills learned in a previous level when they encounter new and difficult words.

(a) Level 1: pre-reading skills (preschool to Grade 1)

1. **Phonemic awareness** is the ability to recognise, identify and manipulate the different speech sounds (Shanker & Ekwall 1998: 25).
2. **Letter–sound relations** is the ability to recognise the letters and to relate them to their associated sounds or vice versa. It is also the ability to identify capital letters as well as scripts in different fonts.

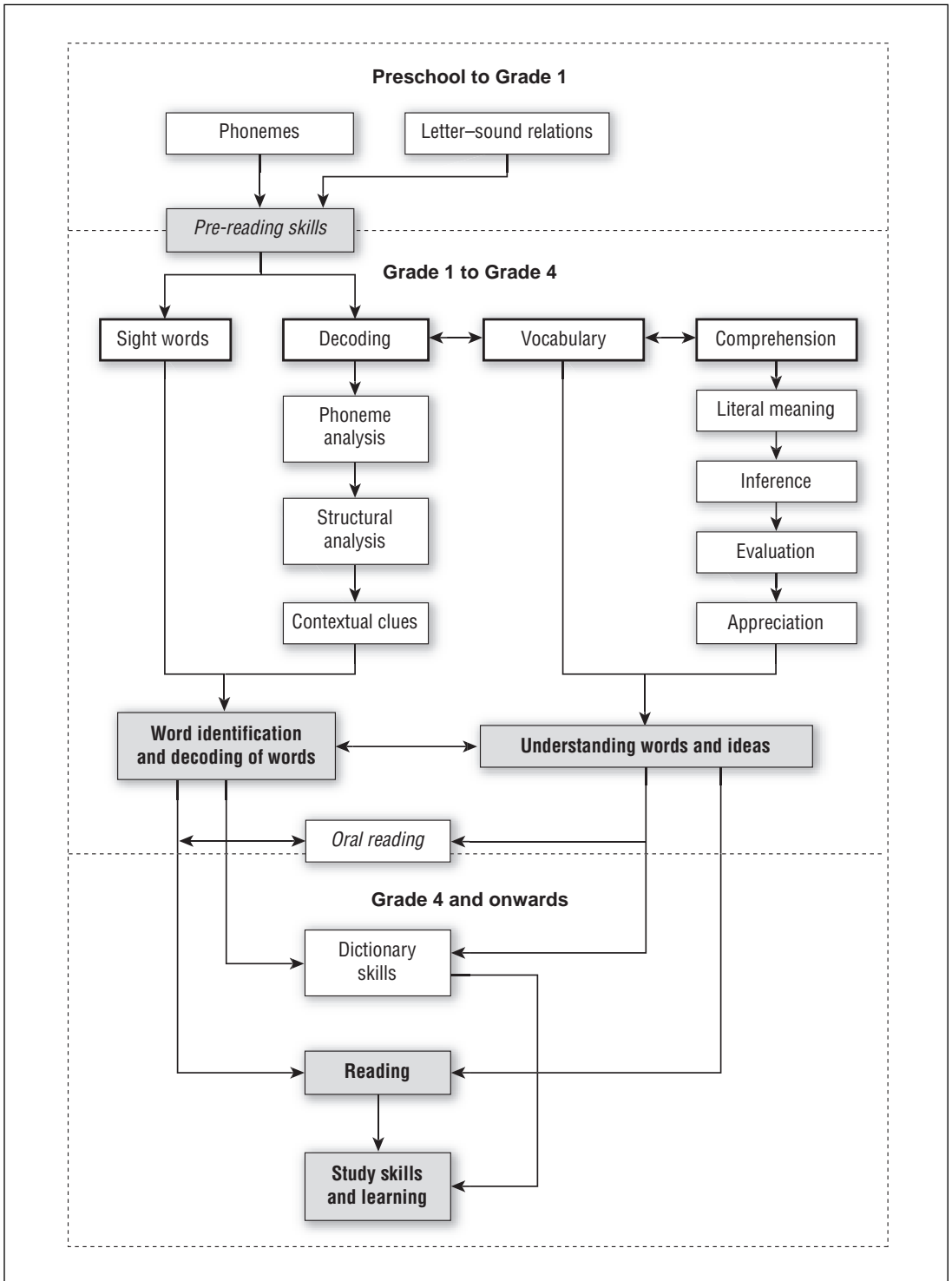


Figure 7.1 Reading unfoldment based on the reading framework of Ekwall and Shanker (1989: 16)

(b) Level 2: word identification and decoding of words, and understanding words and ideas (Grade 1 to Grade 4)

Actual reading only takes place when both the components – *word recognition* and *comprehension* – are simultaneously involved when one is reading. The sequence in which these components are involved is not fixed because sometimes readers use word recognition skills such as word decoding to identify a word, or they base their recognition of a word on their comprehension skills. For example, if a learner cannot identify or decode the word *teacher* in the following sentence: *John asks his teacher to help him with a sum*, he uses the sentence structure as well as his knowledge of the school situation to identify the word *teacher*.

(i) Word identification and analyses

This dimension is mainly based on the *form* dimension (phonology, morphology and syntax) of spoken language.

SIGHT WORDS

Sight words are high-utility words appearing frequently in text and that are recognised instantly (Shanker & Ekwall 1998: 77). These words enhance reading speed. Ekwall and Shanker (1989: 17) distinguish between two types of sight words:

- **Basic sight words** are high-frequency words occurring commonly in all text of a specific language. They are words such as *he*, *she*, *it*, and *were*. They are generally short and easy recognisable.
- **Other sight words** are those often used and read by a specific individual based on his personal interest. As a person often reads about a certain topic of interest, certain words that are often included in the text on that topic become high-frequency words for that person but not for others.

WORD ANALYSIS SKILLS AND DECODING

According to Richek et al. (2002: 154), readers first analyse a word into its structural elements (syllables) to help them to pronounce and understand the meaning of the word. If they do not identify the structures within a word, they analyse the word into its letter–sound elements.

Configuration clues are the external and internal clues that enable the reader to identify a word.

External clues are the external form of the word, for example letters extending vertically over more than one line (*he* and *me*; *get* and *wet*) or word length (*the* and *their*).

Internal clues are the shape of letters within words such as *we* and *me*, *shock* and *shook*.

- **Phoneme analysis.** Phoneme analysis means to use the decoding process to analyse a word into its sounds and to synthesise these sounds into a spoken word. The analysis of phonemes is based on certain spelling rules that are familiar to the learner, for instance the *c* in the word *cat* is pronounced as *k* when it is followed by an *a* sound and the *c* in the word *cell* is pronounced as *s* when it is followed by an *e* sound.
- **Structural analysis.** This is when a word is analysed into syllables, such as word roots and suffixes. The word rhythm gives the main indication of the syllables in a word, for example *com-pre-hen-sion*. Each syllable contains at least one vowel.
- **Contextual clues** means to use sentence clues to read an unfamiliar word that is difficult to decode; for instance if the word *motionlessly* is in the sentence: *An eagle hovers ... in the air when it spots prey on the ground*, knowledge of the sentence content and language structure enables the reader to read the word *motionlessly*.

(ii) Understanding words and ideas

Giving meaning to text enables the reader to comprehend what he is reading.

Ekwall and Shanker (1989: 15–17) classify this component into *vocabulary* and *other reading comprehension skills*.

VOCABULARY

Vocabulary is divided into *meaning vocabulary* and *utility vocabulary*.

- **Meaning vocabulary** refers to the words a person understands.
- **Utility vocabulary** refers to the words a person actually uses. People's meaning vocabulary is always larger than their utility vocabulary

because they understand more words than they actually use.

COMPREHENSION

- **Literal meaning and literal comprehension** refer to understanding words and information as they are stated in the text; for instance the word *ice cream* is a *sweet white/pink ... and cold substance with a nice flavour*.
- **Inference** refers to information that is not explicitly stated in the text but that can be related to the text. When Mary says: *I want to go for a swim* it may mean: *It is hot outside* or *I want to have fun*.
- **Evaluation** means to determine the correctness, usefulness, applicability and value of the information in the text.
- **Appreciation** is an emotional involvement in the text by experiencing a sense of excitement, fear, sadness and/or pleasure while reading the text. The sentence: *The children jump in the water and splash around while throwing a ball and shouting at each other* evokes a feeling of excitement and pleasure.

(iii) Oral reading

Learners' oral reading is adequate when they read fluently, phrase correctly, and use the correct pronunciation without any omissions, repetitions, substitutions, inversions or reversals, insertions, word guessing or voicing, lip movements, finger pointing and head movements.

(c) Level 3: reading and study skills (Grade 4 and onwards)

- **Dictionary skills.** To be able to use a dictionary and determine the pronunciation and meaning of a word, the learners must know the order of the letters of the alphabet in order to find the word. Their vocabulary should also be developed to the extent that they understand which word in the dictionary is applicable to the text they are reading.
- **Study skills and learning.** When learners are skilful in all aspects of reading they are able to use reading for studying without any problems.

ACTIVITY

Study the components of the reading enfoldment scheme (Figure 7.1) and the information following this scheme. Decide on a piece of reading material suitable for Grade 4 learners. Analyse the material and apply the components of the reading enfoldment scheme to this text.

7.5 WRITTEN LANGUAGE

Catach (in Jaffre 1997: 6) states about written language: "Scripts are sets of discrete, articulated and arbitrary signs, which enable any constructed message to be transmitted without necessarily using natural means." In written language the writer makes an appeal to the reader's sense of vision. The reader uses his visual perceptual skills to convert the perceptual stimuli of the graphic symbols into spoken language. Readers interpret the written text in their thoughts and convert them into the ideas and messages embedded in the words and sentences (Dednam 2000: 148). The following features are peculiar to written language:

- The writer's message can be interpreted by the reader in his absence.
- The interpretation of the message is possible a long time after it has been put into words.
- Non-verbal language such as signs, intonation and facial expressions are not involved when the message is interpreted.
- In order to interpret the message the reader must be familiar with the language system the writer used.

To convey a message clearly to a reader the written language must be correct. This includes the prescribed letter formation, as well as the correct spelling and language structures.

7.5.1 The elements of written language

According to Bratcher (1997: 25), there is no specific writing process because "[e]ach writer has his or her own writing process, and each piece of writing dictates its own process". There are three elements of writing, namely the **essay**, **spelling**

and **handwriting**. Spelling is prescriptive while essay and handwriting contain elements of prescriptiveness. The essay must be written according to the conventions of a specific language and rules of the language structures. In handwriting the form of the letters is prescriptive but the letter font, size and line formation are not.

7.5.1.1 Essay (cognitive component, linguistic and stylistic components)

(a) The cognitive component

The cognitive component of written language enables the writer to write his message logically so that the reader can understand it. The cognitive processes in writing an essay are the writer's thoughts, and expressive and metalinguistic skills.

(b) The linguistic component

The linguistic component includes the use of prescribed syntactic and semantic conventions of the specific language while writing. Pragmatics is only involved in the choice of words and the manner in which the words and sentences are written down. Punctuation may also be involved. Compare the following two sentences:

The teacher asks the class to sit and be quiet.

The teacher commands her class: "Sit down and be quiet!"

(c) The stylistic component

The stylistic component of written language includes the use of capitalisation and punctuation according to prescribed rules: *On a cold Monday morning the children, Mary and Peter, were staring out of the window at the strong wind lashing the big tree next to the house!*

7.5.1.2 Spelling

Spelling is the ability to construct the order of letters in words according to prescribed rules. Each language has its own set of rules for constructing the order of the letters in a word. To be able to spell words correctly, the writer must be familiar with the following (Dednam 2000: 154):

- sound–letter relations
- variations in the sound–letter relations

- vowel combinations
- consonant combinations
- consonant–vowel combinations
- word analysis, synthesis of letters in words and syllabication of words
- spelling rules
- variations in spelling rules
- affixes and prefixes

7.5.1.3 Handwriting

Definition of handwriting

According to Hammill and Bartel (1995: 152), "[Handwriting is] the ability to execute physically the graphic marks necessary to produce legible compositions or messages."

The ability to form letters and numbers with a writing instrument is a visual-motor skill that determines the quality and legibility of the written text. A proficient writer's writing is automatic and fluent, correct and legible without the writer giving deliberate attention to the writing act. Handwriting depends on (Dednam 2000: 154)

- eye–hand coordination
- knowledge of the writing direction from left to right
- visual discrimination of letters and words
- intact brain functioning.

7.6 BACKGROUND TO PROBLEMS IN SPOKEN LANGUAGE, READING AND WRITING AND FACTORS UNDERLYING THESE PROBLEMS

McEwan (2002: 1) says about failure in school-work:

No one wants to fail. Failure has the power to paralyse with fear, enrage with frustration, and demoralize with despair. ... Failure is particularly traumatic for children and adolescents because they have so few emotional, psychological, and intellectual resources on which to draw. Failure ... is the beginning of a downward spiral – falling through the cracks.

The following problems underlie learners' failure in all aspects of language.

7.6.1 Absence of verbal language

With few exceptions, children who have an absence of verbal language have striking disabilities such as being deaf or deaf-blind, or they are intellectually or severely physically impaired. These children experience problems in all language fields and need other forms of communication. (This is discussed in Chapter 9.)

7.6.2 Qualitative language which differs from the language norm

These learners' have problems using language adequately. They find it difficult to express themselves through language. This is often caused by serious emotional and behavioural problems and/or intellectual impairment. They also find it difficult to understand what others are saying and they use incorrect and inappropriate language.

7.6.3 Language backlog

These learners' use of spoken language has a marked backlog in comparison with the normal language use of other learners. This may be due to intellectual impairment, environmental disadvantages and homes where there is little language stimulation. In South Africa this is one of the main problems, as many children's home language differs from the language of learning and teaching in the schools they attend. Most children are taught in English, which they seldom hear or use at home or in their community. (See more in Chapter 8.)

7.6.4 Interrupted language development

This condition occurs when language development is impaired due to head injuries, infections, etc. after the learner has acquired language.

7.6.5 Communication problems

Communication problems may also be caused by the following:

(a) Speech problems

This refers to cases where there is an absence of speech sound, or poor speech production or quality, etc.

(b) Articulation problems

Speech sounds are uttered incorrectly or not fluently, for example stuttering.

(c) Pronunciation problems

In South Africa with its 11 official languages, the pronunciation of the nine indigenous languages differs to a certain extent from the Germanic languages, English and Afrikaans. This causes problems in these learners' spoken language, reading and written language. This is also applicable to dialects of the first language.

ACTIVITY

Can you think of examples to illustrate these statements? Turn to Chapter 8. For example, people from the Western Cape pronounce the *e* and *r* sounds differently from people in Gauteng.

(d) Problems with sentence structures

The word and sentence structures of indigenous languages also differ from the Germanic languages. In English and Afrikaans the sentence structures are based mainly on the same syntactical principle, namely *subject, verb and object*. For example:

English: *The man drinks his tea.*

Afrikaans: *Die man drink sy tee.*

To illustrate the differences between the Germanic languages and the indigenous languages, compare the following examples in English and Xhosa:

English: *John is riding his bicycle.*

Xhosa: *uJohn ukhwele ibhayisekile yakhe.*

Literal translation: *John climbs on bicycle his.*

(e) Variations in the language system

Dialect and communication differences make communication difficult. In South Africa mixing of languages often occurs. For example:

As I am a fundi in reading, I find it very lekker to read a book.

Although this is not seen as an authentic language problem, it may affect a learner's communication, reading and written language.

ACTIVITY

Make a list of the different communication problems you have encountered in your relationships with other people and in your class. This may sensitise you to language problems that may occur in your class.

7.6.6 Emotional factors

(a) Anxiety, insecurity and lack of motivation

Learners who experience learning problems seem to be shy when they have to answer questions or communicate in the class situation. They often give the impression that they are unsure of what they want to say.

(b) Hostility and aggression

Some learners who experience problems with language tend to become hostile and aggressive. They tend to distance themselves from the class and other learners, and often associate with a criminal subculture of delinquents where they use a distinctive language, which further hampers their language use and development.

(c) Passive distancing

Because of their inability to compete with other learners due to shyness or other problems, some learners develop low self-esteem and become depressed. They tend to distance themselves from the learning situation, the teacher and their peers, which further reduces their opportunities to communicate with others.

7.6.7 Physical factors

The most important physical problems causing learning difficulties in language, reading and writing are aural and vision ones. The inability to hear language clearly not only causes problems in all three language aspects – spoken language, reading and written language – but also in all the other learning areas. The visual sense is dominant

and 80 per cent of information in a child's vicinity is obtained through this sense. The child names the things he sees, and if he cannot see objects clearly, his ability to relate what he sees to language will be affected. (See Chapters 14 and 15.)

7.6.8 Neurological dysfunctions and perceptual problems

It is important that the brain functions normally if a child is to learn adequately, and this includes learning language. Neurological dysfunction causes problems such as paralysis, muscle weakness, perceptual problems and perseveration (compulsive repetition of an activity), which cause problems in all aspects of language. (See Chapters 12 and 16.)

7.6.9 Intellectual impairment

Intellectual impairment causes problems in all aspects of learning, and learners affected in this way show a low performance in all aspects of language. (See Chapter 17.)

7.6.10 Gender differences

As boys' physical and cognitive development is often slower than that of girls, their language development tends to lag behind when they enter school. They also tend to be less interested in aspects relating to schoolwork when they are still young.

7.6.11 Other problems

Poor nutrition and health problems may also cause learning and language problems as these influence a child's ability to give optimal attention. Health problems often cause absence from school and a resultant backlog in schoolwork. (See Chapter 19.)

Deprivation at home is caused by problems such as poverty, addiction and neglect, and also where parents do not have time to talk to their children. These children speak mainly to other children they are in contact with and their language development often suffers as a result.

7.7 ASSESSMENT OF SPOKEN LANGUAGE, READING AND WRITTEN LANGUAGE

The main forms of assessment for learners who experience language problems should be done by means of *observation; interviews with the parents, teachers and the learners; portfolio assessment; and error analysis* to determine the general and specific manifestations of language problems. (Please refer to *Assessment* in Chapter 3.)

7.8 MANIFESTATIONS OF SPOKEN LANGUAGE PROBLEMS

7.8.1 General and specific manifestations of spoken language problems

The following may indicate spoken language problems:

- Learners' use of language is on a lower level than that of their peers of the same age.
- They give the impression that they do not understand what has been asked and may often ask for the meaning of specific words.
- Younger learners tend to speak as little as possible and answer only with the movement of the head to indicate a *yes* or *no*. Older learners use a minimum of words to answer questions or when conversing with their teachers.
- Some learners hesitate to speak, and other learners may avoid or ignore them when they do speak, or interfere in their attempts at conversation.
- Such learners are often loners in the class owing to their inability to communicate adequately or to understand everything they hear.
- They have problems finding the correct words and often use phrases such as *you know, what-d'ya-call-it, so-and-so*; they use *um* when trying to say something, or they stutter and/or gulp when trying to speak.
- They forget what they want to say.
- They speak very softly and it is hard to hear them.
- They hesitate before starting to talk and form the words with their lips before trying to utter

them. They often give the impression that they are extremely shy or totally lack interest.

- Their vocabulary is limited, and older learners tend to use concrete sentences. They describe in detail what they want to say; for example instead of simply saying: *My mother is in bed with flu*, they would say something like: *My mother is ill. She is in bed. She has the flu.*
- Their sentence constructions are short and often incorrect.
- They do not understand indirect information in a sentence and concentrate on concrete information.

7.8.2 Problems with the dimension of language

7.8.2.1 Form

(a) Phonemes

Some learners have problems uttering the correct order of the phonemes in words: for example *pre-cent* in stead of *percent*; and *kelihopter* instead of *helicopter*. They have problems with articulation (*klee* instead of *tree*); and with pronunciation (*inportant* instead of *important*).

(b) Morphemes

Learners do not understand the word constructions and use the wrong suffixes (prefixes or affixes): *I spended my money on a book*; or *It is impossible to attend the party*.

(c) Syntax

Learners use the wrong word order in sentences: *I very much like butter and bread*. Their vocabulary is limited. They use short and stereotyped sentences such as: *They sit at the table. Then they say grace. Then they eat their food.*

7.8.2.2 Content

Some learners' understanding of language and their utility vocabulary is limited. They give attention to a certain aspect of a sentence and ignore the rest. When they are asked about the content of a paragraph or story they have heard, they remember only a few facts, or they give the impression that they did not follow it at all. They have problems understanding what is said to

them due to a deficiency in the specific language, or they have little or no knowledge of the topic spoken about.

7.8.2.3 Function

Problems with this aspect of language are due to the inability to understand the socio-linguistic system of the language. Learners are unable to express themselves verbally and non-verbally in a social situation. They also find it hard to understand non-verbal language and are unable to recognise sarcasm. They can hardly distinguish between friendliness and hostility in a person's non-verbal language and facial expressions owing to their poor social perceptions and interpersonal relationships.

7.9 READING PROBLEMS

Richek et al. (2002: 3) state that

[s]ociety suffers when citizens cannot read adequately. People with low reading levels comprise many of the unemployed, high school dropouts, the poor, and those convicted of crimes. The problems of our schools, the growth of poverty, and the loss of family values all show some association with poor reading.

Richek et al. (2002: 3–4) also say that although people of a few generations ago could cope well in business and society without the ability to read adequately, nowadays it is almost impossible. People need education and must be able to read at a certain level to obtain jobs and to fulfil a number of daily tasks.

There are two basic factors that help children to learn to read:

- They should realise that written text is related to spoken language.
- They should be motivated and interested in reading, and be able to identify the written symbols and associate them with the related language sounds.

7.9.1 The determination of learners' reading levels

The method of determining a learner's reading

Note

To support a learner who experiences problems in reading, it is useful to determine his reading level as it enables the teacher to choose suitable reading material.

The method of determining the reading level of learners discussed below is based on reading material that is standardised for the specific reading level. Therefore it gives an indication of the grade level on which a specific learner is reading. Teachers who ignore the reading level of a learner do not always use reading material that is suitable for a specific learner. If, for instance, a Grade 4 teacher is using reading material suitable for Grade 1 or 2, the learners may become frustrated, and this will often result in their manifesting behaviour problems that they do not really have.

However, this method of determining a learner's reading level has endless possibilities as a teacher may use any content – especially content that interests a learner. A motivated learner is more willing to learn to read than one who is bored with reading content that is too easy or too difficult. Therefore the following information is to determine whether the material the teacher wants to use for a specific learner is suitable and to determine the learner's reading level.

level does not give a precise indication of his actual reading abilities, but it does give an indication of where to start with reading support. Although the formula used to determine the reading level of a learner was developed for English reading, it is useful for reading in the other languages as well. It should, however, not be considered as the final manner of determining the reading level of a reader. There are three reading levels (Mariotti & Homan 2001: 73; Richek et al. 2002: 67):

(a) Independent level

On this level learners read the text with ease without the support of the teacher. The text could be used for recreational reading and homework.

The word recognition accuracy of the learner should be between 98 and 100 per cent and the comprehension between 90 and 100 per cent.

(b) Instructional level

This is the level on which instruction should take place. Although the reading material is challenging for the learner, word identification and comprehension are not too difficult. On this level teachers need to help learners with the vocabulary and guide them throughout the reading session. The word recognition accuracy of the learners should be between 95 and 98 per cent and the comprehension 70 to 89 per cent.

(c) Frustration level

On this level learners find the pronunciation of words and the understanding of the content difficult. Their word recognition accuracy should be 95 per cent or less and their comprehension 70 per cent or less. The following symptoms indicate that a specific piece of text is on the frustration level for a specific learner:

- Oral reading is too loud or too soft.
- Reading is arrhythmic and word by word.
- Reading intonation is inadequate.
- Sub-vocalisation, lip-reading and head movements occur, as well as finger pointing.
- The learner often asks for help.
- There is little indication of interest in the text and the story, and the learner seems to be tired.
- The learner refuses to read any further.

7.9.1.1 Determination of word identification

Richek et al. (2002: 67–73) explain the determination of the reading levels as follows: A learner's word recognition level is determined during oral reading. While the reader is reading, all the errors and miscues are marked on a copy of the reading material – even if the same errors or miscues are repeated more than once – to determine the type of problems a learner is experiencing in word identification. This information may later be useful when supporting the reader.

To determine a learner's level of word identification, the following formula should be used:

$$\frac{\text{Words correct}}{\text{Total number of words}} \times 100 = \square$$

Determine the total number of words in the passage and the number of words read incorrectly by the learner:

Example

Number of words in the passage: 150

Number of words read incorrectly: 45

Subtract the number of incorrect words from the total number of words: $150 - 45 = 105$

Divide the number of correct words by the total number of words in the passage:

$$105 \div 150 = 0,7$$

Multiply the answer by hundred:

$$0,7 \times 100 = 70\%$$

The earlier information on the different levels shows that 70 per cent is on the frustration level, and that the level of the text is too difficult for the reader.

7.9.1.2 Determination of reading comprehension

The comprehension level is determined during silent reading. After the reader has read the passage silently, ask questions on the content of the passage. If the reading material is more than one page long, questions should be asked after each page has been read.

Determining the reader's comprehension level is based on the following formula:

$$\frac{\text{Number of correct answers}}{\text{Total number of questions asked}} \times 100 = \square$$

Determine the total number of questions as well as the number of incorrect answers for the whole passage:

Example

Total number of questions: 12

Number of incorrect answers: 3

Subtract the number of incorrect answers from the total number of questions:

$$12 - 3 = 9$$

Divide the number of questions answered correctly by the total number of questions:

$$9 \div 12 = 0,75$$

Multiply the answer by hundred:

$$0,75 \times 100 = 75\%$$

According to the earlier information on the different levels, 75 per cent is on the instructional level. This means that the content is suitable when teaching the learner new information.

7.9.1.3 Determining the overall reading level of a learner

Richek et al. (2002: 73) say that instructional decisions should be based on both the reading modes. The results of word identification and comprehension should be put next to each other and the learner's level of reading should be determined by consulting the third column of the scheme of Richek et al. (2002: 73).

Comprehension	Word recognition	Passage level
Independent	Independent	Independent
Independent	Instructional	Instructional
Independent	Frustration	Frustration
Instructional	Instructional	Instructional
Instructional	Independent	Instructional
Instructional	Frustration	Frustration
Frustration	Frustration	Frustration
Frustration	Independent	Frustration
Frustration	Instructional	Frustration

Figure 7.2 The overall reading level of a learner

7.9.2 Manifestations of reading problems

(a) General manifestations of reading problems

There is a resemblance between the reading problems of learners in the initial school phase and those of learners in the intermediate phase. However, the intensity of the problems differs, as the reading problems of learners in the initial school phase are more conspicuous. Learners in the initial school phase tend to read out loud and to sound out the words they cannot identify and to repeat the word afterwards. Intermediate learners read the word by synthesising the sounds (*a-pppearance* – the hyphen indicates a sound which is sounded out for a longer period of time while the reader decides on the following group of sounds). Learners in the senior phase still experience the same problems as learners in the intermediate phase, although these occur in more difficult words and word phrases.

Learners experiencing problems with analysing words into phonemes and morphemes and with identifying the rhythm of words in sentences will find reading very difficult.

Other general manifestations of reading problems are too much dependence on the decoding of words; incoherent, slow and inaccurate reading; and poor comprehension. The readers' reading experience and general knowledge is limited and they display little interest in reading or are unwilling to read. Their self-images are low, they exhibit reading fear and they wriggle while reading.

(b) Oral reading problems

Indications of problems are reading word by word, incorrect phrasing and poor pronunciation. Such readers omit words in sentences, and repeat words, sentences or even paragraphs. They invert (*me/we*) and reverse (*dog/bog*) letters, and insert, substitute and guess at words. They also tend to voice or sound words, move their lips, point with a finger and move their heads while reading.

7.9.2.1 Problems in the components of reading

Shanker and Ekwall (1998: 197) outline reading problems as follows – this is based on Figure 7.1:

(a) Level 1: pre-reading skills (preschool to Grade 1)

- **Phonemic awareness:** Preschool children show little interest in the reading process or phonemes. They cannot remember the phonemes and do not even try to do any pre-school writing. Some of these learners have perception problems and find it hard to discriminate between the different sounds, or they cannot remember the specific letters.
- **Letter–sound relations:** These learners are not interested in the letter–sound relations as they do not know or understand the letters or the sounds. They cannot relate the sounds to the letters because they cannot discriminate between the letters visually, or they cannot remember or discriminate aurally between the sounds related to the letters.

(b) Level 2: word identification and decoding of words, and understanding words and ideas (Grade 1 to Grade 4)**(i) Recognising and analysing words**

SIGHT WORDS

- **Inadequate ability to identify basic sight words.** Their general sight vocabulary is inadequate due to perception problems, attention deficit and poor memory.

WORD ANALYSIS SKILLS AND DECODING

- **Configuration clues.** Learners who experience problems using external and internal clues in words are still having difficulty with the letter–sound relations of the preschool phase. They also experience problems with sight words and rely mainly on word analysis, but without success as they are unable to identify letters and remember their sounds.
- **Phoneme analysis.** Some learners have problems with consonants, vowels, blends, digraphs and diphthongs. They also find structural analysis difficult and do not know the rules that constructions are based on. They have trouble analysing the words into phonemes and morphemes.
- **Structural analysis.** Learners experiencing problems with rhythm cannot identify the word

syllables even when singing a song. They also do not know the rules on which word syllabification is based.

- **Contextual clues.** These learners are unable to identify words on sight. They often concentrate on sounding out words, but do not remember or know the content of the text as they do not understand what they are reading or identify the sentence structures.

(ii) Understanding words and ideas

VOCABULARY DEVELOPMENT

These learners' vocabulary or word meaning and comprehension are inadequate. Richek et al. (2002: 150) elucidate: "[I]f a word is not in your meaning vocabulary, you cannot check pronunciation against meaning." This means that these learners cannot identify words on sight or in a sentence structure.

COMPREHENSION SKILLS

- **Literal meaning.** Some learners have to sound out every word, and thus lose the meaning of the sentence content. They therefore find it difficult to understand the meaning of the sentence.
- **Inference.** Learners who experience problems with the literal meaning of the text are unable to follow the underlying information not directly stated in the text.
- **Evaluation.** As such learners do not understand what they are reading or their knowledge of the topic is limited due to poor general knowledge, they are unable to evaluate the content of the text.
- **Appreciation.** As such learners find the reading task difficult and do not understand everything they are reading, they cannot appreciate the content.

(c) Level 3: reading and study skills (Grade 4 and onwards)**(i) Oral reading**

When reading out loud the learners stutter over words; sound out words; phrase incorrectly; read monotonously; repeat words and sentences; omit, invert or reverse; and insert and substitute letters and words. They guess at words or voice them,

move their lips, point with a finger and/or move their heads while reading.

(ii) Dictionary skills (for older learners)

The dictionary skills of these learners are limited. They are unfamiliar with the order of the letters of the alphabet. They do not know the spelling of words and are unable to interpret the information in the dictionary. Because of poor language knowledge they cannot decide on a word applicable to the text they are reading.

(iii) Study skills and learning

Poor reading hampers learners' ability to apply study skills, as they are unable to follow the text and remember the content. Their reading speed is slow and they find it hard to adjust their speed. Some of them read very fast but inaccurately. They have problems giving attention to the reading content while they read and have to reread parts of the text repeatedly and then lose the meaning of the rest of what they have already read. They cannot distinguish between relevant and unimportant information and read everything in the same detail. They do not skim and scan, and cannot find applicable information in the text.

ACTIVITY

Make a list of a learner's reading problems and indicate the component and its aspect in which the learner is experiencing problems. Then decide on the reading level in which every one of these problems occurs.

7.10 MANIFESTATIONS OF WRITTEN LANGUAGE PROBLEMS

Most learners who experience spoken language and reading problems also experience problems in written language, as written language is the highest level of language use. It is also far more complicated than using spoken language or reading. It is not always easy to determine in which aspect of written language, namely the essay, spelling or handwriting and their components, the problem lies. Manifestations of problems in the elements of written language and their components are the following:

7.10.1 Essay

Learners with learning problems are not always aware that the main aim of written language is for communication. They presume they have to do it because the school and their parents expect them to. Therefore they do not see the use of it and tend to neglect it. Their main aim when writing is to finish the task as soon as possible.

(a) Cognitive problems

Cognitive problems in written language are difficult to identify because learners' spelling and handwriting may influence the quality of the content of their written work. These learners keep their written sentences as short as possible and give little information in order to make fewer mistakes and to limit the writing act.

They do not always understand instructions as their vocabulary is limited. They avoid discussions as they find it hard to follow narratives. Indications of cognitive problems are sentences that are not logically ordered, which is due to disordered thinking. Their sentences are short, without depth and with little variation. They tend to repeat the same sentence structure throughout the written text, for example:

He pours tea into his cup. He stirs his tea. He puts sugar in his tea. He drinks his tea.

The content is superficial, concrete, not logically ordered and at a low level (if written by a Grade 4 learner, for example).

(b) Linguistic problems

Problems with spoken language cause the learner to use incorrect sentence constructions, wrong words and short sentences, and to repeat basic, high-frequency words in written language. Learners with linguistic difficulties also often repeat the same type of sentence structure, as follows

I wake up. I wash my face. I eat my bread. I drink my tea. I go to school.

(c) Stylistic problems

These are problems some learners have with capital letters and punctuation. They tend to ignore them in their written texts, or they use them

incorrectly in and between words and in sentences as they do not understand when and where to use them.

7.10.2 Spelling

Problems with letter–sound relations (especially vowels with inconsistent letter–sound relations such as *week* and *bread*; *seat*, *hear* and *bear*; and *call*, *cellar* and *cello*) are some of the main causes of learners' inadequate spelling. They tend to

write unknown words and words they seldom use in written work phonetically and ignore spelling rules.

7.10.3 Handwriting

The handwriting of these learners is mostly untidy, the line formation and size of the letters are uneven, and their writing speed is very slow or fast. Slow writers tend to press extremely hard with their pencil or pen while writing. Some learn-

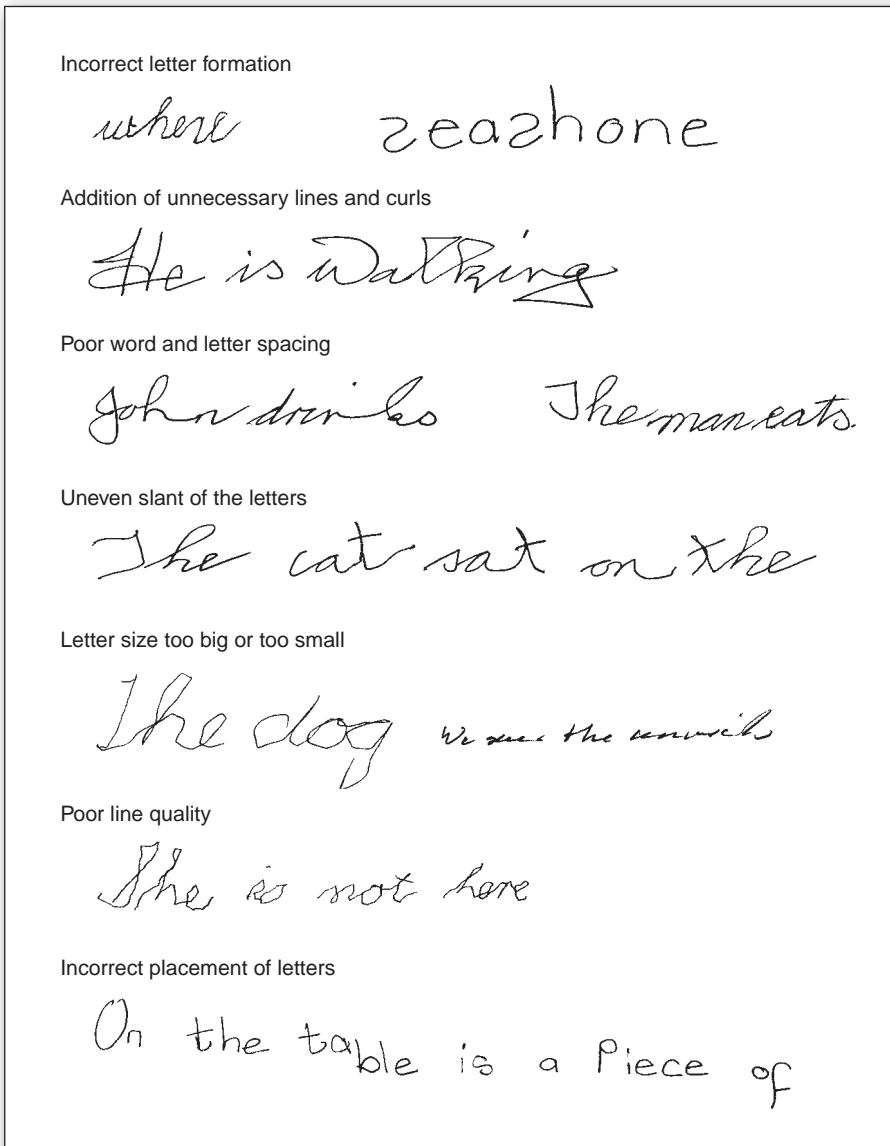


Figure 7.3 Examples of poor handwriting

ers' handwriting gives the impression of neatness but it is extremely difficult to read. The following aspects affect the legibility of a learner's handwriting: incorrect letter formation, and the addition of unnecessary lines and curls (teenage girls, especially, are inclined to do this); poor word and letter spacing; uneven slant of the letters; poor line quality; uneven letter size, or too big or too small letter size; and incorrect placement of the letters.

Other problems underlying poor handwriting are

- poor visual acuity, perception and motor skills
- uncertainty in hand domination
- emotional problems like anxiety
- poor motivation and lack of desire to try.

7.11 LEARNING SUPPORT TO LEARNERS WITH FIRST-LANGUAGE PROBLEMS

Previously, schools dealt with the different language areas (essay, composition, grammar, reading, spelling and written language) separately. Nowadays the emphasis is on a holistic approach in which all aspects of language are taught simultaneously. Previously teachers supported learners only in the aspect of language in which they were experiencing problems, such as confusing the *ea* sounds in words. Now, when a learner experiences problems in a specific aspect of language, the teacher has to concentrate on that specific aspect without neglecting the others. The point of departure is that learners should be aware of the place of their problem within the holistic language situation.

7.11.1 General guidelines for learning support to learners with language and communication problems

Language support should take place throughout the school day and in all the learning areas. Although teachers should work on all aspects of language simultaneously, they should concentrate on any problem areas with each learner without neglecting any other aspects.

It is very important not to criticise learners with any spoken language, reading and written lan-

guage problems or to make fun of their mistakes. This is applicable to the teacher as well as to the other learners in the school and the parents. Rather than telling learners that their work is wrong, untidy or not up to standard, the correct example should be given or explained to the learner without any negative comments.

(a) Development of listening skills, vocabulary and speech abilities

When assisting learners with spoken language problems, avoid questions that could be answered with *yes* or *no* only.

Note

Instead of beginning the question with words such as: *Is/Have/Will/Can ...?* commence the question with words like *Who/Where/What/When/Why...?* etc.

Below are a few ideas to help learners to develop spoken language skills:

- Listen to stories and conversations.
- Follow and carry out instructions.
- Conduct conversations and telephone conversations.
- Present formal and informal talks on interesting topics.
- Tell a story or dramatise a story or happening and improvise the happening.
- Construct a puppet theatre.
- Read a dialogue.
- Take part in choral speech.

These activities must be adapted to the different school phases. Keep these learners in small groups of three to five learners and exclude those who may dominate the group.

(b) Learning of language etiquette

Language etiquette used by a community depends on the norms of the specific cultural group. In South Africa, where there are different cultural groups, it is important that the learners do not only know and use their own cultural language etiquettes, but also respect and be familiar with the different courtesy conventions of other cul-

tural groups. This will enhance the interrelationships between the different groups. Some of these etiquettes apply to all communities.

Language etiquette

The language etiquette applicable to all cultural groups is as follows:

- Listen and give attention while another person is talking and do not interfere in the conversation.
- Know which language conventions and topics suit specific situations.
- Know the etiquette of the different cultural groups, like greetings, congratulations and condolences.
- Learn to respect others' feelings and behave in accordance with the norms of the situation, such as keeping silent in a school library or media centre, church and hospital.
- Learn to be assertive with friends without becoming aggressive and hostile and too domineering.

7.11.2 Reading support

Two to three decades ago when the medical model was popular for “remediation” (support for learning problems), the point of departure was exercises for the “improvement” of perceptual skills such as visual, auditory and tactual skills. Initially these exercises had no relation to the reading act itself and gradually they proceeded to work with formal reading material like phonemes, words, etc. Research has proved that this was a waste of the learners' time – they were already lagging behind in their reading and the situation was made worse by spending time on these perceptual exercises even if only for a few weeks. Therefore, although nowadays perception is still included in reading support, it concentrates mainly on formal reading material like phonemes, words, etc.

7.11.2.1 General guidelines for reading support

A very important aspect of reading support is to give the learners the opportunity to listen to the

spoken word, as written language differs from spoken language. By reading to them often, the learners become used to language and sentence structures in written language, and this may help them to understand the content better when they read.

Making use of reading games, and reading in real-life situations in order to enhance the learners' interest in reading also makes them aware that reading is part of peoples' daily lives.

Learners should always experience reading as a pleasure as this motivates them to want to read. Do not criticise every mistake, but acknowledge every attempt at improvement in a learner's reading even if it is only a word or two, or a vague indication of an attempt to improve reading, reading speed or intonation.

7.11.2.2 Specific support for reading problems

Note

It is not possible here to describe all the reading strategies for supporting learners with reading difficulties. Therefore you are referred to libraries where books describing reading problems can be found. Look through the sources on the shelves and decide on strategies that might be applicable for learners in your class and to which you may adapt your specific strategies of teaching.

(a) Level 1: pre-reading skills (preschool to Grade 1)

- **Phonemic awareness and alphabet knowledge.** These are problems that should be solved in the first two grades of school as learners who proceed to higher school levels find reading extremely difficult if they are still experiencing problems. Older learners find it hard or even impossible to overcome these problems. For many learners, poor reading has at this stage become a habit that will affect them emotionally throughout their school career. In higher grades the teaching of reading becomes more superficial and less time is spent on it.

Games are an important way of teaching

these skills to learners with difficulties. It is however important that the learners understand how these skills fit into reading.

(b) Level 2: word identification and decoding of words, and understanding words and ideas (Grade 1 to Grade 4)

During the initial phase of reading teachers adopt a certain reading approach when teaching reading. The best known reading approaches are the bottom-up approach, top-down approach and interactive approach.

- **Bottom-up approach.** The bottom-up approach for teaching reading was used for many centuries. Only a few people learned to read and the rest remained illiterate. The point of departure for teaching reading using this approach is to teach the learners the letter–sound relations and then to sound and say the words. Comprehension according to this approach developed automatically. To counteract comprehension problems, teachers started using the top-down approach
- **Top-down approach.** The point of departure in the top-down approach is to teach learners to identify whole words and to read sentences without sounding the words. According to this approach readers become aware of the phonemes and the letter–sound relations while they are reading. Their awareness of letter–sound relations develops gradually. As in the case of the bottom-up approach, all learners did not learn to read adequately.
- **Interactive approach.** Because of the limited success of the bottom-up and top-down approaches, the interactive approach of Stanovich (1984: 11–18) became popular. This approach tries to accommodate both word identification and comprehension at the same time while teaching learners to read. It ensures more success than the other two approaches as it helps learners who tend to concentrate on letter–sound relations and those who concentrate on comprehension. The principle of this approach is adapted by many other reading approaches such as the *holistic* approach and the *language experience* approach. These

approaches include word identification as well as word decoding. It is mainly the order and strategies used to teach word identification and comprehension that differ in the other approaches.

(i) Word identification and analysis

Word identification and analysis are taught mainly at preschool level and in the initial school phase. Games are useful as young learners enjoy playing with letters and words. It is, however, essential that the learners apply these newly learned skills to formal reading.

SIGHT WORDS

Repetition is the most important method in teaching sight words to learners. Shanker and Ekwall (1998: 92) emphasise that these words should always be taught in the context of a sentence as it helps the learners to identify high-frequency articles, prepositions, nouns, etc. on sight. Playing word games with the learners by using word and picture cards is very effective with younger learners. Games allow for repetition without boring the learners. Older learners also benefit from games, depending on the type of game used. Discourage learners from sounding out high-frequency sight words such as *were*, *and*, *which* and *that*. These words should always be given in the context of full sentences to enable them to understand the words and to know how they fit into the reading act (Shanker & Ekwall 1998: 92). Sight words attached to objects in the classroom should also be given in full sentences placed under the words.

WORD ANALYSIS SKILLS AND DECODING

In order to decode words, learners should be able to analyse them in their letter components and to relate the sounds to the letter symbols. Word games could be useful in teaching the learners to recognise the high-frequency morphemes on sight and to identify them within words, for example: the *-ing* in words like *drinking*, *sleeping* and *eating*; and the *-ed* in words like *walked*, *jumped* and *hopped*.

- **Configuration clues.** Configuration clues are the external and internal clues that enable readers to identify words. Intact visual percep-

tion is important here as it helps with the identification of letter–sound relations. The better a learner is able to identify letter–sound relations, the better he will be able to rely on configuration clues.

- **Phoneme analysis.** Phoneme analysis is the use of the decoding process to analyse a word sequential into its sound components and to synthesise these sounds into a spoken word. Games to teach learners the letter–sound relations are always useful. It is, however, very important that these letter–sound relations are always related to the written text in words and sentences.
- **Structural analysis.** Structural analysis occurs when a word is analysed in syllables, such as word roots and suffixes. By singing and clapping the sound rhythm of the words, learners become aware of the syllables in them. They should also know the rules that the analysis of syllables are based upon. They may be asked to cut the words, written on pieces of paper, into syllables. Afterwards they should group together the same syllables of the different words. This makes them aware that different words may contain the same syllables. They should also have the opportunity to build new words with the syllables. High-frequency syllables may be learned on sight.
- **Contextual clues.** If learners do not understand what they are reading they will not be able to use contextual clues. By understanding the content of the text, readers are able to *guess* the meaning of a word that is unfamiliar, or too difficult to identify or analyse. This understanding also enables readers to read an unfamiliar word when they are familiar with some syllables in the word and with the sentence structures.

(ii) Understanding words and ideas

Learners who have some knowledge of the content of the text find it easier to understand because they can relate the words and sentences in the written text to their knowledge of the information. Therefore it is recommended that the content of the text be discussed with the learners when starting a new reading session.

VOCABULARY

The larger a learner's vocabulary, the easier it is for him to follow the content of a piece of written text. Learners' vocabulary can be improved by listening to stories and reports of actual events to which they can relate. It is also useful to read daily newspapers and magazines to them, as this will improve their vocabulary, general knowledge and language. Even young learners find such information interesting.

COMPREHENSION

- **Literal meaning and literal comprehension.** Reading games can be played. The learners may play a game where the instructions are written down and they have to read them and perform an action. Discussions between learners about the text are also useful.

Questions about the written text should also be asked. These questions should begin with words such as: *Who...? Where...? What ...?* Avoid questions that could be answered only with the words *yes* and *no*.

- **Inference.** Questions on indirect information that is not explicitly stated in the text should be asked, such as: *How do you think the friends are feeling while playing in the park? Why do you think the baby is not happy?*
- **Evaluation.** Discuss whether the information read in the text is *true* or *false* with the learners. Give them the opportunity to indicate why they think it cannot be true or why they think it is true.
- **Appreciation.** Ask the learners whether they enjoyed the story and which part they enjoyed most or found less interesting. Then ask them their reasons.

(iii) Oral reading

Fluent reading can be encouraged by allowing enough opportunities to read. If a learner is shy to read aloud in front of the rest of the class, give him a short piece of written text that he has to prepare beforehand. He may read out questions or instructions (prepared beforehand) that the rest of the class or certain learners should answer or execute. These sentences should be short and within the reading ability of the learner. Games

may also be played, like a “going shopping” game, or “visiting a restaurant” game and other reading games. By reading stories, poems and other information aloud, the learners become more aware of the correct phrasing and pronunciation. In group reading, omissions, repetitions, inversions or reversals, insertions, substitutions and word guessing can be excluded. Be aware, however, that poor readers sometimes just move their lips in a group reading situation and do not always gain by this method.

(c) Level 3: reading and study skills (Grade 4 and onwards)

(i) Dictionary skills

Older learners are able to use dictionary skills to help them to determine the meaning and pronunciation of words. Repeating the alphabetical order of the letters by means of songs, rhymes and other repetitive games can be useful. There are some learners who find it very hard to remember the alphabet. For these learners an alphabet written on a piece of paper should be available to check when they do not remember the order of the letters. When introducing learners to the dictionary, start with a very simple one. The teacher may even compile a class dictionary with the help of the learners or each learner may compile his own dictionary on a computer.

(ii) Study skills and learning

Good readers find it much easier to cope with study skills than poor ones do, therefore it is important to teach learners to use study methods such as the *brain map*, which lessens the amount of text to be read. It also sorts information into categories and puts the facts in an easy-to-remember order.

7.11.3 Written language support

When supporting learners in written language, all three aspects (essay, spelling and handwriting) should be attended to rather than a single one. Support in written language should be given within the whole or holistic language approach where all three the aspects of written language are simultaneously involved. Emphasis

should be on that aspect which the learner finds difficult.

(a) Writing an essay

(i) The cognitive component

By exposing learners to a variety of experiences such as outings, pictures, stories and reports, their general knowledge and vocabulary expand. Information on these experiences should be discussed while the learners are immersed in the experience. Learners are less interested if this is done afterwards, and some of the information is forgotten. During the experience, the learners make associations and draw comparisons, spot contrasts, analyse concepts, and synthesise and evaluate the information. This makes it easier for them to absorb the information and integrate it into their own world of experience (Dednam 1998: 114).

(ii) The linguistic component

The practice of correct language use through all learning areas in class should be attended to. The teacher’s example of using good language in class is of the utmost importance because it is often the only place where a large number of learners will hear the language in its purest form. Reading stories to the learners also gives them an illustration of the correct use of language.

(iii) The stylistic component

The learners should be aware of and understand the stylistic component of written language. They should master the constituents of letters, words and sentences. They should, for instance, know what a sentence is, and that it begins with a capital letter and ends with a full stop.

(b) Spelling

Teachers tend to assess spelling in terms of right or wrong. This discourages learners to experiment with written text and to write down their thoughts spontaneously. In order to exclude spelling errors, their sentences become rigid and they tend to keep them short or to write the same sentence structure repeatedly, such as: *I lay the table. I sit on the chair. I eat my lunch. I drink my tea.*

I wash the dishes. Therefore, learners should be allowed to make spelling mistakes.

Decisions to be made before considering a word as one that needs intensive attention

Before concentrating on the spelling errors, teachers should make the following decision on each specific spelling error:

- Is the word relevant in terms of the curriculum set for that particular grade?
- Is the word a high-frequency word for learners in that grade?
- Is the mistake rooted in the spelling structures already taught in that specific grade?

If an answer to any one of the above questions is *yes*, the teacher should explain the mistake and discuss the correct spelling, but if the answer is *no*, the teacher should rewrite the correct word and draw only the learner's attention to the correct spelling.

The following spelling components should be attended to if a learner experiences difficulty with them:

- Letter–sound relations and variations in letter–sound relations (e.g. *ea* in *read*, *hear*, *head*)
- Short and long vowels
- Consonant combinations
- Consonant–vowel combinations
- Word analysis and synthesis
- Spelling rules and variations in spelling rules
- Prefixes and suffixes
- Punctuation (e.g. “Peter, where do you go on Wednesdays?”)

(c) Handwriting

Handwriting contributes to the legibility of written text. Although the computer is gradually taking over this component, learners still need to master the art of writing letters and words legibly as computers are not always available.

Handwriting is the mechanical act of the writing process and therefore all components of writ-

ten language should be included in the writing session. When practising formal handwriting, learners tend to write slowly and neatly, but as soon as they have to write an essay or anything else they do not have the time to attend to the formation of each letter and their handwriting become untidy and often illegible.

In the initial school phase, the correct formation of letters as well as the letter–sound relations are taught to the learners at the same time. They then progress to writing the letters in words during writing sessions. Gradually the letter formation becomes automatic and the learners do not concentrate any more on the formation of each letter while writing. They mainly concentrate on the information they are writing down.

When teaching handwriting to a learner who experiences handwriting problems, the following aspects should be attended to:

- The ability to handle the writing apparatus and execute the formation of the letters correctly. Skilful eye–hand coordination is important for the correct formation of letters.
- Knowledge of the exact formation of the letters
- The direction in which the letters should be formed and the direction in which the letters and words should follow each other

The following guidelines may help to improve learners' handwriting and give a more tidy impression of the work:

- Words should be spaced uniformly.
- Learners should receive positive encouragement for each attempt at improvement in handwriting, even if it is only one word in a sentence or even a letter in a word.
- Sweaty hands cause dirty marks in books. Make sure learners wash their hands before each writing session. If their hands are sweaty, they should put a piece of paper under their hands.
- Learners should never be allowed to erase a mistake or error. They should make a neat cross next to the mistake or draw a neat line through it and write the correct word above the error or next to it where space is available. When learners are allowed to use an eraser

themselves, those with problems tend to erase every letter, word or even sentences repeatedly. This makes the page untidy and is a waste of time.

- The teacher should not make corrections in red ink as this discourages learners from trying to improve their handwriting and keeping their books tidy. A pencil or blue ink, which does not make such a contrast, should rather be used for these learners.

7.12 CONCLUSION

Language is the highest form of communication between the members of a species, and humans are the only species using spoken language for communication. Language problems cause problems with interrelationships and learning. Learners experiencing spoken language problems also find it difficult to excel in school. Reading and written language are two advanced forms of spo-

ken language and therefore most learners who experience problems in spoken language also experience problems in reading and written language. These problems hamper the learners' progress at school and limit their career opportunities.

Support in language problems should start as early as possible. A learner who is still experiencing such problems in the higher grades will increasingly lag behind in his schoolwork and the problems will become nearly unsolvable. Therefore it is important that teachers are aware of every learner's problem in any aspect of language. Teachers should be familiar with spoken language, reading and written language problems as well as methods and strategies of assessment and support for these problems. Motivated teachers intervene in all learning areas instead of waiting for a specially trained teacher to support the learners in overcoming their problems in specially arranged situations.

Choose a learner experiencing language problems in any of the grades from 2 to 6. Complete the following information on this learner.

1. General information on the learner

Name: _____
 Gender: _____
 Grade: _____
 Age: _____
 Home language: _____
 Lingua franca of the school: _____

[Why is the above information necessary?]

2. Strengths in language

Spoken language: _____

 Reading: _____

 Written language: _____

 Perception: _____

 Other aspects: _____

3. Language problems

3.1 Cause(s) of problem
 Determine the possible cause(s) of the learner's language problems (see paragraph 7.6)

3.2 Spoken language problems (see paragraph 7.8)

<i>General manifestation of spoken language problem (see paragraph 7.8.1)</i>	<i>Specific spoken language problems</i>	<i>Language dimension in which each problem occurs (see paragraph 7.8.2)</i>	<i>Subsection of language dimension in which the problem occurs</i>

Figure 7.4 Sample form for case study

3.3 Reading problems (see paragraph 7.9)

Use a piece of reading text suitable for the grade the learner is in. Determine his word identification level, comprehension level and overall reading level on this piece of text (see paragraph 7.9.1).

Reading level: _____

Write down the general manifestations of the learner's reading problems (see paragraph 7.9.2).

<i>Specific reading error</i>	<i>Specific reading component in which the error occurs (see paragraph 7.9.2.1)</i>	<i>Types of reading error</i>
.....		
.....		
.....		
.....		

3.4 Written language problems (see paragraph 7.10)

Write down the specific written language problems the learner manifests and indicate the component and subsection of each component in which each of the problems occurs.

<i>Specific written language error</i>	<i>Area in which the written language error occurs (see paragraph 7.10)</i>	<i>Types of written language error</i>
.....		
.....		
.....		
.....		

4. Learning support

Note: Always take the age and interest of the learner into consideration when assisting him in any aspect of language.

4.1 Spoken language support

Indicate the general support this learner needs in spoken language and communication (see paragraph 7.11.1)

General support in spoken language. _____

Figure 7.4 Continued

4.2 Reading support

Indicate the general support you would give the learner in reading (see paragraph 7.11.2)

General support in reading. _____

<i>Reading component (see paragraph 7.11.2.2)</i>	<i>Subsection in which the reading problem occurs</i>	<i>Reading support in each area (indicate how one would follow a holistic approach while supporting the learner in each area)</i>
.....
.....
.....

4.3 Written language support

Describe the support you would give the learner in the subcomponent of the areas of written language (see paragraph 7.11.3).

<i>Written language area</i>	<i>Specific written language error</i>	<i>Support in each area (indicate how one would follow a holistic approach while supporting the learner in each area)</i>
.....
.....
.....

Figure 7.4 Continued

Questions

1. Indicate how the language dimensions are related in spoken language, reading and written language.
2. Discuss the elements of written language and indicate how you would assist a learner to apply the linguistic component when writing an essay.
3. Describe briefly how you would support a learner to improve his ability to understand words and ideas in the intermediate school phase.

Bibliography

- Bratcher, S. 1997. *The learning-to-write process in elementary classrooms*.
- Dednam, A. 1998 *Teaching practice: learning difficulties* (only study guide for FDELPR-T). Pretoria: Unisa
- Dednam, A. 2000. Geskrewe taal. In Landsberg, E.I. & Dednam, A. *Leerondersteuning* (only study guide for OSN432-T). Pretoria: Unisa.
- Ekwall, E.E. & Shanker, J.L. 1989. *Teaching reading in the elementary school*, 2nd ed. Columbus: Merrill.
- Hammill, D.D. & Bartel, N.R. 1995. *Teaching students with learning and behavior problems: managing mild to moderate difficulties in resource and in inclusive settings*, 6th ed. Austin, TX: Pro-ed.
- Jaffre, J. 1997. From writing to orthography: the functions and limits of the notion. In Perfetti, C.A, Rieben, L. & Fayol, M. (Eds), *Learning to spell: research, theory, and practice across languages*. Mahwah, NJ: Lawrence Erlbaum, 3-20.
- Jalongo, M.R. 2000. *Early childhood: language arts*. Boston: Allyn & Bacon.
- Mariotti, A.S. & Homan, S.P. 2001. *Linking reading assessment to instruction: an application worktext for elementary classroom teachers*, 3rd ed. Mahwah, NJ: Lawrence Erlbaum.
- Mather, N. & Roberts R. 1995. *Informal assessment and instruction in written language: a practitioner's guide for students with learning disabilities*. New York: John Wiley & Sons.
- McEwan, E.K. 2002. *Teach them all to read: catching the kids who fall through the cracks*. Thousand Oaks, CA: Corwin Press.
- Mercer, C.D. 1992. *Students with learning disabilities*, 4th ed. New York: Merrill.
- Ormrod, J.E. 1998. *Educational psychology: developing learners*. Upper Saddle River, NJ: Prentice Hall.
- Perfetti, C.A. 1997. The psycholinguistics of spelling and reading. In Perfetti, C.A., Rieben, L. & Fayol, M. (Eds), *Learning to spell: research, theory and practice across languages*. Mahwah, NJ: Lawrence Erlbaum, 21-38.
- Pike, K., Compain, R. & Mumper, J. 1997. *An integrated approach to literacy*. New York: Longman.
- Richek, M.A., Caldwell, J.S., Jennings, J.H. & Lerner, J.W. 1996. *Reading problems: assessment and teaching strategies*, 2nd ed. Boston: Allyn & Bacon.
- Richek, M.A., Caldwell, J.S., Jennings, J.H. & Lerner, J.W. 2002. *Reading problems: assessment and teaching strategies*, 3rd ed. Boston: Allyn & Bacon.
- Sampson, M., Sampson M.B. & Van Allen R. 1995. *Pathways to literacy: process transactions*, 2nd ed. Fort Worth: Harcourt Brace.
- Shanker, J.L. & Ekwall, E.E. 1998. *Locating and correcting reading difficulties*, 7th ed. Upper Saddle River, NJ: Merrill.
- Stanovich, K.E. 1984. The interactive-compensatory model of reading: a confluence of developmental and educational psychology. In *Remedial and Special Education* 5(3), May/June: 11-18.
- Taylor, B., Harris, L.A., Pearson, P.D. & Garcia, C. 1995. *Reading difficulties: instruction and assessment*, 2nd ed. New York: McGraw-Hill.
- Tchudi, S. 1994. *Integrated language arts in the elementary school*. Belmont, CA: Wadsworth.
- Tompkins, G.E. 1997. *Literacy for the twenty-first century: a balanced approach*. Upper Saddle River, NJ: Merrill, an imprint of Prentice Hall.
- Tompkins, G.E. 1998. *Language arts: content and teaching strategies*, 4th ed. Upper Saddle River, NJ: Merrill, an imprint of Prentice Hall.
- Yule, G. 1996. *The study of language: an introduction*, 2nd ed. Cambridge: Cambridge University Press.

SECOND LANGUAGE DIFFICULTIES IN A SOUTH AFRICAN CONTEXT

8

NORMA NEL

Learning outcomes

After reading this chapter you should be able to

- ▶ explain who English second language (ESL) learners are
- ▶ understand the reasons for experiencing barriers to learning in ESL
- ▶ know how to identify and assess learners who experience difficulties with ESL
- ▶ offer support to learners regarding ESL.

Key terms

English second language (ESL) ♦ home language (mother tongue) ♦ language of learning and teaching (LoLT) ♦ bilingualism ♦ multilingualism ♦ code-switching ♦ thematic curriculum ♦ functional language communication

CASE STUDY

Mrs Dlamini is a head of department (HOD) in the intermediate phase at a township primary school. She teaches a multilingual Grade 4 class, and the language of learning and teaching (LoLT) is English. Mrs Dlamini believes that the learners need to think and talk in a language they know and therefore she encourages them to speak their home language in class with their classmates or with her (if she is able to understand them). She makes use of folk songs and folktales in order to nurture the different cultures. She creates opportunities for learners to integrate their new and past experiences by using the second language as a medium of expression. She makes use of a variety of meaningful and interesting cooperative learning activities and arranges the physical setting of the classroom in such a way that it

becomes a conversational English second language classroom designed to encourage talk and interaction between the learners and ultimately to produce a stimulating and experiential language-learning atmosphere. The learners are allowed to integrate their backgrounds, interests, strengths and prior knowledge of language with useful strategies in order to enhance second language acquisition and literacy.

Mrs Dlamini and the teachers in the intermediate phase do their weekly planning collaboratively, using a thematic focus. They consider the learning outcomes and assessment standards of the different learning areas and adopt an integrative approach to their planning and teaching, i.e. integrating the different learning areas and using different materials, resources and activities. They also make provision for learners experiencing barriers to learning such as those whose home language is not English. They seek ways to adapt the curriculum, and methods and strategies to accommodate all learners. With regard to the language learning area, they have adopted the whole-language approach where the learners are initially encouraged to use their second language as a tool to communicate their own experiences and ultimately to learn to speak, read and write in their second language.

The principal and staff at Mrs Dlamini's school make a concerted effort to communicate with the parents on a regular basis and to hold parents' evenings where they are informed about their children's progress and other important matters. Parents are also encouraged to become involved in school, community and cultural activities, and to cooperate with the governing body on issues such as school funds, policy making, networking with other organisations, and so on.

8.1 INTRODUCTION

In South African schools there are many learners who are taught through the medium of English, which is not their home language, and who are limited in their English proficiency. These learners include those whose parents have placed them from the beginning of their school careers in schools where English is the LoLT while they were brought up using their home language. Other learners have attended schools where they were taught in their home language but who, out of choice or uncontrollable circumstances, attend schools where the LoLT is English. Learners who are immigrants from foreign countries where the official language is not English may make up the last group. Because the curriculum is in English, they move into bilingualism. They are therefore referred to as English second language (ESL) learners (Johnson 1995: 3). According to Ramírez (Freeman & Freeman 1998: 229), it takes more than six years to develop proficiency in English when English is the second language of learning.

In South Africa where there are 11 official languages, of which English is the main language of learning and teaching in most of the schools, teachers in general are not adequately trained and equipped to cater specifically for the needs of learners learning in their second, third or even fourth language. This could be ascribed to inadequate provision of ESL learning and teaching in their training as teachers. Other contributing factors could be the introduction of outcomes-based education (OBE) and teaching a diversity of learners in their classes. It has therefore become essential that teachers equip themselves with the necessary skills to enable them to teach learners coming from diverse backgrounds and home languages. Teachers need to realise that not all learn-

ers share the same cultural background, converse in the same home language or have the same pre-school experiences, and therefore the needs of multilingual learners are diverse and need to be accommodated. The majority of teachers are not prepared for this challenging task and painful change.

It is inevitable that all teachers need to have a basic knowledge of how a second language is learned and how to instruct learners who have not acquired the ability to use and understand English. They need to understand how the dynamics of classroom communication influences the perceptions and participation in classroom activities of ESL learners. They should be able to offer the learners opportunities to interact in authentic ways and to use the language to communicate. This will enable them to monitor and adjust the patterns of the classroom communication in order to create an environment which is conducive to classroom learning and ESL acquisition (Johnson 1995: 3). The main aim of this chapter is to provide primary school teachers with an overall view of and guidelines for English second language teaching and learning.

ACTIVITY

1. How do you envisage Mrs Dlamini adapting the curriculum in such a way that she will be able to cater for the needs of all the learners in her multilingual classroom?
2. How does OBE make provision for the learners whose home language is other than English in Mrs Dlamini's classroom?

8.2 ENGLISH SECOND LANGUAGE (ESL)

Although there are 11 official languages in South Africa and the Constitution makes provision for the language rights of all citizens, the official language in most of the schools is English.

Garner (1990: 2) explains that learners who come from different language backgrounds and need to learn English in order to follow the English-medium school curriculum are referred to as "English second language learners" (ESL learners) as English is not their mother tongue. On the other hand, Freeman and Freeman (1998: xv) are

of the opinion that to use terms such as “English second language learners” is labelling these learners and, for them, the term “English language learners” is more acceptable. This term includes learners whose home language is English as well as those whose home language is not English but who are attending schools where the LoLT is English. For the sake of clarity we will refer to “ESL learners” as the focus in this chapter is mainly on the difficulties ESL learners experience in our schools as well as the support teachers may provide to improve these learners’ English.

The majority of South Africans speak at least two official languages; however, English may not be one of them. For many learners in South African schools, English is learned as a second or even third language even though it is the LoLT in the majority of classrooms and schools. Although, according to Setati et al. (2002: 73), ESL learners may have the advantage that English is spoken in their immediate environment and that this exposes them to many opportunities to learn it (e.g. from television and newspapers), this is mainly the case in urban areas in South Africa. In rural areas learners are hardly exposed to English outside the classroom and thus their opportunities to learn it are extremely limited.

Setati et al. (2002: 76) express concern regarding the challenges educational practices face in teaching and learning in English as second language, namely

- that English material and its political power has to be dealt with
- that English needs to be acquired as early as possible without serious consideration of maintaining the first language
- the inclusion of other languages beyond English
- that multilingual teaching (teaching in more than two languages) needs to be supported with appropriate materials and in-service training.

8.2.1 Difficulties in ESL learning

Second language learners acquire talking and communicating abilities differently to first language learners. When they enter school their lin-

guistic behaviour and communicative styles are not appreciated and not understood and thus learners experience discontinuity between the home and the school. There are degrees of difference in learners’ linguistic and cultural backgrounds, such as cultural differences which existed before the population came into contact with the new culture. There are also differences where two populations have been in contact with one another for a considerable period. The learner’s knowledge, use of language and the broader aspects of the socio-cultural context all cause discontinuity between the home and the school (Johnson 1995: 65–66).

Learners learning in ESL usually begin literacy instruction in their first language. Academic and linguistic skills which have been acquired in the first language can easily be transferred to the second language and fluency in the first language shortcuts the normal developmental process in the second language. It is thus very important that teachers encourage the use of the learners’ primary language skills and allow them to experience the normal linguistic developmental milestones. Forcing learners to learn English too early can result in their not speaking, reading or writing their first or second language well. Learners who experience prolonged exposure to their first language strengthen the foundation from which the second language is acquired (Lapp et al. 2001: 4).

Freeman and Freeman (1998: 192; 223) state that learners who speak their first language in an ESL context only often lose their first language (which is a great loss to society) and become monolingual English speakers. The first language develops normally until such time as the child starts learning the second language (Frederickson & Cline 2002: 293–295). Learners are inclined to use the second language increasingly in their daily lives and at school, which stifles first language development and even leads to the loss of some language.

Another problem which is a cause for concern is that the phonological and linguistic demands of the two languages differ, which causes difficulties that would not have occurred if the child had been exposed to the first language only. Emotional and social difficulties are secondary. The child develops language skills adequately but is unable

to use them because of these difficulties. Such children resort to selective mutism which generally develops round the age of 3 to 5 years when the transition from their homes to organisational life, such as early childhood development centres or formal school, takes place. They are able to speak in some situations but refuse to speak in others and develop effective non-verbal communication strategies (Frederickson & Cline 2002: 296–297).

According to Rost (2001: 7–13) ESL learners find it difficult to listen to English because the phonological system, phonotactic rules (sound sequences to make up syllables) as well as tone melodies such as high, low, rising and falling tones may differ from the first language. This also influences their speaking and reading. Where ESL learners read well in their first language, they are able to generalise their reading abilities across languages. However, where phonic instruction takes place there is often a mismatch between the ESL learner's phonological system of English and received pronunciation on which phonic practice is based. When the learner uses the three-cue system, namely *graphophonic*, *syntactic* and *semantic*, ESL learners are inclined to skip non-essential words and guess at words by using context. Sound/letter relations between English and the first language may differ as well as letter combinations, and therefore different ways of decoding are used. Because of a lack of vocabulary they find it difficult to guess what strange words might be. The content of the text may not be in their frame of reference (culturally) and they find it difficult to comprehend. They may read phonetically, for example *bouquet* is read as *bouket*. They find it difficult to break up words into syllables and mispronounce words such as *the*, which is read as *de* or *ze*. Because of these reading errors, their comprehension is poor.

With reference to writing, Dednam (1997: 135) gives examples of ESL problems in composition, spelling and handwriting. ESL learners usually make the same errors as first language learners, such as reversals, and find vowels, vowel combinations and consonant combinations (*sh*; *ch*) difficult. However, the majority of languages spoken in South Africa are phonetic. When comparing words in English we find inconsistencies, for

example *pea* and *tree*, and many words need to be learned on sight, such as *the*, as there are no spelling rules which can be applied. The learners also find it difficult to apply closure to words such as *cat* in *The big fat ca[t]*, and do not use capital letters correctly. They are unable to apply spelling rules, for example to add the *e* to *fat* to make *fate*. There are many exceptions to the rules which learners need to know and they are inclined to spell the way they do in their first language. They spell many words in different ways, such as *pretti* and *prety*. Where the same letters/letter combinations represent more than one sound (e.g. the *-ly* in *silly* and *rely*) they become confused, as they do in the use of the apostrophe in the singular and plural possessive forms (*teacher's* and *teachers'*), and the use of the articles *a* and *an*.

ACTIVITY

What are the advantages and disadvantages of exposing children to first and second languages simultaneously? Make use of a case study as an example.

According to Frederickson and Cline (2002: 271), teachers feel that teaching standard English to non-standard English-speaking learners is a way of learning more effectively and progressing in the real world. The learners, however, are of the opinion that it is “talking white” and denying them their heritage. The authors conclude that it “... is a form of cultural subjugation”. Weideman (2002: 39) explains that there may be a discrepancy between what learners expect from language learning and how teachers teach it. Teachers may use methods and approaches which promote fluency and communication as opposed to conventional grammar teaching, which may be in contrast with the learners' expectations and ultimately lead to resistance to instructional practices.

The language difficulties that ESL learners experience can also be ascribed to the fact that they may live in a monolingual society (especially in the rural areas) where they hear only their first language. They find it difficult to communicate with people and experience limited support in learning the second language (Frederickson & Cline 2002: 292).

A teacher in Cape Town had a new learner from Limpopo province who was Venda speaking and spoke no English. The teacher could not speak Venda, but rather than allowing the learner to languish, she chose to allow him to teach the class enough of his mother tongue so that they could all communicate a little bit. The learners got excited about discovering a new language. This led to the teacher doing a unit on Limpopo, complete with a wall-size relief mural of the province. The end result was that the Venda-speaking learner was treated as a valued part of the class. He was able to contribute the richness of his culture while learning about his new home (adapted from Freeman & Freeman 1992: 73).

Think about alternative ways of accommodating learners in a similar situation in your class, taking into consideration the home language, the level of academic development, etc.

Other language difficulties ESL learners may experience are as follows:

- Learners' first language may develop normally until they learn the second language, and then there is an interruption and the first language suffers. Often teachers then identify these learners as having a language impairment as they are having difficulties in both languages (Fredrickson & Cline 2002: 294).
- Teachers who are monolingual usually have mixed feelings about learners communicating with their peers in another language.
- Teachers are unfamiliar with the different languages and their structures and do not understand the interference from the first language, especially word order mistakes and pronunciation. According to Adler and Reed (2002: 130) many teachers in South Africa have a limited subject and pedagogic knowledge base. This is especially true of teachers in the rural areas who have little exposure in the school and the community to a wide range of lexis, syntax, reg-

isters and genres in English. Thus they find it difficult to reflect on their practice.

- Interruptions in the learner's life, for example moving from one province or city to another, may result in learning backlogs.
- The attitudes of the parents, the school and the community towards learning English may be negative, thus they do not encourage the children to learn English.

Important questions that need to be asked which could shed light on barriers to learning that ESL learners may experience are as follows:

- How does the home language differ from the LoLT (i.e. the phonological and linguistic demands of each language)?
- What language does the ESL learner use to speak to his parents, siblings, other family members and friends?
- Is the ESL learner learning any other language after school over and above the LoLT, such as extra classes in an Arabic language?
- Does the learner have access to first language support at school?
- Are the learner's teachers monolingual or bilingual?
- At what age was the learner exposed to English? Did the learner reach the language developmental milestones?
- Is the learner motivated to become proficient in English and maintain proficiency in his home language?

What are the difficulties and barriers that the ESL learners and Mrs Dlamini experience in the classroom?

8.3 ASSESSMENT OF ESL LEARNERS

Brindley (2001: 131–138) distinguishes between *proficiency assessment* and *assessment of achievement*. **Proficiency assessment** is used to determine the general language abilities which a learner has acquired. Standardised language-proficiency tests are usually used in this case. **Assessment**

of **achievement** is used to determine what the learner has learned in a curriculum. This is usually based on the specific content of the curriculum.

According to Krouse (1994: 355–362) the following communicational skills are to be assessed, which include listening, speaking, reading and writing:

- **Listening skill** – phonic discrimination, understanding a passage and yes/no-type answers
- **Speaking skill** – pronunciation, intonation, directed response, rejoinders (expressions of social courtesy), stylised idiomatic expression, conversational responses, directions, descriptions and narrations
- **Reading skill** – oral reading and comprehension
- **Verse speaking**
- **Writing** – completing sentences, creative writing
- **Spelling**
- **Language**

Frederickson and Cline (2002: 180–182) suggest that when a curriculum-based assessment is envisaged, it is important to determine which tasks the learner is able to succeed in doing and which not. In this way one is able to get an idea of the learner's strengths and weaknesses in terms of the cognitive demand of that curriculum area, as well as the level of contextual support needed in different situations. Classroom tasks can be differentiated, and particular modifications by level or method can be done in order for ESL learners to access the curriculum. It is necessary for the teacher to be clear about the outcomes of the lesson and have knowledge of the learner's background and try to match the task with the learner's learning style, proficiency in ESL and interests. The teacher should not have differentiated stereotypical expectations based on ethnicity, but rather be sensitive to the individual differences which are associated with linguistic and cultural diversity. The teacher should try to ascertain whether the learner can master tasks when receiving greater contextual support in developing English proficiency. Second language learners may be able to cope with cognitively complex tasks but

may not have acquired the language skills to master them.

Frederickson and Cline (2002: 183) pose a crucial question: When are we looking at learning needs or language needs? If it is erroneously decided that the learner has a learning need, this can be detrimental to his learning process as the learner may receive non-challenging learning experiences and be subjected to low expectations. On the other hand if the learner receives a language support programme of which the pace is too fast and the learning steps are too large, this in turn can also be detrimental. Subsequent assessment will continue to reflect language needs when in actual fact the learner has both learning and language difficulties. Bilingual learners who have learning needs will also have language needs as their general learning difficulties will affect the language of instruction. A curriculum-based assessment can be used to structure diverse assessment. One needs to determine which tasks the learner can succeed at and which not. For those the learner is not able to do, the level of contextual support needs to be increased. This would involve increasing non-verbal cues in order to support the verbal message and to supplement the language of tuition with the learner's home language. Increased contextual embedding will not only assist the learner to succeed, but will make the task easier.

It needs to be determined what exposure to the languages the learners have had, how they use them and their proficiency. The information gathered will form the basis for further assessment of the difficulties in English as a second language and the planning of additional language support. Once the learner's language background has been gathered (a list of questions can be used) and it is evident that there are problems, one needs to determine the learner's use of language in the following ways:

- Formal tests in English as a second language
- Audio or video recording of the learner's language
- Recording of language use in everyday situations
- Questionnaires or structured interviews with caregivers

- Meetings and interviews
- Observation and recording of the use of language in natural settings
- Drawing on observations of those who live and work with the learner (Frederickson & Cline 2002: 278–284)

ACTIVITY

Draw up a teaching–learning session, write assessment activities for this session and indicate how many learners you will be assessing.

8.4 SUPPORT FOR ENGLISH SECOND LANGUAGE LEARNERS

According to the *Revised National Curriculum Statement Grades R–9 Policy: Languages: English – Second Additional Language* (2002: 4), learners need to become competent in their additional language and at the same time maintain and develop their home language. The home language should be used for learning and teaching at all times. It is stated that where learners' home language is other than the language of learning and teaching, the LoLT should be introduced in Grade 1. These learners should receive special assistance and supplementary learning of the LoLT. This needs to continue until the learner can learn effectively in the LoLT.

It is important for ESL learners to develop a love for and therefore enjoyment of listening, speaking, reading and writing English and concentrate on what they do know and can do, rather than on what they do not know and cannot do. Children learn to draw on the strategies and skills which they have learnt to use in their first language. They look for sounds, gestures and actions of speakers to identify words as they would in their first language. This trial and error character of the children's attempts as well as responses from competent users in their first language is valuable for learning the second language. Strategies used to learn the first language can be used when learning a second language, especially if the circumstances are similar to those of the first. Learners should be granted the opportunity to experiment with language by making mistakes and learning from them.

ACTIVITY

- What is the role of the parents in their child's acquisition of the second language?
- What is the role of the teacher in his learners' acquisition of the second language?

It is necessary that children have time to adjust to the second language environment and to develop friendly relations with others in the group. They need to feel secure and at home in this environment and to trust their teachers. Teachers need to encourage a climate of acceptance of these learners by their peers by explaining that the multilingual learners need to learn in their second language and that they also need to be proud of their home language. It is important for teachers to treat learners as individuals, to encourage them to use their home language, and to learn the learners' language and about their culture. Making use of the services of a bilingual speaker with a similar cultural background as the ESL learner and creating opportunities for him to participate in extramural activities will benefit the learner tremendously. Being able to use his first language with others provides support and confidence in interacting with them, learning takes place more quickly and progress in learning a second language is sustained. It is, however, imperative that the learners be immersed in experiences in which they are able to use the second language. They need to see and hear it being used.

The ways in which parents get their children to use their first language must be used by teachers to get learners to use the second language. These would include pleasurable experiences where they speak more slowly, articulate carefully, and use gestures, facial expressions and tone of voice. In this way they become familiar with sounds, rhythm and stress. Frequent interaction with the learners will enable teachers to know whether the learners are ready to proceed; for example, are they attempting to use a new element of the second language, which is an indication that they are adjusting to the new environment and attuning themselves to the second language. This adjustment will vary from child to child (Tough 1995: 219–222).

All the learners must be involved at all times and the teacher must look at all the learners in the class. This prevents learners from feeling disliked or ignored and enables the teacher to know what is happening in the class. By making use of questions, for example *What did the horse do?* and looking around the class, all learners will make an effort to think about the question. The learners should be doing most of the talking and be encouraged at all times to use the grammar which they have learned. Where learners make mistakes they ought to be corrected in a gentle way by using the correct word and not by being interrupted. Mistakes can be written down and at the end of the conversation or lesson the teacher and the learners can go over them. The teacher must know and understand the grammar she intends teaching. It is also important that when the teacher writes on the board or overhead projector, the work is neatly and logically set out.

Diaz-Rico and Weed (1995: 74–83) have the following to say about language contextualisation:

- The conversation is focused on the task at hand (e.g. a learning activity like experimenting, cooperative projects such as plays and field trips).
- Vocabulary is used where both the teacher and the learners negotiate meaning.
- The teacher makes use of phrases, vocabulary and gestures to expand the learners' output. The teachers adapt their speech by making use of exact pronunciation, shorter sentences, basic vocabulary, longer pauses and exaggerated stress, and by speaking more slowly.
- The teacher may elaborate by using repetition, paraphrasing and making use of rhetorical markers. This would involve organisational repetition; for example, the teacher can say: *In this period we are going to* or *Who can tell me what we did yesterday?* These questions can be asked during the rest of the day in different lessons.
- The teacher can make use of visual and hands-on activities such as models, computers and so on, in order for language to be made more comprehensible.
- It is also important for the teacher to pause during teaching and ask if the learners under-

stand or how they are going to begin their work, or ask a learner to repeat the instruction in his own words.

- When learners make a mistake it is necessary for a teacher to concentrate on fluency instead of accuracy at the beginning and therefore the teacher must speak and model the correct language. Where errors are made regularly the teacher can either discuss them with all the learners or in a small group (those who make the same errors) or individually.

8.4.1 Second language learning in a multicultural classroom

Ernst and Richard (1995: 321) emphasise the importance of the ESL classroom setting. They offer suggestions such as the following to address the needs of the ESL learners:

- There should be artefacts from different cultures, world maps, reading materials, bulletin boards, environmental prints, signs and labels, pictures, posters, photographs of learners from different cultures, flags and dictionaries in a variety of languages.
- The classroom can be divided into three centres for writing, computer and listening activities based on various topics for a limited time (week/month) and learners can rotate. These activities can include sharing books, conversations, art projects, thinking and writing activities. Volunteers such as a parent, grandparent or student can assist.
- Plenty of scrap paper, headphones, tape recorders, a television set and a video recorder are useful to have in the classroom.

The diversity of the class population should be considered a strength as the learners have many talents and are motivated to learn. However, they do also have many needs and are greatly challenged when having to learn in a second language. It is therefore important that teachers know how a second language is acquired and how to instruct learners who do not understand or know how to use English.

When learners are working in cooperative groups, code switching should be permissible. The learners discuss the report-back in their own

language with their peers and the report-back itself is then done in English where the learners will be able to speak and write it. This technique should lead to more and more usage of English and is a way of furthering the advancement of multilingualism. This in turn will lead to the development and value of primary languages, cultures and additional languages in South Africa and internationally (Wessels & Van den Berg 1998: 13–16).

It is of utmost importance that learners make assumptions, deductions and hypotheses about how the language works and then try it out, in a similar way to that of a young child learning the home language. It is therefore crucial that the teacher has a positive and supportive attitude towards the learners' home language and culture and is sensitive to how different languages express ideas. The teacher should at all times shape English to accommodate all learners. If the teacher has learned a second language, so much better as he will have an understanding of the process of learning the second language and how languages differ. The teacher should also be aware of how English differs from the learners' home language. Many languages' alphabets, writing conventions and body language differ from English, and this can be offensive to some learners as they may misinterpret some of these messages (Garner 1990: 2).

Where the level of proficiency is varied in a class, the teacher can ask difficult questions of those learners who are at a higher level and ask the same questions again later on of those who have difficulty. Learners need to teach each other and those who know more should talk to those who are not as advanced. They should be encouraged to work on their English outside the classroom. Where possible the teacher needs to deal with individual cases in order to find out what the source of any problem is.

For many learners who have limited English proficiency, assemblies are a place where opportunities are provided for "... affirmations of a valuing of difference in a multicultural society" (Corbett 2001: 63–64). This is a display of respect for other minority languages and the ethos of inclusion is revealed where awareness is regarded as valuable. Recognition of learners' value systems,

experiences and cultural norms is to the learners' advantage and it is the school's responsibility to contribute to the learners' "cultural capital" (Corbett 2001: 63–64).

Curricular and instructional adaptations should be designed to facilitate the social and instructional participation in the classroom activities. Socialisation is not enough as learners also need the opportunity to make progress towards specific learning outcomes. These adaptations should deviate as little as possible from the learning outcomes but still the learner must benefit by the activity (Corbett 2001: 2–6).

It is important to make use of a thematic curriculum as this helps the learners to make a connection between other learning areas outside the school environment, promotes the acquisition of problem-solving skills and provides repeated practice. Learners learn about the differences and similarities in culture, race, etc. which supports respect and understanding of group and individual differences (Janney & Snell 2000: 10).

The following practical examples are very useful:

- A lesson plan is needed where the outcome of the lesson plays a vital role in motivating the learner. Outcomes and tasks must be set which the majority of learners can achieve. Teachers must bear in mind that all curricular activities are language based. The aids, the vocabulary, comprehension and questions, practice activities and free activities must be well set out. Well-prepared teachers will be confident in their teaching. Teachers need to consider the input (vocabulary and structure) and skills (*receptive* – listening, reading; and *productive* – writing, speaking) of learners when planning a lesson. It is also necessary to consider the learners' needs and what they want to do, and to offer fun activities as well. A **lesson plan** should reflect the following:
 - Learning area, learning area integration, learning outcome, assessment standard
 - Activity, teaching method, learner activity, resources and time-frame
 - Curriculum adaptations, adapted teaching method, adapted learner activity, adapted resources and adapted time-frame

- Assessment activity, assessment method, assessment techniques, resources and time-frame
- Adapted assessment activity, adapted assessment method, adapted assessment techniques, adapted resources and adapted time-frame
- When teaching language, the teacher should allow the lesson to progress from teaching key vocabulary and language patterns to dialogue on tape or video or in a textbook. The learners should then be given an opportunity to practice the dialogue and ultimately to use the new language in discussions, reading, writing and role-play. New vocabulary should be introduced at the beginning of the theme.
- Teacher talk time should be minimised. It is important that as many learners say as much as possible and therefore the teacher must offer as many interesting topics as possible (real-life situation). Before topics are discussed in class, the teacher must first present the task by using the more advanced learners to demonstrate it. The teacher's main task initially is to interpret the spoken word for the learner. It would be a good idea for the teacher first to talk to the learners by asking them questions about their own experiences, to which they know the answers. This could be done by making use of accompanying pictures or reading titles. In addition, a tape can be used – the learners can read the text and can then give a verbal account. The next topic can be done in the same way, but this time in groups or pairs.
- Instead of explaining, rather ask questions which elicit short answers. Asking questions is one way to get the learners' attention. The question should be asked in general as all the learners will attempt to think about the question. Questions should be asked randomly, not by starting at one end of the class and ending at the other side. This causes learners to relax or resort to other behaviour once they have had their turn while those who have not been asked yet can work out the answers. Learners should be encouraged to communicate with one another as soon as possible by working in pairs e.g. asking one another's name, where they come

from, etc. In this way the teacher can determine at which level the learners are functioning and will be in a position to note common mistakes which need to be worked on.

- Teachers should always have a dictionary and grammar book available for those times when learners ask questions which are difficult to answer or where the teacher does not know the answer.
- Teachers should make a point of learning the learners' names and using them as soon as possible by having the learners use name tags.
- Teachers should concentrate on writing clearly on the board and setting the work out logically.

ACTIVITY

What methods, strategies and activities do you think Mrs Dlamini used in her multilingual classroom to ensure the use of a second language as a medium of expression and ultimately as a language of learning and teaching?

Wessels and Van den Berg (1998: 17–41) suggest the following ways to establish a learner-centred classroom:

- **Using play.** Play allows learners to communicate without having inhibitions. Play gives learners the opportunity to use new words, to express thoughts and ideas, and to become actively involved in the learning situation where their social skills improve as they cooperate with one another. They begin to learn the basic skills of listening, reading, speaking and writing through play activities. The materials used and the type of activities in the various phases will determine at which level the language skills are practised; for example, in the foundation phase words and sentences are repeated, pictures, actions and dramatisations are used, and so forth.
- **Using short grammar explanations.** The use of this technique will depend on the level at which the learner is functioning. If learners are able to define and explain rules, for example using nouns correctly in spoken and written language, it will increase their talk time.
- **Using wait time.** After a question has been

asked it is necessary to give the learner enough time to think about the answer.

- **Accepting replies.** When learners do give incorrect answers or make mistakes they should be given the opportunity to correct themselves, instead of the teacher always correcting them.
- **Allowing preparation time.** Learners should be allowed enough time to prepare activities as this will produce good results and make topical conversation relevant.
- **Designing projects.** Projects facilitate pair and group work. Before the learners attempt to do the project they must be clear about what is expected of them and be given an outline which they can follow. It is important that they know where and how to find information. The learners are then instructed to plan carefully in their groups and to decide the different responsibilities that each participant will have e.g. scribe, etc. They need to know where and how to obtain the information.

8.4.2 Cooperative learning groups

In learner-centred ESL classrooms where group work is done, learners are able to explore ideas, promote communicative competence and develop literacy. Learners are able to speak and justify their point of view. They are also exposed to new ideas and approaches. By means of discussion, questioning, organisation and application their comprehension, retention of important concepts, attitudes and interpersonal relationships improve. However, learners are not all enthusiastic about working in groups and therefore teachers need to understand their attitudes toward group work. Many learners are used to teacher-centred approaches where the teacher transfers knowledge and learners record, memorise and recall it. Teachers need to consider the learners' classroom working preferences, which is sometimes to work on their own, and that they need to grasp the purpose and procedures of that required task. It is important that group work be used for all learners to learn successfully and this can be done by structuring the group activities in such a way that all the learners' learning-style needs are accommodated. It is therefore necessary for teachers to have a knowledge of learners' strengths and previ-

ous learning experiences in order to prepare various activities and to keep them involved in new tasks. By simply asking learners to complete the following two questions, one is able to determine their learning preferences:

I find group work to be more enjoyable and helpful when ... because...

I find group work to be less enjoyable and helpful when ... because...

(Kinsella 1996: 24–30)

Cooperative learning activities include listening, telling, sharing, discussing, arguing, convincing, persuading, enquiring, teaching, explaining, informing, etc. (Wessels & Van den Berg 1998: 28). These activities can take place using different cooperative learning techniques such as the following:

- **Buzz groups** (three to four learners). The activities are task-centred where discussion takes place in order to answer a question, etc.
- **Brainstorming.** This technique is used to elicit many creative ideas. The learners must understand what brainstorming is and the topic must be clearly stated. The learners must know what is expected of them and a scribe should be appointed to write down ideas. There should be a time limit.
- **Jigsaw activities.** Learners are divided into base groups which all need to do the same task. This task is divided into sub-tasks and each member of the group does a sub-task. All the learners from the different groups who worked on the same sub-task are then grouped together to work on the task. Once the time has expired the learners return to their base groups and teach them. A discussion with all the learners in the class then follows.

ACTIVITY

- First read paragraph 4.3 (in Chapter 4) on cooperative learning. Pay attention to the requirements for cooperative learning, roles for each learner in the group, etc.
- Plan a lesson for Mrs Dlamini where group work, peer teaching, varied activities, and materials and resources feature.

8.4.3 Teaching and learning styles

It is important for teachers to be aware of the different learning styles and potential of the learners in the class. Some learners learn the language phrases and expressions orally very quickly while others need explanations and also need them to be written down. The teacher should endeavour to offer a balance between oral and written work, carefully controlled and authentic language, and demonstration and explanation (Meakin 1990: 16–17).

The advantage of mixing teaching and learning styles is that learners who learn better in one way than another have greater opportunities where group work encourages the maximisation of interests, experiences and skills. The learners teach and guide one another as they learn from the teacher and their peers. An innovative teacher needs to be reflective and committed in order to try out new methods and to get the learners to assess the value thereof as this helps the teacher to find out what works for the different learners. It is necessary for a school to be committed in using a wide range of practices in order to meet the needs of all learners. There is the question: is withdrawal for special support part of an inclusive education? To answer this question one must consider the availability of diverse teaching and learning styles that will cater for individual needs, which is one of the alternatives for those learners who do not cope in a whole-class activity (Corbett 2001: 56–61).

8.4.4 Different teaching approaches

8.4.4.1 The communicative approach and other methods

The crux of the communicative approach is to negotiate for meaning where the teacher and the learners work together to arrive at meaningful, shared knowledge. The teacher guides and organises resources and sets up procedures and activities. The learners, on the other hand, need to take responsibility for their own learning, sharing it with their peers and the teacher. The learners can select and organise the curriculum content. They work together using functional language communication. Initially learners need to know how to gain their basic needs using basic interpersonal

communication skills for everyday use. Eventually learners need to develop academic language in order to respond to the teacher and to cooperate with classmates when doing projects, and to use resources to express themselves verbally and in writing. The teacher who uses the communicative approach needs to focus on content by making use of language forms and structures. Listening comprehension is the most important aspect of language for beginners, therefore comprehensible input is of utmost importance.

Total physical response (TPR), association of words with people and objects in the immediate environment, and the use of pictures will help with listening comprehension skills. Asher (in Diaz-Rico & Weed 1995: 84–89) identified three elements of TPR, namely that *listening precedes speaking, understanding by means of body movement and never forcing speaking*. The teacher gives a command while modelling actions and the learner follows. The teacher repeats this process until the learner is able to perform adequately. Eventually the teacher performs less and the group and then the individuals respond to the teacher's command alone. Commands are gradually increased. Commands are also used to introduce reading and writing; for example the word “stand” is written on the board and the teacher gestures to the learner to stand.

Content-based ESL, where subject matter content is used, can take place at the same time the learner is learning the basic second language. Total physical response is an excellent way to reduce anxiety. In cooperative learning groups, learners can act the role of the teacher and give commands and ask questions. New vocabulary is taught and learners demonstrate their understanding by means of actions. They speak when they are ready. The game “Simple Simon says” can be played – the learners only respond if the command is preceded by “Simon says”.

ACTIVITY

Mrs Dlamini needs to convince her colleagues to make use of the communicative approach in addition to other teaching approaches. How would you advise her to go about doing it?

8.4.4.2 The whole language approach

Whole language teachers teach their learners all the kinds of language which is rich in content, relevant, interesting and meaningful right from the beginning. Language and literacy learning experiences can be integrated in order for learners to have maximum opportunity to engage in conversation. It is a stimulating and experiential language learning lesson which allows the learners to integrate their backgrounds, interests, strengths and prior knowledge of English (Ernst & Richard 1995: 321). Learners are taught vocabulary, simple sentences and strategies to read and work with content learning areas such as geography. The learners are involved in thematic lessons which cater for their present needs as well as for academic purposes, and they choose the topics. This enables the teacher to contextualise language and to teach language as well as content (Freeman & Freeman 1992: 90). It not necessary to use literature as other instructional materials may also be used, such as signs, cereal boxes and T-shirts (Goodman in Diaz-Rico & Weed 1995: 101).

Predictable stories or pattern books can also be used. In a group, a large book with an enlarged format can be used. By looking at the cover of the book the learners are asked to predict what is going to happen in the story. They become interested and it involves their knowledge. The teacher reads the story and the learners listen without interrupting. The learners read together and they share the story, which makes them feel that they are able to read the book on their own later on. The learners then discuss the story in groups. The stories in the books have patterned language, for example repetition and rhyme. By making use of role-play, writing new endings and puppet shows, learners can expand on their reading and they have an opportunity to integrate other skills. The learners become able to write their own stories (Diaz-Rico & Weed 1995: 102).

Freeman and Freeman (1992: 112) explain whole language principles as follows:

- Learning takes place from the whole to the part.
- The classes are learner-centred.
- Learning should be meaningful and purposeful.
- Social interaction takes place while learning.

- The learners need input from all four modes.
- Having faith in the learner encourages learning.

Learning second language through content implies a long-term plan and this can be done by the teacher and the learners. An example of a whole language content lesson follows:

Activity 1

The teacher asks learners to think about a topic, for example: "What do you spend money on?" The learners list ideas and share them with a peer. The teacher asks the pairs to tell her what they wrote. This is written on the board in categories (the learners help to categorise) by making use of symbols for each category, such as #*medicine*, #*doctor* and **groceries*, **rice*, etc. This helps the learners with vocabulary. The teacher is able to assess the learners' knowledge as they generate their own vocabulary. Advanced learners provide vocabulary which beginners are not acquainted with and hence they learn from one another. Beginners can use labelled pictures to categorise.

Activity 2

On the basis of the learners' responses to the question asked in Activity 1, further questions based on a category such as food are asked. Learners then supply the names of shops and give reasons for shopping there. Shops' names and reasons are written on the board.

Activity 3

A further question is asked, for example: "What do smart shoppers do?" In small groups the learners discuss and write down a list which they share with the whole class. A composite list is then written on the board.

Activity 4

Each group receives a copy of a particular magazine (rich with pictures and information). The learners scan the magazine, pick an article and write a brief report which provides answers to questions.

Activity 5

Small groups choose a product they would like to research. They conduct the research and then give a written or oral report to the rest of the class. They can conduct interviews outside the classroom, study real products and read advertisements.

This lesson can be extended over a few days or weeks and can be used in different grades. It is important to note that one begins with what learners already know. One then encourages them to explore what they want to know (Freeman & Freeman 1992: 47; 92; 95).

Themes are used such as “house”, “school” and so forth, as this creates opportunities for learners to use and develop oral language, reading and writing. For those learners coming from rural areas books such as *City Mouse Country Mouse* can be used as a variety of projects can be based on the story. For example, they can draw maps of the city and discuss how to locate places in the city and add street signs. These tasks can be displayed in the class or any other part of the school. They can also draw or write about their home towns and compare urban and rural settings.

8.4.5 Planning a second language lesson according to RNCS outcomes

According to the *Revised National Curriculum Statement (RNCS) Grades R–9 (Schools) Policy for Languages: English – Second Additional Language*, each of the following sections will be introduced by the outcome for that specific aspect of language.

8.4.5.1 Listening and speaking

Outcome

1. The learner will be able to listen for information and enjoyment, and respond appropriately and critically in a wide range of situations.
2. The learner will be able to communicate confidently and effectively in spoken language in a wide range of situations.

In the light of this outcome, the following support strategies to enhance communication are recommended (Klippel 1985: 12–19):

- Cooperative learning, where learners learn group and conversational skills
- Answering questions, solving problems in small groups, playing guessing games and practising speeches to improve oral communication
- Getting learners to talk in planned lessons, such as lodging complaints or apologising, etc.
- Using jazz chants such as “I’m sorry, I’m so sorry, I’m really sorry, I’m terribly sorry”
- Having real conversations by means of simulated exchanges in the pharmacy, etc.
- Taking part in role-play, interviews, chain stories, talks, songs and discussions

Listening is an act of constructing meaning. The learner uses his prior knowledge and what he expects of the message in order to understand the conversation. Strategies which can be used to improve listening are as follows:

- **Listening to repeat.** The learner must listen and repeat a short sentence with one phoneme which differs, e.g. *It is a ship/It is a sheep*. Another example is where the learner needs to repeat the end of a sentence, then the next part is added and so it continues, e.g. *store/the store/to the store/walked to the store/Peter walked to the store*.
- **Listening to understand.** Learners listen to a story on tape and then complete true/false exercises; or they listen to a recorded speech and then encircle listed vocabulary as it appears in the text; or they can listen to a speech and then write an outline of it.
- **Listening for communication.** Total physical response (TPR) can be used where learners listen to language through movements, observation, and manipulation of objects and pictures. Initially they demonstrate their understanding by means of physical movements. Interviews and problem-solving situations (riddles, brain-teasers) are other ways to improve listening skills (Diaz-Rico & Weed 1995: 91–98).

Vocabulary is learned in a situation and language structures are learned informally by means of games and stories, whereas the sound system is learned by means of imitation and repetition – the teacher speaks and the learner imitates. The teacher can say a number of words and when “river” is said the learners put up one finger and when “liver” is said, they put up two fingers. It is important for the teacher to emphasise correct pronunciation and to use rising intonation in his voice as well as facial expression. The teacher can show concern for accuracy by stressing the wrong syllable, then correcting himself and emphasising the right syllable.

Structures can be practised as follows:

- Learner X leaves the room and the rest of the class think of an adverb, e.g. *quickly*. Learner X returns and then asks the class to demonstrate the adverb, e.g. *Pat writes quickly*. Pat then has to write quickly and learner X has to guess what the adverb is.

Pronunciation games can also be played, for example:

- The teacher can give the learners a shopping list with different items. The learners must then draw two columns, one for words containing a *u* sound and the other for words containing an *i* sound – and write the words from the shopping list in the relevant columns.
- A story can be read where there are two characters. The learners are given a list of adjectives and they must decide which adjectives suit which character. Other questions which can be asked are, for example, what the moral of the story is.

According to Yang (1995: 65–68), television commercials such as family relationships, New Year’s activities and so on provide valuable aural, visual and cultural input for discussion. These advertisements can be exploited by way of previewing, viewing and post-viewing activities. The learners can watch the advertisement without sound, then with sound and lastly again without sound where they provide the audio part. The teacher can pause at a certain point and ask questions or discuss the characters or setting. When viewing

without sound is taking place, the learners can describe what is happening and being said. The learners can ask one another questions. This activity is very useful when introducing vocabulary. After the listening and speaking activities, a writing activity can follow; for example, the learners can be asked to write five sentences on what goes on in the class and what does not. This can be done in a group where the sentences can be written on the board or on paper and presented orally. This activity serves to review vocabulary and grammatical structures.

When using songs, the teacher first discusses the topic of the song, for example “feelings”, and asks questions about the singer and the songwriter of the class or small groups. The instructions should then be read with the class, with an explanation of what the song is about. The learners are given the song on a sheet of paper with a few words deleted. The deleted words should be available for learners to use to fill in the gaps. Allow the learners to work in groups as they do this. Dictionaries come in very handy at this stage. Before the song is played, they need to compare their answers. When the song is played, the learners check to see if they have filled the deleted words in the gaps correctly. They are then given a summary of the song and they need to find the mistakes in it. There are different types of songs which can be used, such as songs for special occasions, games and so on. It is important that the songs be selectively chosen to suit the level and age of the learners, and to consider aspects such as vocabulary and structures.

ACTIVITY

- Think of a way in which a guessing game can be played where all the learners can participate.
- How can a Bingo game be used to practise nouns or prepositions?
- How can games be adapted to be used as a pronunciation game?
- Give an example of a guessing game and say what language structures are being practised in this game.
- Give an example of a game where the present/past/future tense is being practised.

8.4.5.2 Reading

Outcome

The learner will be able to read and view for information and enjoyment, and respond critically to the aesthetic, cultural and emotional values in texts.

It is important to keep in mind that reading does not only involve decoding of words (the mechanics of reading) but also, most importantly, it allows the reader to derive meaning from the text and acquire knowledge (Diaz-Rico & Weed 1995: 98). Interaction takes place between the text and the reader's experience and therefore readers rely on their short- and long-term memory to relate the meaning of the text to their prior knowledge and language ability. It is therefore of utmost importance that the learners work collaboratively and read and write in order to communicate.

Diaz-Rico and Weed (1995: 99) offer the following strategies and techniques for teachers to use when helping learners to read to acquire knowledge:

- **Preceding activities.** By means of preceding activities such as group brainstorming, pictures, charts, field trips, etc., the learner understands the cultural context of the text, which enables him to interact with the text, anticipate what is going to happen and gain knowledge. The learner is able to understand the vocabulary and the concepts in the text.
- **Initial reading instruction.** There are different approaches which a teacher can use, one of which is the *synthetic* approach. Letters, sounds and syllables are used to build meaning, which works well with languages where the speech/print correspondence is regular – i.e. knowing the sounds and how they are combined in order to read for meaning. The *analytic* approach emphasises whole words and sentences such as in the *language experience* approach. The learners relate the story or experience (topics they are interested in), the teacher writes it down exactly as the learner tells it and reads it back to the learners, who eventually read it by themselves. The advantage

here is that the learners have the opportunity to relate their own experiences orally. They understand that sounds can be transcribed into symbols which can be used to recreate the ideas they have expressed. It is advisable to make use of an *eclectic* approach, where the strengths of both methods are used to acquire reading proficiency. The teacher should know the level of the learners' language development and then make informed decisions on which approach to use.

- **Literature-based curriculum.** Using authentic English works is culturally enriching and describes many societies, for example what they eat, their feelings and so on. This also applies to historical literature. Literature also involves learners personally – they become stimulated and explore other territories while their language is developing and they are participating in reading and writing activities. By engaging in the reading of literature, the learners develop left-to-right text direction skills, knowledge of print characteristics, and appreciation of graphics and pictures. It is very important to consider the learners' interests, needs, cultural background and language level in order to know what literature to choose. Literature which reflects their own culture is exciting for them.
- **Genres: patterns and purposes.** Teachers explain to learners the purpose of the text and the audience for which it is written – for example a menu in a restaurant – as this helps them to understand the text. Exposing learners to a variety of texts such as recipes, plays and poems expands their knowledge of English text.
- **Techniques for learners without literacy in first or second languages.** Such learners would include preschoolers, those who have no knowledge of print and those who are partially literate. It is important that these learners continue with preliterate activities and reading programmes in their home language up to the Grade 4 level, along with exposure to stories about their culture in English. This enables them to concentrate on language. These learners should try to read by themselves even if they do not understand all the words. The teacher

can begin by reading aloud. The learners listen to discussions about the book, which will increase their vocabulary. The *language experience* approach is very effective for this group of learners.

The *vocabulary self-collection strategy* by Haggard (Martin et al. 2002: 34) can be useful for vocabulary building:

- The learners read part of the text.
- They then make a list of words of their choice from the text.
- Each learner then chooses one word from his list which he thinks is important for everybody in the class to learn, and supplies reasons for choosing the word.
- In small groups (2–5) they present their words and respond to the following questions: *Where is it in the passage? What does it mean in the text? Why is it important for everybody to learn the word?*
- The groups must then present their words with their responses to the questions to the whole class. The class is encouraged to add any information.
- Once all the groups have had their turn, the class can agree on a final list of words with their definitions to add to their notebooks.
- Learners need to look up each word in their dictionaries to make sure of the meaning.
- Learners are encouraged to use these words when speaking and writing English.
- It is important that the teacher evaluates the word lists. The teacher should listen to the learners' reasons for choosing the words, their discussions about the meaning of the words in their contexts, and how they use context clues like syntax and semantics. The learners can also be evaluated on how they write about their assessment of their own performance in the group and the class discussions.

The following reading activities can be useful:

- Flashcards are used, for example *Sing to me*. Mary stands behind the teacher. The teacher shows the flashcard to the class and they demonstrate what is on the card. Mary then has to guess what is written on the card. Pairs of learners can also play this game. Each learner has a list of words. One learner reads some of the words marked with a cross. The other learner must decide if the word on his list is the same or not.
- Learners are given a set of pictures from magazines and a set of instructions accompanying them. The instructions are scrambled and the learners have to match the pictures and sentences.
- For recipes, learners are given lists of ingredients and lists of instructions and they have to match the right instructions to particular lists of ingredients.
- Learners are given a cartoon. Pictures 1, 2 and 3 have dialogue written in the bubbles. The bubbles in the rest of the pictures are blank and the learners have to write in their own dialogue. Alternatively, they are given a number of captions which concentrate on sequencing; for example: *Later in the afternoon ...; As the evening approached ...*, and the learners must match them with pictures 4, 5 and 6. These activities can be done in pairs. They can also make up their own story and present it to the class, or the teacher can ask them to write their own endings which are then discussed with the class.
- The teacher can write a story and present it with accompanying drawings and captions, or while the teacher is telling the story a colleague or learner can mime the actions, or the story can be presented as a short play by reading it aloud several times and then performing it for the learners.
- The learners can listen to a well-known folktale and then write their own story along with a moral. The teacher must make them aware of how the story begins and ends.
- Meaningful texts should be used and should be accompanied by example exercises, graphs, illustrations and photos. Email can also become reading material as well as tape recordings of learners' life stories. The teacher transcribes and edits them, and these become reading materials.

- Teachers can read aloud to learners. Books should have attractive illustrations, repetitive language and a predictable story structure. During the early stages of reading, internationally known stories such as *Red Riding Hood* and *Cinderella* are recommended (Ernst & Richard 1994: 324).

ACTIVITY

Why is it important for teachers to read stories aloud to learners? What are the benefits for the learners?

8.4.5.3 Writing

Outcome

The learners will be able to write different kinds of factual and imaginative texts for a wide range of purposes.

The essence of writing as a communicative task is to relate it to the real world. The teacher needs to follow the *process* approach which includes planning, writing and editing. During the planning stage the learners have oral experiences – such as speaking, listening, reading and brainstorming – which motivate them to write. During the writing stage they write as quickly as they can, concentrating on spelling, vocabulary and syntax without worrying about accuracy. The learners can interact with one another by way of sharing and discussing. During the editing stage the teacher helps the learners fix spelling, etc. The main aim of this whole process of writing to communicate is to generate writing which captures shared ideas (Diaz-Rico & Weed 1995: 104).

The writing workshop

Learners are responsible for their own learning. They work on projects and have material and resources available. English home language speakers and the teacher can act as resources. The teacher is the facilitator and works on the progress of each learner during certain times by listening to him and asking questions, which helps him to control, organise and focus on the writing. Oral feedback by the teacher to the learn-

er via a tape recorder is very effective. Peer response can also be used as learners are guided by questions while reading each other's work. Fluency is the first priority rather than accuracy. When working with younger learners, the teacher should concentrate on getting the learners to express ideas, rather than on correcting their grammar (Diaz-Rico & Weed 1995: 104–106).

Internet technology is very useful in the teaching of ESL. The teacher needs to arrange learning environments that include learning aids which will meet the needs, interests and language abilities of the learners and to consider their backgrounds. The teacher can design a website by finding relevant ones and providing learners with guidance and an apprenticeship. The teacher can download the necessary documents, divide them into a sub-web, and thus construct an intranet. As the learners progress they are allowed more freedom to explore and attempt to answer more open-ended questions (Yang 2001: 92).

Before a writing activity begins, the teacher should use aids which will stimulate the learners. The use of pictures, photographs, newspapers and articles on current events will get learners in a group started. Other activities can include real objects such as modern music, folktales, excursions and role-playing. Topics which learners can choose from include rhymes, songs, feelings and directions. Learners begin writing by tracing letters, words and sentences. Grammatical patterns and functional rules – for example simple present tense to describe everyday routines – can be taught. Simple sentences can be written on the board and learners then write on the board adding onto the sentences. They can also make up sentences of words that all begin with the same sound; for example “Careful Carmen can't come”. This reinforces vocabulary development. Other activities which can be used here include unscrambling muddled sentence parts, planning a party by making two lists, such as “Things to do” and “Things to buy”. The learners can work in groups or pairs and even do related tasks such as writing invitations and so on. More advanced learners can read and write public notices, such as notices on bulletin boards, and role-play telephone conversations.

During the early stages of writing the ESL learn-

ers' writing efforts should be accompanied by drawings. They can start by dictating the story to the teacher and the teacher then writes the story, or they can organise a set of drawings to tell the story. Collaborative efforts with peers to organise, write, revise, edit and publish their written work are of value in developing writing skills. It is important that ESL learners make use of traditional literary language formats such as nursery rhymes (Ernst & Richard 1995: 325).

ACTIVITY

It is your colleague's first day of teaching 15 ESL learners who are totally immersed in her Grade 4 class (38 learners). What advice would you give her to get through the first hour? Key words: *names; talk; textbook; frame of reference; correct; questions; answering; pronunciation; lesson progress*

8.4.6 Parental involvement

It is important for teachers to communicate with parents of ESL learners by means of handouts (typed) and personal meetings. Parents need to be informed about the progress and problems their children are experiencing and about the correct type of support they need to provide. This means that parents must be encouraged not to drop the home language in order to speak English at home. Instead, the home language should be supplemented by the language of learning and teaching used at school as well as by other media such as newspapers, television, discussions and so on. However, parents should help their children with their English assignments. They should understand that ESL is a support programme whereby the learners benefit in all learning areas. It is also important that the parents understand why, because of ESL, their children do not achieve as they would in their first language (Garner 1990: 127–129). Parents should provide teachers with information regarding their children's language development, such as how old they were when they were confronted with a new language; who they communicate with at home; whether they are exposed to reading material, television, etc. Teachers should be in close contact with parents, who need to be involved in the school's activities and

with their children's education at home. At school they can help the teacher with the language, provide information about the culture, and help to translate letters and stories in the home language.

It is of the utmost importance for parents to participate in the activities of the school. The school's communication with parents in the form of letters, notifications and reports in the home language enhances the relationship between the parents and the school. Parents can be involved by

- having representative parent committees to advise on cultural and linguistic issues
- using the library with their children to work on projects
- using the school facilities for community meetings.

It is important for schools to encourage the fostering of good relations with parents and communities by means of orientations, home language newsletters and committees.

ACTIVITY

Make suggestions on how the principal, school governing body (SGB), school management team (SMT) and teachers can encourage parents to become involved in their children's acquisition of the second language, English.

8.5 CONCLUSION

Learners who are taught in schools where English is the language of learning and teaching but not their home language are usually referred to as English second language (ESL) learners. In this chapter we highlight the difficulties these learners may experience in school to access the curriculum. Guidelines to support these learners to improve their skills in speaking, reading and writing are offered.

Questions

1. What do you think are the main reasons for so many learners in South Africa learning in their second or even third language?
2. Compile a lesson plan to teach English second language by means of a holistic approach.

Bibliography

- Adler, J. & Reed, Y. 2002. *Challenges of teacher development*. Pretoria: Van Schaik.
- Brindley, G. 2001. Assessment. In Carter, R. & Nunan, D. (Eds), *Teaching English to speakers of other languages*. Madrid: Cambridge University Press.
- Bygate, M. 2001. Speaking. In Carter, R. & Nunan, D. (Eds), *Teaching English to speakers of other languages*. Madrid: Cambridge University Press.
- Corbett, J. 2001. *Supporting inclusive education*. London: Routledge Falmer.
- Dednam, A. 1997. *Learners with special educational needs*. Study guide for FDESEL-L. Pretoria: Unisa.
- Department of Education. 1997. *Language in Education Policy of South Africa*. Pretoria: Department of Education.
- Department of Education. 2002. *Revised National Curriculum Statement Grades R–9 (Schools) Policy. Languages: English – Second Additional Language*. Cape Town: Department of Education.
- Diaz-Rico, L.T. & Weed, K.Z. 1995. *The cross-cultural, language, and academic development handbook*. Boston: Allyn & Bacon.
- Ellis, G. 1996. How culturally appropriate is the communicative approach? *ELT Journal*, 50(3), 213–218.
- Ernst, G. & Richard, K.J. 1995. Reading and writing pathways to conversation in the ESL classroom. *The Reading Teacher*, 46(4), 320–326.
- Frederickson, N. & Cline, T. 2002. *Special educational needs, inclusion and diversity*. Buckingham: Open University Press.
- Freeman, Y.S. & Freeman, D.E. 1992. *Whole language for second language learners*. Portsmouth: Heinemann.
- Freeman, Y.S. & Freeman, D.E. 1998. *ESL/ECL teaching*. Portsmouth: Heinemann.
- Garner, D. 1990. The teacher's task: the work of the classroom. In Murphy, E. (Ed.), *ESL: a handbook for teachers and administrators in international schools*. Philadelphia: Multilingual Matters Ltd, 105–130.
- Janney, R. & Snell, M.E. 2000. *Modifying schoolwork*. Baltimore: Paul H. Brookes.
- Johnson, K.E. 1995. *Understanding communication in second language classrooms*. Cambridge: Cambridge University Press.
- Kinsella, K. 1996. Designing group work that supports and enhances diverse classroom work styles. *Tesol Journal*, 6(1): 24–30.
- Klippel, F. 1985. *Keep talking*. Cambridge: Cambridge University Press.
- Krouse, M.A. 1994. *Communicative English*. Cape Town: Maskew Miller Longman.
- Lapp, D., Fisher, D., Flood, J. & Cabello, A. 2001. Are L One and L Two complementary? In Hurlley, S.R. & Tinajero, J.V. (Eds), *Literacy assessment of second language learners*. Boston: Allyn & Bacon, 3–24.
- Martin, A., Martin, S.H. & Ying, W. 2002. The vocabulary self-collection strategy in the ESL classroom. *TESOL Journal*, 11(2): 34.
- Meakin, S. 1990. Some theoretical considerations. In Murphy, E. (Ed.), *ESL: a handbook for teachers and administrators in international schools*. Philadelphia: Multilingual Matters Ltd, 11–17.
- Rost, M. 2001. Listening. In Carter, R. & Nunan, D. (Eds), *Teaching English to speakers of other languages*. Madrid: Cambridge University Press.
- Setati, M., Adler, J., Reed, Y. & Bapoo, A. 2002. Code-switching and other language practices in mathematics, science and English language classrooms in South Africa. In Adler, J. & Reed, Y. (Eds), *Challenges of teacher development*. Pretoria: Van Schaik, 72–91.
- Tough, J. 1995. Young children learning languages. In Brumfit, C., Moon, J. & Tongue, R. (Eds), *Teaching English to children*. Essex: Longman, 213–227.
- Weideman, A. 2002. *Unit for language skills development*. Pretoria: University of Pretoria.
- Wessels, M. & Van den Berg, R. 1998. *Practical guide to facilitating language learning*. Johannesburg: International Thomson Publishing.
- Williams, M. 1996. A framework for teaching English to young learners. In Brumfit, C., Moon, J. & Tongue, R. (Eds), *Teaching English to children*. Essex: Longman.
- Wilson, G. & Wilson, A. 1971. *Teaching English to foreigners*. London: BT Batsford Ltd.
- Yang, J.P. 1995. Integrating authentic materials into the intermediate classroom with Taiwan TV ads. *Journal of the Chinese Language Teachers Association*, 30(1): 66–73.
- Yang, S.C. 2001. Integrating computer-mediated tools into the language curriculum. *Journal of Computer Assisted Learning*, 17: 85–93.

AUGMENTATIVE AND ALTERNATIVE COMMUNICATION

JUAN BORNMAN

9

Learning outcomes

After reading this chapter you should be able to

- ▶ understand why learners with little or no functional speech should be exposed to augmentative and alternative communication (AAC) strategies to facilitate learning
- ▶ define “aided” and “unaided” communication systems and provide examples of each
- ▶ select an aided and/or unaided system for a particular learner
- ▶ describe different forms of AAC that may be implemented in the classroom
- ▶ dispel general myths related to AAC.

The closest simile as to how people treat non-speech people is how they treat pet dogs ... think about that for a minute. How much difference is there? People take good care of pet dogs. They give them love, food, warm homes, attention when they are not busy. And people don't expect much out of their pet dogs. Just affection and obedience. This is the sad part. People just don't expect much from non-speech people.

(Rick Creech, AAC user in Musselwhite & St Louis 1988: ix)

Key terms

augmentative and alternative communication (AAC)

- ◆ *aided systems* ◆ *high technology* ◆ *little or no functional speech* ◆ *low technology* ◆ *manual signs*
- ◆ *unaided systems*

CASE STUDY

Background

Jabulani Kabini is ten years old and attends the Golden Acres School in Pretoria. He is in a wheelchair as he is unable to walk, but he can use his right hand quite effectively. He has a severe intellectual impairment.

Communication skills

Jabulani has only a few intelligible words, e.g. “uh” to indicate “yes” and “Mama”. When he is thirsty, he will show his cup. When he finishes any task he smiles and tries to point to something else to do. Sometimes the other learners will notice that Jabulani is pointing to something in particular, and they will give it to him. When his pointing attempts are not understood, he reacts by crying and screaming. He has invented a sign (using his right hand) for when he wants to dance, one of his favourite activities.

Teacher's impressions

It is unclear how much Jabulani understands, but his teacher, Mrs Nkosi, is sure that he understands more than he is able to articulate. She feels that he can follow simple instructions, and sometimes when something funny happens in the classroom, he will laugh. She feels she understands him well even though he cannot talk. During class he generally sits quietly doing his own thing.

Family perspective

Mrs Kabini has been to the school a couple of times and has told the teacher that Jabulani is mostly on his own at home. The other children in the family help to dress and feed him, but he does not really have any friends. Mrs Kabini's mother, however, goes for walks with Jabulani or sits with him while watching television.

How much do you think Jabulani has gained by being in school up to this point? Why?

9.1 INTRODUCTION

Jabulani's case highlights some important issues for teachers. This chapter will systematically go through some of these issues to show why specific attention to how learners communicate is vital in facilitating learning.

With reference to the case study, Jabulani clearly does not have functional speech. He is unable to express his needs and thoughts through speech, making meaningful participation in what is going on around him impossible. This lack of speech not only hinders his classroom participation, but also makes it difficult for his peers and teachers to interact with him as they find it difficult to understand what Jabulani wants to communicate and thus it becomes easier rather to avoid or ignore him. One of the biggest difficulties in cases like Jabulani's has to do with the perceptions of teachers and peers towards learners who are unable to speak. A lack of speech is frequently seen as a reflection of "severe intellectual impairment" or "inability to learn". This, however, is a false assumption as there are many people who are unable to express themselves (for whatever reason) that are highly intelligent, such as Stephen Hawking, the internationally acclaimed

scientist who cannot talk and has to communicate by using a computer device.

An aura of charity also still pervades many of the services provided to such individuals, and often the focus falls on care and love, but not really on teaching them new skills, just like the pet dogs Creech talks about at the beginning of the chapter. This implies that these learners are often not given opportunities to control their own environments successfully and develop new skills as everything is done for them, based on long-held, low expectations. Consequently, these learners' passivity and dependence on others are increased, resulting in "learned helplessness" (Rowland & Schweigert 1999). We simply cannot make assumptions about learners who cannot talk if they have no means to express themselves.

Teachers are often unaware of the impact of statements like the one made by Jabulani's teacher – "I understand him well" – on the learner. Clearly this statement has no substance, firstly because the teacher cannot know whether she understands Jabulani well (he cannot tell her if she misunderstands!) and secondly, it reflects a perception that she does not really think he needs additional means of communication. This kind of misperception result in learners not receiving any intervention or help, as the urgency of the need to assist them in communication is not recognised. This clearly has a major impact on Jabulani's learning opportunities as he is not able to express himself. In addition to this, his teacher is not expecting him to learn through active participation.

Sadly, Jabulani is not an isolated case within the South African context. In fact, a study conducted in South Africa (Alant 1999; Bornman & Alant 1997) indicated that 38 per cent of learners in schools for children with severe intellectual impairment can be regarded as non-speaking or having little or no functional speech, as described by their own teachers. This incidence in South Africa is about 200 per cent higher than that reported in comparable international studies (Burd et al. 1988; Matas et al. 1985). The reasons for this high incidence are multiple but one of the major factors relates to the lack of intervention that these learners receive. Parents and teachers seem to be unaware of the vital importance of a

child's ability to interact or communicate as a basic requirement for learning and social adaptation. The basic attitude of "let's wait and see if the child won't start speaking later on" or "the child is just a bit slow" basically leads to an extensive "waiting period". If individuals cannot speak, other ways have to be found to assist them in getting their messages across so that they are able to express themselves and make contact with others, which in turn will allow them to develop as learners.

The use of augmentative and alternative communication (AAC) strategies focuses on how the learners' current communication efforts can be supplemented to enhance their ability to communicate and subsequently improve their chances of leading independent and more fulfilling lives, taking up their place in the community as contributing members (Carter 2003). The importance of AAC strategies to enable these learners to engage in developmental experiences and the learning process has also been acknowledged at policy level (Department of Education 2002).

9.2 WHO CAN BENEFIT FROM AAC INTERVENTION STRATEGIES?

AAC strategies are recommended for all individuals for whom speech, gestures and/or written communication is inadequate to meet all their daily communication needs (ASHA 1991). Individuals with severe disabilities who fit this description are heterogeneous. They are of all ages and both genders, and have different personalities and interests. The greatest common factor, however, is their high support needs as these individuals typically require extensive, ongoing support to enable full participation in society (Carter 2003).

The primary group of people who will be using AAC strategies will be able to hear adequately and for them speech will be their primary input mode. Deaf learners on the whole will be using sign language, and therefore they will not fall into the domain of learners who require AAC strategies. Some of the conditions that can contribute to little or no functional speech include *intellectual* impairments (e.g. developmental disabilities and various different syndromes like Down syndrome,

Rett syndrome and Angelman syndrome/Happy Puppet syndrome); *sensory* impairments (e.g. deaf-blindness); *neurological* impairments (e.g. cerebral palsy, apraxia, aphasia, traumatic brain injury and progressive muscular dystrophy like multiple sclerosis, myasthenia gravis and amyotrophic lateral sclerosis), *psychological* impairments (e.g. elective mutism and childhood psychosis), *structural* impairments (e.g. glossectomy, laryngectomy and permanent tracheotomy) and other conditions (e.g. attention deficit/hyperactivity disorder (AD/HD) and pervasive developmental disorders (e.g. autism and Asperger syndrome)) (Musselwhite & St Louis 1988). Grouping this heterogeneous population into specific categories is, however, not easy as there is overlap between different categories. All developmental disabilities do not necessarily imply intellectual impairment, and some of the syndromes, for example Rett syndrome, are characterised by profound intellectual impairment despite neurological involvement.

9.3 WHAT IS AAC AND WHY IS IT IMPORTANT IN THE CLASSROOM?

Communication comes from the Latin word *communicare* which means *to share or make common*. In general, any intentional or unintentional transfer of information about needs, desires, perceptions, knowledge or emotions might be considered to be communication. But defined in its academic sense, communication generally needs to be intentional, meaning that a person who communicates *intends* to convey something to another person (Von Tetzchner & Martinsen 2000). The nature of this transfer can take many different forms, including verbal and/or non-verbal, and may occur through a variety of modes. Speech is usually the preferred mode of interaction, but in particular contexts other modes may be preferred, for example when calling a person over a vast distance, a gesture for "come here" might rather be used, or when wanting to ask a question in a quiet situation, writing may be preferred. However, for Jabulani and others like him, using a different communication mode (e.g. pointing) is essential in assisting them to get their messages across to others.

When we view communication, it is clear that

there are two major skills involved in the process. The first is the ability to understand the messages of others; for example Jabulani needs to understand the teacher and other learners in the classroom. This is referred to as **receptive language skills**. The second is the **expressive language skills**, which refer to learners' ability to speak, use signs or other ways to get the message across. Clearly, the fastest and easiest way to communicate is through speech, so this is what we want to encourage in three ways:

- By concentrating only on **speech**, which, however, can often be very discouraging for the learners as it focuses on what they cannot do and/or have severe difficulty with.
- By providing the learners with **another way of communicating**, i.e. a strategy like AAC that would allow participation without focusing only on speech. The advantage of using AAC strategies is firstly that the learners remain in contact with the people around them, can participate and are therefore motivated to communicate. Secondly, the use of AAC strategies takes the attention off their difficul-

ties in trying to produce speech, decreasing the stress on the communication process and thereby facilitating the development of speech. It is not uncommon for AAC strategies to be provided and for the learner to start talking after a relatively short period (Bornman et al. 2001).

- By **combining these strategies**, depending on the individual learner and the context.

AAC refers to a broad variety of strategies (primarily non-verbal in nature) that can be used to supplement the existing communication efforts of the individual by using either aided and/or unaided symbols (Lloyd et al. 1997a). Aided symbols require a medium of transmission (e.g. real objects, photographs, line drawings, devices with speech output), while unaided symbols require only the body (e.g. gestures, manual signs, finger spelling). A wide variety of these aided and unaided symbols have been developed (Lloyd et al. 1997b; Von Tetzchner & Martinsen 2000) and are outlined in Figure 9.1.

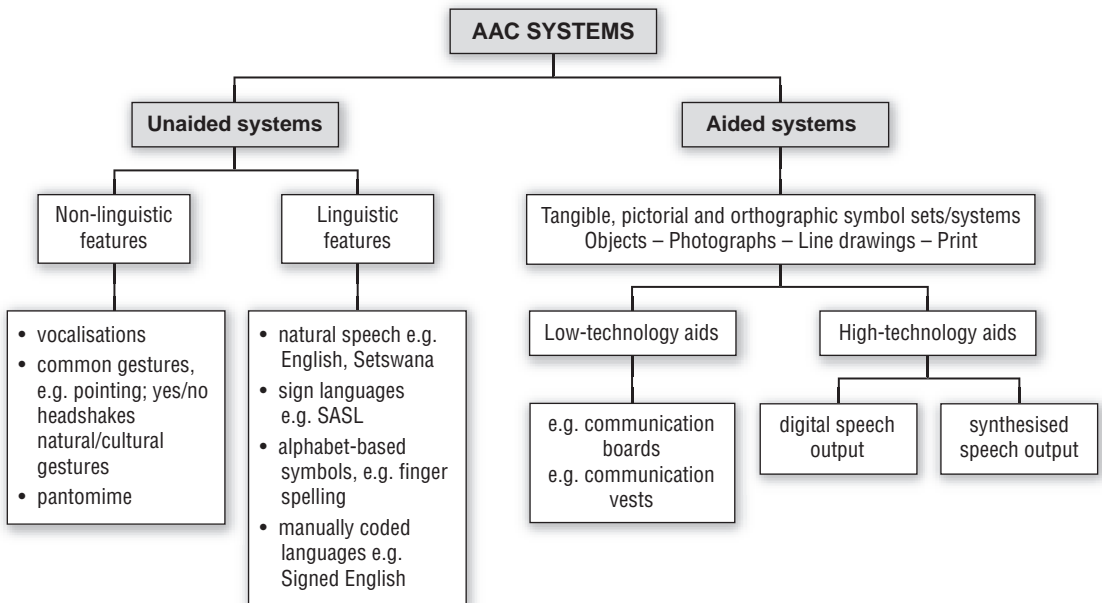


Figure 9.1 Outline of different AAC systems

9.3.1 Unaided systems

9.3.1.1 Different types of unaided systems

Unaided communication means that nothing more than the communicator’s body is required to communicate a particular message, and would include vocalisations, gestures and signs, to name a few. Therefore one can say that unaided communication messages are produced as opposed to aided messages which are selected (Von Tetzchner & Martinsen 2000). They can be divided into those with non-linguistic features and those with linguistic features (Loncke & Bos 1997). Systems that have non-linguistic features are those with a limited set of symbols or signs that can be used for communication, for example natural/cultural gestures, which results in a limited number of communication messages. Figure 9.1 shows this to be vocalisations, common gestures and pantomime.

Vocalisations, the first group, focus on voluntary vocalisations and are sometimes used as a substitute for speech, e.g. *uh* or *eee* for “yes” and *uh uh* for “no”. The second group, common gestures, include pointing, head nodding and shaking as well as natural/cultural gestures which refer to the spontaneous gestures for which no training

is required as they are learned in ordinary interactions. However, as the name infers, they are culturally specific, and therefore open to misinterpretation if one is not from the same community. Natural gestures work effectively to communicate a few basic concepts, but when developing a useful vocabulary for a specific learner such as Jabulani, the repertoire of natural gestures is too limited. Likewise, important classroom concepts, for example concepts related to life skills, cannot be communicated via natural gestures, and therefore manual signs (e.g. from a formal sign language) are required.

It is also important to remember that some learners with severe disabilities might grab objects to indicate that they want the object, and in such cases the grabbing can be shaped and moulded to become a point for indicating a request. A few natural gestures that will be understood by most South Africans are shown in Figure 9.2. The third group, pantomime, can best be described as the performance of a pretend action usually involving the whole body. It is generally presented more as acting and can be used as an initial technique before moving towards the use of linguistically unaided systems or other aided systems (Silverman 1995).



Figure 9.2 Natural/cultural gestures

On the other hand, unaided systems with linguistic features include natural speech, sign languages and alphabet-based symbols such as finger spelling. They are more extensive and have linguistic features, thus they resemble generative systems. This means that the use of the signs can be described by rules, and they can be combined in various ways to create new meaning. Clearly the messages these strategies can communicate are unlimited, just as is the case for any other language. Sign language used by the Deaf community is a good example. A sign language, such as the South African Sign Language (SASL) is a fully-fledged language with its own grammar rules and syntax, which means that it has the same expressive ability as any other language, although it uses signs to express these. In South Africa, SASL is used, as American Sign Language (ASL) is used in America, and British Sign Language (BSL) is used in Britain. There is thus no such a thing as a “universal sign language”. It is also important to note that sign language is a visual language without accompanying speech.

When using unaided communication with individuals with little or no functional speech, intervention does not focus on teaching them sign language, but some signs from SASL are used within the sentence structure of a spoken language (e.g. English, Afrikaans, isiZulu, etc.). This strategy is referred to as **key word signing**, which means that within a particular sentence only the key concepts and not all the words are signed while the speaker is speaking. However, in some instances, manually coded languages such as “Signed English” is used where full sentences are spoken and each word is signed, but with the syntax and grammar of the spoken language (English) rather than the signed language. For finger spelling, each individual letter of the alphabet is formed by different hand shapes and put together to spell words. There are different alphabets that are used, some of which are one-handed and others two-handed.

Are some signs easier to make than others? Yes, a few general rules apply (Loncke & Bos 1997). Firstly, signs that require both hands and where both hands make the same movement (thus symmetrical actions) are usually easier to make than asymmetrical signs e.g. “book” vs “pro-

jector”, and “group” vs “word” (Figure 9.3). It is also important to remember that all signs can be simplified and that young children will have a childish articulation in signs as they do in speech (Grove 1990). Hence the meaning is more important than the form. Secondly, research has shown that signs where the hands make contact are learned more easily than non-touch signs, and this may be attributable to the higher tactile and kinaesthetical control. Examples of such signs would be “list”; “clay”; “stamp”; and “pencil” (Figure 9.3). Thirdly, signs with the easiest hand shape and/or movement are more easily learned than those with complex hand shapes e.g. “teacher” vs “old” (Figure 9.3).

Finally, iconicity also influences ease of learning. Iconicity refers to the degree with which a sign resembles its referent, making it easier to guess its meaning, and it is classified in terms of transparency and translucency (Lloyd et al. 1997a). Signs that are easier to guess (thus transparent signs) are easier to learn than the more abstract signs (translucent signs); for example it is easier to guess “motor car” than “red” (the sign for “red” is easily confused with “smile”). However, once the learner is taught that the symbol refers to the lips and that the lips are “red”, it facilitates later recognition and production (Figure 9.3). In addition, it may be beneficial to use iconic signs, as people to whom they are unfamiliar understand them with limited instruction.

9.3.1.2 Advantages and disadvantages of unaided systems

The most obvious advantage is that the learner does not have to carry anything around, which is something that appeals particularly to ambulatory users. For example, when Thembi is in the playground and she wants to request “more swing” she needs to have her communication system available. As signs are thus “portable” she will have them available, as opposed to a communication book that might have been left in the classroom. Signing is also useful when teaching learners with challenging behaviour to replace that behaviour with something more appropriate; For example, kicking and screaming can be replaced with the sign for “leave me alone” or “I need a break”.

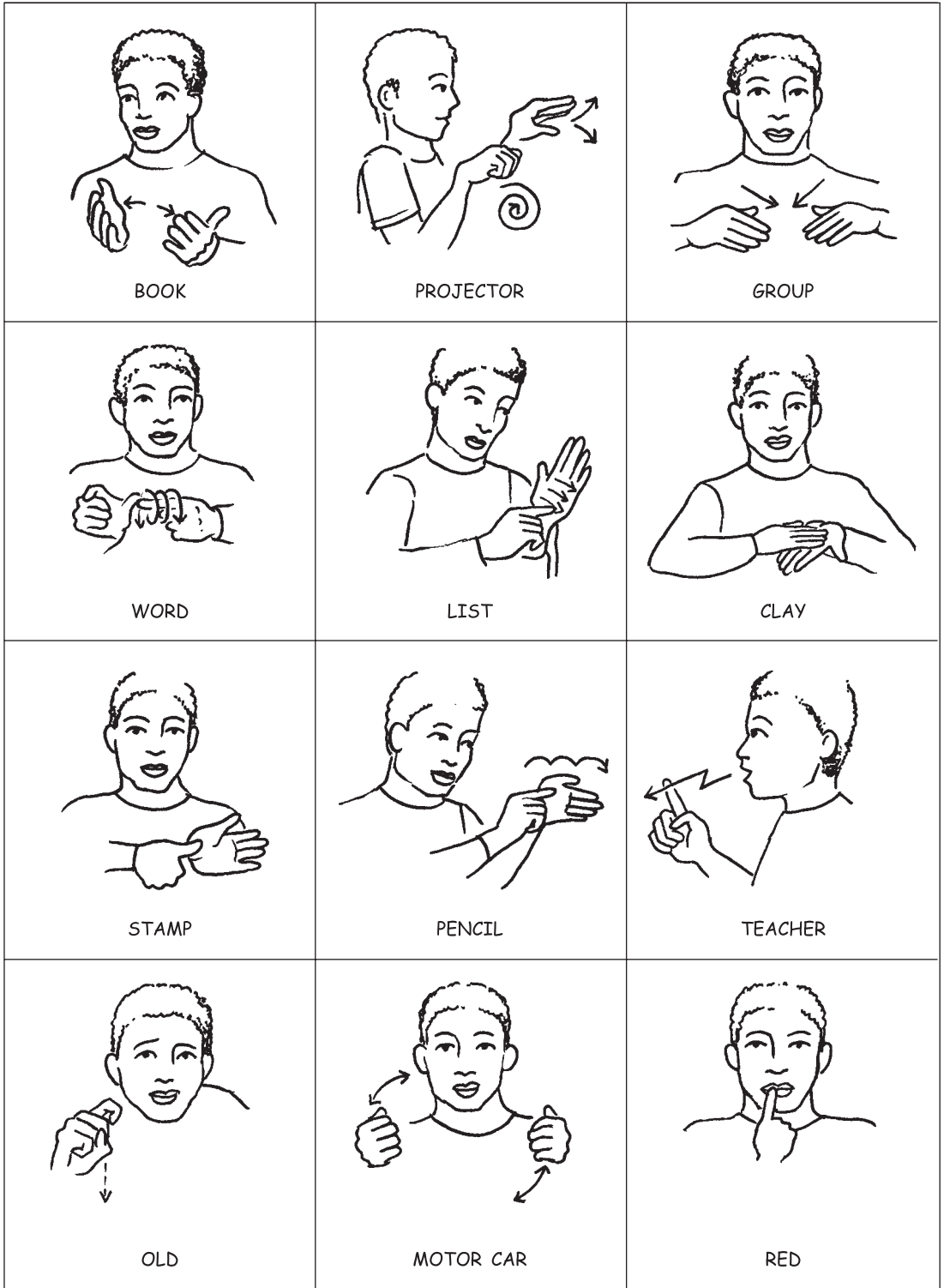


Figure 9.3 Twelve manual signs from South African Sign Language (SASL)

It is important that the replacement signs can be done as quickly and with the same ease as the challenging behaviour, otherwise they simply will not be used (Durand 1990). Signs are always available; for example a learner can quickly sign “help” as opposed to taking out a communication book, finding the symbol, drawing the listener’s attention and then indicating “help”. By that time it may be too late! Particularly in situations such as these where interaction has to happen quickly, the availability of the signs is crucial. Finally, many learners with little or no functional speech find it easier to learn the meanings of manual signs as opposed to graphic symbols.

Despite all these advantages, signs can be problematic when learners have to communicate with uninitiated partners who do not understand the signs, particularly when a sign is translucent (e.g. “red”). It is difficult for inexperienced people to interpret it correctly. This is different from graphic symbols where the symbol is always accompanied by the written word. In reality, however, these learners do not communicate with many strangers. Their small social network (which includes the teacher) can be taught signs with relative ease. Signing also requires some degree of motor control; for example if Alice is not able to use her hands due to cerebral palsy, she will be unable to make the signs, and if Johannes has motor planning problems (e.g. apraxia) he will also find it difficult to make gestures. Lastly, gestures are dynamic (e.g. movement or change is necessary to understand their meaning). This means that learners have to remember what the sign looks like and how to produce it if they want to use it, as opposed to a communication board that has a static display, i.e. all the symbols are displayed on the board and the learner only has to make a selection from these options.

9.3.2 Aided systems

9.3.2.1 Different types of aided systems

The other major category of AAC systems is the aided systems (see Figure 9.1). While unaided communication messages are *produced* (e.g. manual signs), aided communication messages are *selected* (e.g. pointing to a line drawing) (Von Tetzchner & Martinsen 2000), and they refer to com-

munication that uses various symbols, strategies, techniques or assistive communication devices that use something external to the body to represent, select or transmit a message (Lloyd et al. 1997a).

ACTIVITY

What type of communication that fits the above description will be useful in the classroom?

Although there are many different types of aided communication systems available, the focus of this chapter will be on tangible symbols, pictorial symbols and traditional orthography (print). For the purpose of this chapter, tangible symbols can also be called *object symbols* and typically refer to three-dimensional aided symbols that are permanent, manipulable with a simple motor behaviour, can be discriminated tactilely and are highly iconic (transparent) (Rowland & Schweigert 2000; Rowland et al. 2001). Object symbols are usually identical to, similar to or associated with their referent. That means that Jabulani will be taught to use a cup to request something to drink. Likewise, learners can use parts of an activity to request the particular activity, e.g. one block to request “I want to build blocks”. It is important to note that the actual object is not used (e.g. the cup or the block), but that the cup or block is used as a *symbol* to represent something else; for example the cup represents “I am thirsty”. However, when using objects for communication, the objects need not be real ones (e.g. a cup); they can also be associated symbols, for example when using a piece of chain to indicate an outdoor swing, or an audiocassette or CD to indicate “music time” (Bornman 2001). Sometimes it is impractical to use a real object (e.g. bus to indicate “going-home time”) and then miniatures can be used. These should, however, always be used with caution by learners with visual impairments, as the relationship between the miniature and the real object might not be clear (Beukelman & Miranda 1998). The use of objects for communication purposes is limited due to the fact that they are concrete (e.g. cannot indicate emotions by using object symbols), and therefore attempts

should be made to move from tangible symbols to pictorial representations as soon as the learner understands the concepts.

ACTIVITY

Would a miniature plastic horse be effective for representing “horse riding” for Kumbi, a young boy with severe intellectual impairments and low vision? Give reasons for your answer.

It is unlikely that this “object symbol” will be recognised, as it feels different to the real thing with regard to size, shape, texture, etc. In this case, a piece of leather (to indicate the reins and saddle) might be much more understandable, as Kumbi might associate horse riding with the feel of the leather saddle on which he sits. The leather thus represents horse riding.

Pictorial symbols are two-dimensional and, for the purpose of this chapter, include photographs and line drawings. Photographs can be either black-and-white or colour and may be used to represent objects (e.g. “ball”), verbs (e.g. “sleeping”), people (e.g. “Oupa”) and places (e.g. “Wimpy”). Photographs can be obtained from different sources, for example produced with a camera (regular photographs, with a digital camera and printed, or with a Polaroid producing instant pictures), or from catalogues and advertisements (e.g. Shoprite/Checkers) or product labels (e.g. Five Roses tea).

The next type of pictorial symbols is line drawings. There are numerous systems available, for example Pictogram, Blissymbols, Picture Communication Symbols (PCS) and Widgit Rebus, which are displayed in Table 9.1. For the purpose of this chapter, however, only PCS will be discussed as it is used most widely in South Africa. PCS consists of more than 7000 clear, simple line drawings that are available with either English labels or no labels, enabling the user to type in the mother tongue of the child (King 2001). At present an initiative to include symbols specific to the African context (e.g. *pap*, *kwaito*, *koeksisters*) is under way, and these symbols should be available in November 2004. PCS is effective in the classroom as many teaching materials are available and materi-

als have been set out according to themes (e.g. “fire brigade”), making it easy to use within the outcomes-based education paradigm. By using line drawings, the learners’ receptive language skills are stimulated and expanded, as they receive a visual cue together with an auditory one, and at the same time they are also provided with a means of expression as they can point to the line drawings.


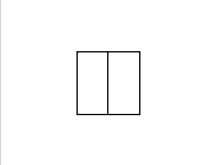
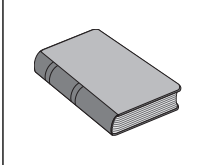
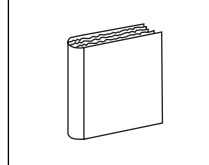
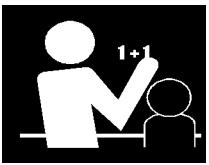
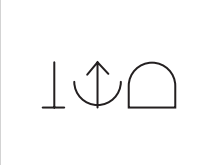

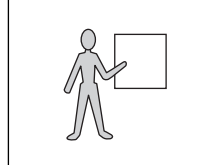

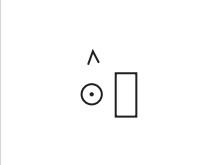

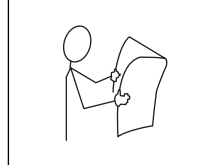


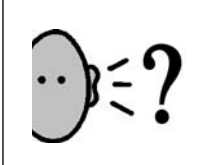



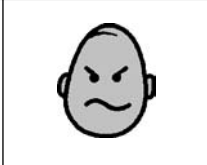

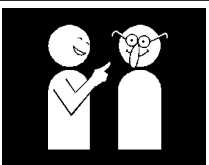
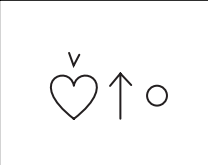

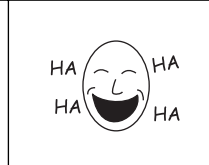
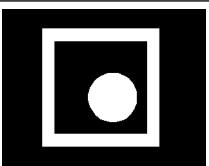
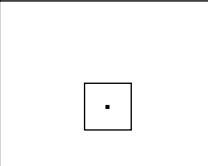
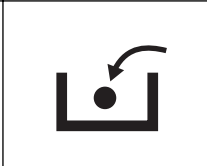
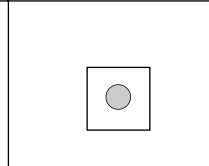
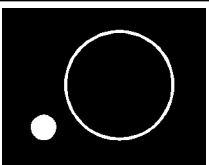
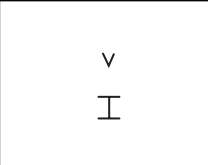
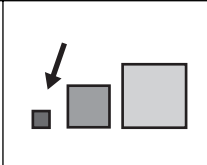
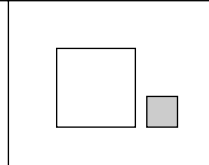
Finally, aided systems also include orthographic systems such as traditional orthography/print, as well as techniques that represent traditional orthography (e.g. Braille). **Orthography** refers to alphabet letters (or characters) that are used to encode the language of the particular community in written form (e.g. the 26 letters of the English, Afrikaans, and isiXhosa alphabets). When orthography is used as part of an AAC system, in other words to replace speech, it could include single letters, words, syllables (e.g. prefixes and suffixes), phrases or sentences (Beukelman & Mirenda 1998).

It is important to remember that all aided symbol systems can be used in combination with each other; for example PCS can be used with a few written words and a few photographs of familiar and favourite places. The mode of representation (i.e. the symbol system) is determined by the learner’s competencies and requirements (Sen 2003).

9.3.2.2 Advantages and disadvantages of aided systems

Aided systems provide a way of participation for learners with little or no functional speech with a greater variety of communication partners (e.g. they are not restricted to communicating only with partners who know and understand their communication attempts), in a variety of contexts (e.g. they can be more independent and venture into situations that had been inaccessible in the past, like a video shop) and access to an extensive repertoire of communication functions, (e.g. engaging in general social interactions, providing and requesting information and help, and drawing attention). The displays are also permanent and thus allow learners to look at individual symbols for any length of time. Learners do not have to remember how to make the symbols in order

Table 9.1 Examples of various pictorial representational sets/systems

Text (traditional orthography)	Pictogram	Blissymbols	Picture Communication Symbols (PCS)	Widgit Rebus
Book				
Teacher				
Read				
Listen				
Angry				
Funny				
In				
Small				

Source: Petra Hagen (VIATAAL, The Netherlands) & Martin Pistorius (CAAC, Pretoria)

to reproduce them, as is the case with unaided systems. Portability, on the other hand, is one of the factors that limits the extensive use of aided systems (Von Tetzchner & Martinsen 2000). When using a communication board or book, it might also be difficult to expand the system, because there might not be sufficient space to add symbols.

9.3.2.3 *Displays of aided strategies: low technology and high technology*

Having discussed the different types of aided systems and their uses for a variety of communication functions, the issue of how they can be displayed should be investigated. As shown in Figure 9.1, aided systems can be displayed as either low technology or high technology.

Low technology refers to any device that does not use a computer chip or integrated circuit and typically refers to all the pen-and-paper-based systems. **High technology**, on the other hand, refers to all technology that uses a computer chip or integrated circuit and typically includes all communication devices that have speech and/or printed output as well as programming and editing capabilities (Lloyd et al. 1997a).

All low-technology options have the same purpose in mind: to be as portable as possible, to provide as many options as possible, to be as easy to use as possible (for the user and partner) and to be produced (customised, reorganised and updated) at the lowest possible cost (Wasson et al. 1997). Low-technology systems also work well together; for example in the classroom, Jabulani would benefit from the implementation of a schedule to organise his day and he might also use a communication board. Although a variety of low-technology systems are available, only two types, namely communication boards and communication vests, will be discussed, due to their suitability and value in the classroom context.

A **communication board** displays pictorial and/or orthographic symbols on paper, poster boards or any other suitable surface, and may be positioned horizontally (e.g. on a desk or lap tray), at an incline (e.g. on a sloped table or pillow) or vertically (Rose & Bornman in press). When designing a board, a number of issues have to be considered, i.e. the type of symbol system

most appropriate for the learner, the size and shape of the display (largely dependent on the learner's vision and range of movement), the size and shape of the symbols, as well as the vocabulary needs of the learner (Musselwhite & St Louis 1988). In most cases, learners will not be able to rely on only one communication board to meet all their classroom needs, and will require a generic board to talk about general aspects (e.g. one that contains often-used terms), as well as boards that could be used for specific activities (e.g. story time, music ring, arts and crafts) (Westling & Fox 2000).

With activity-specific boards, consistency in the placement of symbols is recommended in order to increase the speed of interaction (e.g. "help me" or "more" should be found at the same location across all activities). In addition, the Fitzgerald key is logical as it groups word classes (verbs, nouns, adjectives) together in syntactical order from left to right (Musselwhite & St Louis 1988). These grammatical categories are usually colour coded to facilitate visual and cognitive processing (Goossens' et al. 1994). Obviously, if traditional orthography is used and the learner is able to spell individual words, an alphabet board that can be used for spelling is advisable.

If learners indicate their selection on a communication board by means of touching or pointing to the symbol, it is called *direct selection*, and can be done with the hand, finger, foot or any other body part, as well as through a pointer attached to the body (e.g. head pointer or mouth stick) or eye gaze (Westling & Fox 2000). If, due to physical and/or visual impairments, consistent, reliable direct selection is not possible, or if this process fatigues the individual excessively, *scanning* is used. In scanning, the learner indicates a selection by signally to the partner that the desired item has been reached. This can be done either via auditory scanning or visual scanning. In auditory scanning the partner speaks the items one at a time, and the learner indicates his selection by any voluntary movement such as a purposeful eye blink or head nod (Shane 1996). Visual scanning is done on high-technology systems and is typically independent, with the learner activating a switch to signal a choice. Various types of scanning (e.g. linear scanning, row-column scanning and group

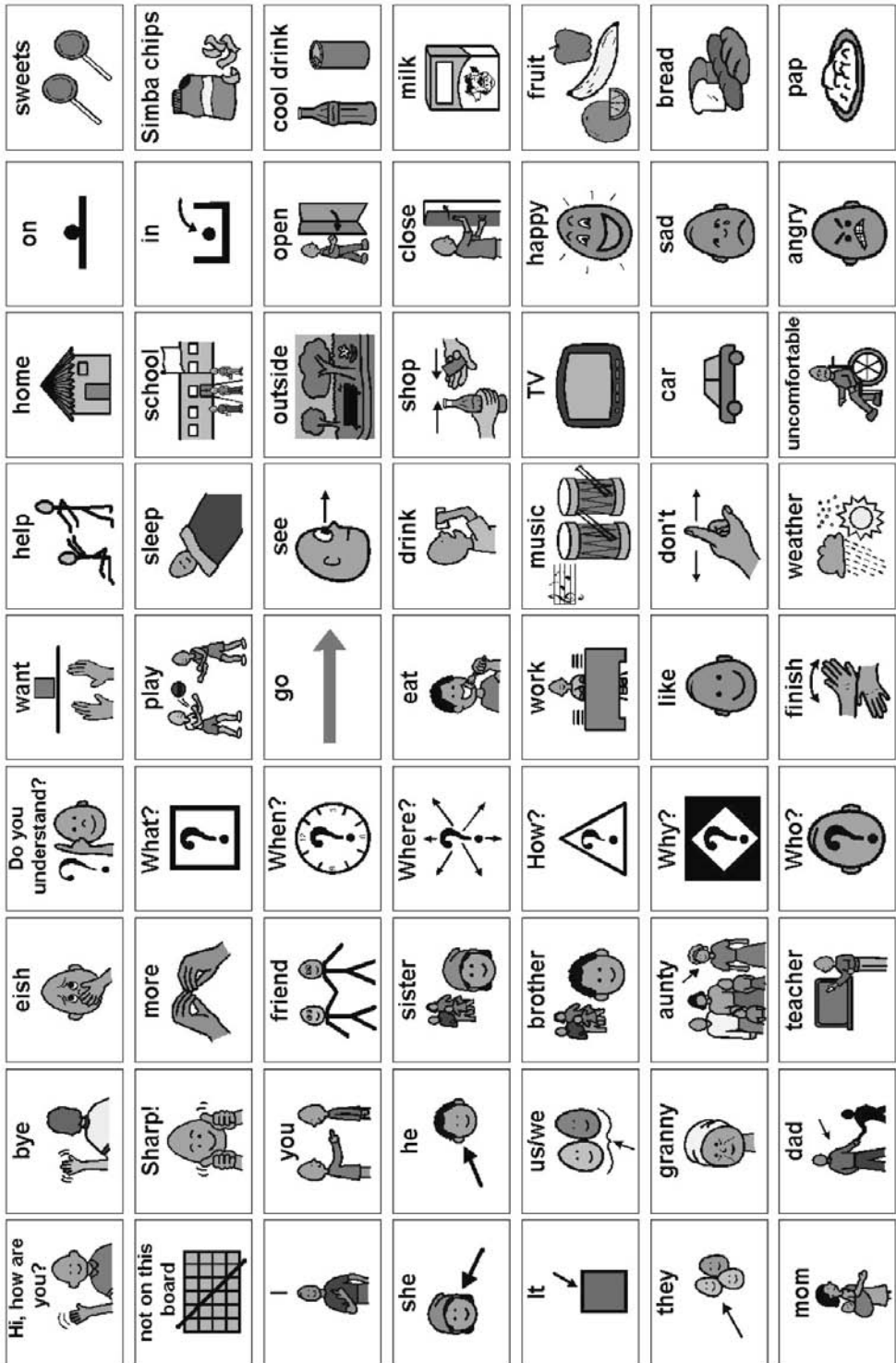


Figure 9.4 Example of a communication board using PCS

Source: Board design by CAAC / Made with Boardmaker™. Picture Communication Symbols (PCS) © Copyright 1981002004 Mayer-Johnson, Inc. All rights reserved worldwide. www.mayer-johnson.com

item scanning) and switches (e.g. pressure switch, leaf switch, button switch, pillow switch and eye-blink switch) are available to enable independent access of the device (Rose & Bornman in press).

Teachers can also wear **communication vests** (or aprons) with the symbols displayed on them for particular situations, e.g. during circle time. These vests are usually made from a fabric to which Velcro attaches easily. Vests are particularly useful when moving around; for example, in the classroom context when the teacher is teaching a new concept, as she will have her hands free so that she can point to the symbols on the vest (Goossens' 2001). This can only be done in special situations, however, as it is problematic if the communication system is linked to a person who often walks away. Vests are also useful in situations where communication boards are not easy to use, for example in the swimming pool. It is important that the teacher knows the exact location of all the symbols so as to be able to point to each one while speaking, without continually

looking down to find it. Learners will then have their own communication boards (similar to the teacher's) in front of them, to facilitate response and interaction.

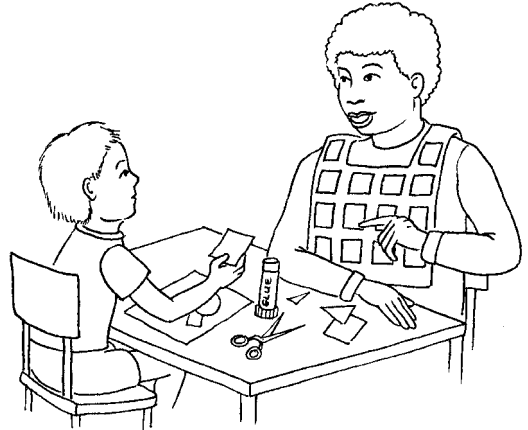


Figure 9.5 Example of a communication vest worn by a teacher

ACTIVITY

What low-technology systems do you think would best suit Jabulani?

Jabulani is already using object symbols (e.g. his cup) to communicate. This system will be expanded to include pictorial systems such as PCS. A number of different options related to free-play activities can be presented to him, e.g. for sand play, swinging, ball play and building blocks. These can then be presented on a communication board (e.g. attaching the symbols with Velcro onto a car mat) and Jabulani can then be asked: “Do you want to play in the sand, swing, play with the ball or play with the blocks? Show me what you want to do” while pointing to each symbol.

Aided systems can also be displayed on high-technology systems and these can have either digital or synthesised speech output. Digital speech refers to speech that is electronically produced when the human voice is recorded and digitised (Lloyd et al. 1997a). These devices typically make use of squares on which messages have been pre-recorded and which the learner then has to activate, usually by means of pressure. These devices thus function as elaborate tape recorders as a different message is recorded on each of the squares. These individual squares are then combined to form an “overlay”.

Some devices with digital speech output have the capacity for only limited messages such as the *little step-by-step communicator*, the *iTalk2* and the

ACTIVITY

If Jabulani should use a Macaw digital speech output system with an overlay that has eight options, which eight messages would you record for the “making a sandwich” activity?

Naturally there may be many different possibilities, and only some examples are given and not an absolute list. “My turn”; “Please help me”; “I want more”; “That’s enough”; “Yum, tastes good”; “What a mess!”; “Cut it”; “Spread it”.

EasyTalk, which has the capacity for two or four options, or for more extensive messages such as the *Macaw* that has 36 options on eight levels (see Figure 9.7). The biggest advantage of using digital

speakers in the multilingual South African context is that they are language appropriate, which means that Setswana can be recorded for Jabulani, Afrikaans for Kobus and isiZulu for Patience. Having a speech output device with a natural-sounding voice enables communication with a variety of communication partners (both familiar and unfamiliar) (Church & Glennen 1992), and also increases the learners' motivation to communicate as they view themselves as "having a voice". Illiterate or pre-literate learners can also use digital speakers as any symbols can be used, including objects in certain cases, as shown in Figure 9.7. The speech recorded on digital speakers can also ensure that the learner speaks in an age- and gender-appropriate voice, e.g. for Jabulani, a young boy's voice will be recorded on the device.

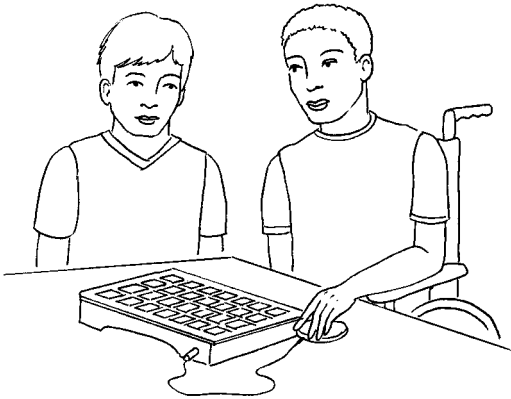


Figure 9.6 Example of the use of a speech output device

On the other hand, devices with synthesised speech output typically have keyboards, with either regular keyboard features such as the LightWRITER (Figure 9.7) or with icons such as the Pathfinder or Vantage (Figure 9.7), and learners are encouraged to type their own messages (thus generating language). This type of speech output is therefore also sometimes referred to as "text-to-speech" (Church & Glennen 1992). Devices with synthesised output typically provide either printed or speech output and are useful for enabling the learner to perform multiple tasks, e.g. broadening educational possibilities as academic tasks are expanded and independent homework is facil-

itated, delivering speeches (with the aid of the memory function, lengthy pre-stored messages are possible) and making leisure-time activities possible (e.g. playing computer games or writing letters). The majority of devices with synthesised speech output also have word prediction, which means that when a letter is typed, a small screen appears with a number of possibilities, e.g. when the learner types "p" a screen will appear, displaying "1 = paper; 2 = person; 3 = purpose; 4 = pain; 5 = pocket". If the learner had wanted to use the word "purpose" he would merely type "3" and the word "purpose" would appear. That means that only two keystrokes were used ("p" and "3") to type a word that has seven keystrokes. If the word that the learner wants does not appear on the initial list, typing will continue as the list will change and become more specific after every letter that is typed. Word prediction is a popular method for reducing the amount of effort needed from learners with physical disabilities to produce written work as it reduces the number of keystrokes required to type a particular message, thereby increasing typing accuracy and speed, enhancing the quality of written work and reducing fatigue (Newell et al. 1992).

ACTIVITY

See if your cellular phone has a "word prediction" option, switch it on, and type an SMS.

9.2.3.4 Advantages and disadvantages of low technology and high technology

One of the biggest advantages of low technology, particularly in the South African context, is surely the fact that it is inexpensive to produce, and that maintenance and repair costs are therefore also low, particularly if precautions were taken and the communication board was covered with plastic or laminated. Low-technology systems are relatively easy and quick to develop, and communication partners require little training in using them (except in cases where eye-gaze systems are used). Low technology can be used effectively as a tool to enrich and expand language. They are generally portable (e.g. a pocket-sized communi-



1. Little step-by-step communicator (Ablenet Inc, see website <http://www.ablenetinc.com>)
2. iTalk2 (Ablenet, Inc, see website <http://www.ablenetinc.com>)
3. EasyTalk 2-option with object symbols (Enabling Devices, see website <http://www.enablingdevices.com>)
4. EasyTalk 4-option with PCS symbols (Enabling Devices, see website <http://www.enablingdevices.com>)
5. Pathfinder (Prentke Romich Company, see website <http://www.prentkeromich.co.uk>)
6. LightWRITER SL35 LQBDO (Toby Churchill Ltd, see website <http://www.toby-churchill.com>)
7. Vantage (Prentke Romich Company, see website <http://www.prentromint.com>)
8. Macaw (Zygo Industries Inc. see website <http://www.zygo-usa.com>)

Figure 9.7 Examples of voice output devices

tion book), easily mounted on wheelchairs for non-ambulatory users, useful in many different environments (e.g. bath, beach, and playground) and new symbols can be added with ease if provision was made from the start. Low technology is also essential as a back-up system when high-technology systems fail e.g. if a person's device breaks down he uses an alphabet-based board.

Regarding disadvantages, low-technology systems impact negatively on eye contact (as both the learner and the communication partner have to look at the board), and the majority of low-technology options lack voice output and do not have memory capabilities (no lengthy pre-stored sentences that increase communication rate). Pos-

sibly one of the biggest disadvantages is the fact that people who are not familiar have to be close to the learner who uses the system to see what the learner is trying to communicate. Therefore, communication in a group is also difficult, unless there is a person in the group who can act as facilitator, for example by saying the messages out loud that are being communicated by the learner using the communication board.

High-technology systems have the advantage that the output can be either printed or oral. The power of having a voice to communicate with (as provided with high technology) cannot be overemphasised. It has the potential to give learners previously destined to live isolated, depend-

ent lives the ability to move into the mainstream and become participating and productive members of society. It means that we can now listen to lectures by people who cannot “speak” and read books by people who cannot “write”. However, the mere provision of a high-technology device cannot make a person a communicator, just as the provision of a microphone does not make a person a singer! But when such a device is applied appropriately to functionally address the communication needs and wants of a learner, it has great potential to provide greater independence. More often than not, these devices have word prediction possibilities (which have already been discussed), and they generally can be used in different communication situations (e.g. for telephone conversations) and they also provide opportunities for increased communication functions (e.g. singing). As with low technology, high technology can also be mounted on wheelchairs if needed.

On the negative side, learners and their communication partners (e.g. teachers and parents) may be hesitant to start using high technology due to the fact that these systems might look very complicated to operate, inducing “technological anxiety” (Church & Glennen 1992). Devices with digital speech output typically make use of pre-recorded sentences and therefore learners cannot generate new messages. This can be particularly frustrating for learners with intact intellectual and literacy skills. Synthesised speech output devices, on the other hand, are not available in 10 of the 11 official South African languages, some individuals do not like quality of the computer-generated voice (describing it as too tinny), and literacy skills are required to generate novel messages which are not mere combinations of already existing phrases. All high-technology systems are relatively expensive (in terms of the device itself, the cost of training the learner and communication partners, and maintenance, insurance and repairs). Digital speakers on average appear to be slightly less expensive than devices with synthesised output. Some devices are heavy, thus reducing portability, which is a particular concern for ambulatory users. Finally, high-technology devices cannot be used in all environments, for example where there is a lot of moisture like in the bathroom or on the beach, or when it is raining.

9.4 AAC SYSTEM SELECTION: HOW TO DECIDE WHICH SYSTEM TO USE

Having looked at the various AAC systems, the question arises of how to choose one. What would Jabulani need? Will he benefit from an aided or an unaided system, or maybe from both? The successful selection of a system depends on the extent to which the features of a system (aided and/or unaided) are matched to the abilities and needs of the learner.

In the above section the features of the different systems were described and therefore this section will deal only with the selection of an appropriate system. Firstly the teacher should determine how the learner functions in the most important areas of development (i.e. communication and language; cognitive, perceptual and representational; motor; sensory and social skills). These areas are interlinked, and attempts to segregate them are merely done for clarity. It is also important that these guidelines should not be seen as so-called prerequisites for communication, and intervention can commence before they are in place. Rather they should be viewed as pointers that can indicate where intervention should start and be used to guide the process. The first choice that must be made is whether an aided or an unaided system, or both, would be most appropriate.

9.4.1 Communication and language skills

A few pointers should be kept in mind when describing communication skills: *Does the learner show an intention to communicate?* All individuals are born with the desire to communicate and do communicate in some way or the other. However, for those with little or no speech, this process breaks down, resulting in their becoming passive/withdrawn or displaying challenging behaviour. The goal of intervention for passive/withdrawn learners is to create an environment in which they are stimulated to want to interact. Sometimes a device with digital speech output such as the *iTalk2* (Figure 9.7) could be effective in enticing a learner into interaction. A generic message such as: “Hello, can I play with you?” is effective as the communication partners will under-

stand the message immediately and, as it is put in question format, respond to it. The second question that should be asked is: *What does this learner understand?* (receptive language). Determine whether the learner understands single words and/or simple phrases, if he is able to follow a conversation, understands humour, etc. Usually when receptive language is limited, learners will mostly make use of object symbols and/or pictorial symbols displayed on either low or high technology, and/or gestures.

Thirdly, ask: *What modes of communication does the learner currently use?* When attempting to implement any AAC system, the focus is not on replacing existing communication but on expansion; for example if Maria is already using some manual signs, this might be the preferred modality and could be expanded, or if Neo is already pointing to objects, this might be expanded to include graphic symbols (keeping in mind that interaction is usually multimodal, i.e. using more than one system). The fourth question deals with communication functions: *What does the learner want to achieve by communicating?* These could be informational functions (e.g. requesting help and requesting information) or could be social (e.g. greeting and protesting), and attempts should be made to teach the learner a broad repertoire of functions, otherwise only the “request” function is used (Romski & Sevcik 1988).

ACTIVITY

Jabulani makes use of multimodal communication. What different communication means can you identify?

Speech (few intelligible words); pointing to objects (e.g. a cup); facial expressions, vocalisations (crying and screaming); gestures

9.4.2 Cognitive/perceptual and representational skills

It is difficult to separate communication and cognition in young children and in learners with little or no functional speech. However, a few questions that could be asked in this domain are: *Is the learner able to establish joint attention?* In other words, is the learner capable of directing some-

one else’s attention to the focus of his own attention? The aim might be to draw someone’s attention to something in the physical surroundings (e.g. an object or event) or to convey an idea. Joint attention has been claimed to be the essence of communication and is necessary for language acquisition. *Is the learner aware of cause-and-effect relationships?* i.e. that he has an influence on the environment, for example when pressing a light switch to switch the light on, or making a sound (vocalisation) to call somebody.

Does the learner have object permanence? Sometimes communication is about something that is not present, for example requesting milk that is in the fridge. This implies that the learner needs to know that the milk exists even if he cannot see it. Object symbols often provide the easiest level of entrance into a communication system. Therefore, if learners are still acquiring cause-and-effect and/or object permanence, this would be the level at which intervention would start. As this is mastered, attempts can be made to move to pictorial symbols that are slightly more difficult to understand.

However, Von Tetzchner & Martinsen (2000) found signs to be more meaningful to individuals with severe intellectual impairments than pictorial symbols. It is difficult to attach a so-called cognitive age level to the different levels of representation and teachers should rather attempt to determine if the learner understands photographs, line drawings (e.g. PCS) or print. Print will always be the most difficult to acquire as it is an arbitrary system. Literacy forms an important part of AAC intervention, and if a learner is literate, many options are available, for example low-technology alphabet-based boards or high-technology synthesised speech output. Learners who are visually impaired can often comprehend the manual signs more easily than pictorial (graphic) symbols due to the kinaesthetic feedback they provide (Von Tetzchner & Martinsen 1993).

9.4.3 Motor skills

This area has a direct influence on the selection of a particular symbol system. Questions such as *How effectively can the learner use his hands?* should be asked, as this can be indicative of the extent to

which signs might be used. Generally the rule of thumb is that the more physically involved the learner is, the higher the need for a high-technology system becomes. If little hand function is present, alternatives such as using a switch to activate a device with speech output can be considered. Selecting an appropriate switch is dependent of the movement the learner can make (e.g. slight pressure or a sweeping movement), the site at which the switch will be positioned (e.g. the arm, head, leg, chin), the type of switch (e.g. pressure switch, sip-puff switch, eye-blink switch) and how the switch will be mounted and positioned (e.g. by means of a gooseneck). Correct positioning is an important part of intervention for learners with motor impairments, and this will influence switch selection. If the learner has minimal hand or head function, direct selection will be preferable, as this is significantly faster than scanning. Learners with apraxia experience signing as difficult due to the problems they experience with motor planning.

9.4.4 Sensory skills

The most important senses for communication purposes are vision and hearing. The first question therefore is: *How well can the learner see for communication purposes?* focusing on functional vision and not on visual acuity. This has implications for the graphic symbols that are used, for example what type of symbol is selected (e.g. object symbols are easy to feel, as are pictorial symbols where the lines of the symbols have been raised so that the learner can feel them), the background colour of the symbol (generally it is easier to see a white symbol on a black background), the size of the symbol, and the placement of the symbol (e.g. if a learner has peripheral vision the symbols might be placed to the side as opposed to the more common “in the middle” position). For blind learners, exposure to Braille is essential. However, when the learner is not yet able to learn and use Braille, adaptations can be made to make symbols more tactile (e.g. by changing the surface of the symbol). This means that pasting a piece of sandpaper on the symbol for “sand play” enriches it as the learner receives the tactile cue for “sand”.

The second question is: *How well can the learner hear for communication purposes?* With the high incidence of middle-ear infection for some learners with little or no functional speech (e.g. learners with Down syndrome), it is important to have regular hearing tests. If learners are unable to rely on auditory input, it is important to increase the use of visual stimuli, for example through the use of signs and/or graphic symbols. For the purpose of this chapter, learners who are deaf-blind will not be described although they rely on tactile symbols, for example through the use of the four-handed sign system.

9.4.5 Social skills

This relates to what learners are able to do with their communication skills, and the environment in which they are expected to function. Ask: *Who does the learner communicate with?* bearing in mind that the choice of communication partners for learners with little or no functional speech is often restricted. More often than not interaction with peers is limited and most of the interaction is with adults.

9.4.6 Communication needs

Communication needs, based on interests, thoughts and activities and how they can be included in an optimal vocabulary, should be addressed.

- How extensive is the vocabulary that the learner would require? What would allow optimal participation in the current situation? What are the learner’s interests? How old is the learner? Remember that the vocabulary you choose should be age-appropriate, e.g. for a teenager, one would not include the phrase “Hello, how are you?” on the device for peer interaction, but rather “Howzit?”
- The vocabulary should cater for the interests of the individual, e.g. if the learner particularly likes the Teletubbies, provision should be made to include vocabulary that would allow for that.
- The vocabulary that is selected for the learner should also enable communication in as many settings as possible, for example by using the

word “more” the learner can indicate “more painting”, “more play”, “more juice”, etc.

- Finally, the needs and the priorities for the family should be considered. If they feel that phrases such as “thank you” and “please” should be included as this would make the learner more acceptable in their community, these phrases should be added. In addition, things of importance for a family, for example family jokes and stories, should be added (e.g. “When Granny burnt the cake”).

9.5 CLASSROOM STRATEGIES

Learners who are taught AAC have been unable to acquire communication skills in a typical environment. Therefore they require an adapted environment, which in essence means that they should be provided with the most effective communication means (aided and/or unaided) that will enable interaction in all situations with as many communication partners as required. A number of different strategies for implementing AAC in the classroom context will be discussed.

9.5.1 Schedules

Schedules are not communication systems *per se*, but rather tools to provide a structure and overview of classroom activities, and they are included in this chapter due to their appropriateness in the classroom (Figure 9.8). Most teachers have some way of indicating their classroom routine, but more often than not it is only presented in written form, making it incomprehensible for the learners with severe disabilities who are unable to read. Think about it, we would not write our personal “to do” list in a language (e.g. Russian) that we do not understand!

In classrooms, schedules using aided systems (objects, photographs, line drawings or print) can be displayed to indicate the activities the learners will be carrying out on that day. Learners with autism, learners with challenging behaviour and many learners with learning impairments, in particular, may benefit from schedules. Schedules provide learners with consistent cues about the daily routine so that they can understand the structure or sequence of events, enabling them to


anticipate what will happen next and reduce anxiety between transitions (decreased anxiety often means decreased challenging behaviour) (De Clercq 2003; DePaepe et al. 1993). However, it is impossible to maintain absolute sameness, day in and day out. When changes occur, schedules can be used effectively to explain these changes to the learners, giving them the opportunity to adjust to the idea and instilling a feeling of having some control over the day (Sewell 1998). For the purposes of this chapter, a general preschool classroom schedule will be described and not a specific schedule for an individual learner, as that would imply that the schedule needs to be adapted for that learner’s unique needs.

When constructing a schedule, start by writing down, in chronological order, the classroom timetable, and identify the type of aided symbol(s) that will be used to represent the activities. Irrespective of the type of symbol selected, it will always be accompanied by the written word. Finally, a decision regarding the format of the display (e.g. shoe boxes, plastic bags, schedule boards or books) should be made and all the symbols should be collected in one place.

When implementing a schedule in the classroom, the schedule should be displayed at an appropriate eye level where all learners can see and access it. The teacher should point to the symbol for the next activity and discuss it. Symbols might also be taken from the schedule and handed to a particular learner, with an instruction such as: “It is snack-time, Jabulani. Look, snack-time. Let’s get the placemats.” Jabulani can then use the symbol as a memory cue for getting out the placemats. Placing the symbol in a “discard” box, turning the symbol over, or moving an arrow to the next activity can all be used to indicate a completed activity. It is vital that teachers look for indicators that learners understand the schedule, for example taking a symbol and then moving to the area where the next activity will occur, smiling or laughing when seeing a symbol for a preferred activity, or crying for an activity that is disliked.

9.5.2 General classroom strategies

In order to set realistic goals and expectations that will facilitate effective learning, teachers have















ACTIVITY	OBJECT/SYMBOL	PHOTOGRAPH OR LINE DRAWING
Circle time Opening		 carpet time
Weather		 weather
Theme discussion		 wool
Snack time		 snack
Arts and crafts		 paint
Outside play		 play

Figure 9.8 Schedule

to understand the different learners and their abilities. It is also important that teachers understand why what they are teaching is important for these learners and how it will influence their lives – now and later – and that this impact will be either positive or negative.

Classroom-based AAC instruction is, however, not always straightforward. Teachers often view teaching as “one-way” communication where they have the knowledge and the learners have to listen, disregarding the important principle of reciprocity (alternating between giving and receiving), in spite of outcomes-based education that promotes participation. This phenomenon decreases participation and learners become either increasingly passive or withdrawn or start displaying challenging behaviour as a sign of their general level of frustration.

When teaching learners with little or no functional speech, it is imperative that anticipated gains are broken into small, measurable units, or else it is very easy to miss these advantages, which may result in teachers becoming increasingly discouraged. The concept of “small is beau-

tiful” should be kept in mind. This is in line with the new National Curriculum (to be implemented in 2006) with specific subject content and clear guidelines for assessment. Not having specific outcomes in mind could also result in monotonous, boring teaching with meaningless repetition, which has a detrimental effect on both learners and teachers (Smith 2004).

Owing to the heterogeneity of the learners who might benefit from AAC and the vast number of possibilities, it is difficult to provide general principles for classroom implementation. However, three of the most obvious ones will be described briefly.

(a) Multimodality

As described in the previous section, learners will usually benefit from using a combination of unaided and aided strategies, which implies that teachers need to use these strategies in teaching. Teachers can make use of keyword signing (i.e. signing the most important concepts while discussing a theme) or keyword graphics (i.e. the teacher highlights symbols by pointing to them

while talking naturally). For example the teacher would say “Who is at school today?” while either signing “who”, “school” and “today” (keyword signing) or while pointing to the symbols for “who”, “school” and “today” on the communication board or communication vest. For both these strategies the auditory input (speech) is thus supplemented by the visual input (signs or pointing on the communication board). These are total

immersion approaches for teaching learners to understand and use unaided or aided systems, by providing them with a strong receptive language foundation (Dada 2003; Goossens’ 2001). An example of a song board (Figure 9.9) and a rhyme board (Figure 9.10), both locally developed, are included to illustrate some of the teaching materials that teachers might use while implementing keyword graphics.

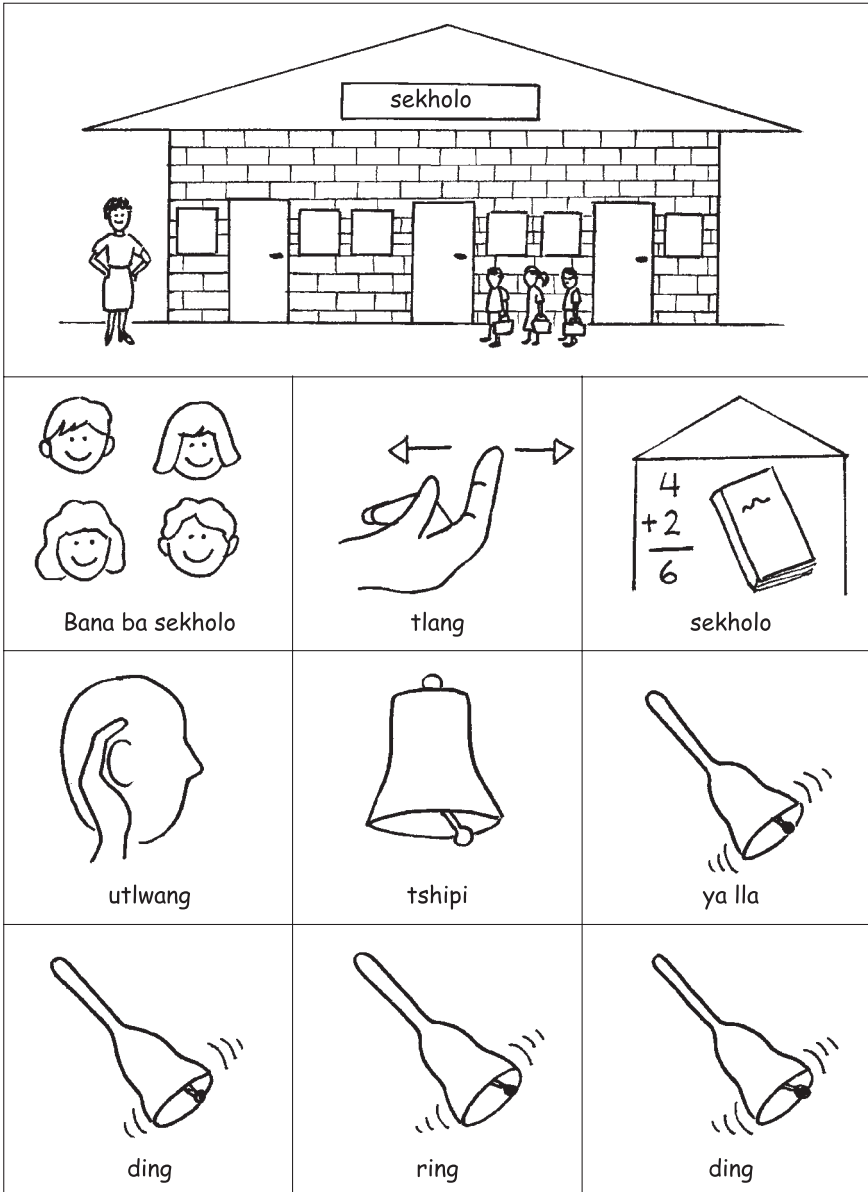


Figure 9.9 Example of a song board (*Bana ba sekholo*)






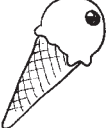

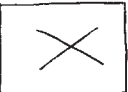
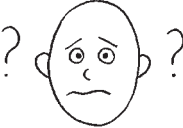



 Akkedis	 Akkedis
 vir wat	 is jy lus?
 vir lekkers	 of roomys
 sê my gerus	 jy maak 'n groot fout
 jy het jou misgis	 vir vliegies
 en muggies	 vir dit is ek lus !

Figure 9.10 Example of a rhyme board (Akkedis)

(b) Planned teaching in natural situations

It is generally accepted that learners with severe disabilities learn best when they are in situations that they perceive to be familiar and non-threatening. Research has also indicated that these natural situations are appropriate for teaching these learners to use aided and/or unaided systems (Blischak et al. 1997; Kaiser et al. 1992). In planned teaching a specific teaching goal has been decided on in advance. This means that

when the teacher wants to teach the concept “more”, a mealtime activity can be selected, and the learners’ sandwiches can be cut into small squares (as opposed to the traditional half slice) so that they have many opportunities to indicated “more” to request every piece of the sandwich.

ACTIVITY

How could Jabulani’s teacher go about teaching him to request help?

An activity that he already knows and likes can be selected, e.g. stringing beads. The beads can then be placed in a see-through container that Jabulani is unable to open independently. When the teacher sees that he is having difficulty, she can say “Must I help you?” while signing “help” or pointing to the symbol for “help”.

Planned teaching in natural environments also gives the teacher the opportunity to provide logical stimuli (e.g. when Precious requests milk, she receives milk) and naturally occurring, real consequences. This means that the learners’ communication attempts will affect the environment, which in turn corresponds with the intention of the communication – increasing the learners’ motivation (Kaiser et al. 1992; Light 1997). This is in stark contrast to giving praise in an attempt to reinforce a specific behaviour, for example where a learner conveys a message and the teacher responds with verbal praise: “Good talking!” or “Clever boy!” or tangible rewards like a star or sweets. By providing logical, naturally occurring consequences, learners start realising that they are able to control their environments, thus heightening their desire to participate.

(c) Watch – wait – react – positive feedback

This is a powerful teaching strategy when implementing AAC strategies. It is important for the teacher to take time to observe the learner in order to note any individual (idiosyncratic) forms of communication. In other words, Jabulani’s teacher has to observe him in order to find out that he shows his cup every time he is thirsty. She will also need to observe how he reacts when she introduces any of the planned strategies in the natural environment. Sufficient waiting time

(10–30 seconds) should be provided after using a particular strategy in order to note any interaction behaviour. Should nothing be noted, a cue/prompt can be given (verbal or tactile), and if some behaviour is seen – for example an attempt to make the sign, pointing, smiling, and/or a vocalisation – the teacher should react by providing a natural, logical consequence. By implementing this strategy, the learners will become aware of the relationship between what is happening in a situation, their own activities and the reactions of people in the environment (Von Tetzchner & Martinsen 1993).

ACTIVITY

How can the “watch–wait–react–feed–back” strategy be implemented on a playground?

The teacher watches Jabulani and notes that he loves to swing. She decides to push him once or twice and then holds the swing back so that he has the opportunity to request “more” (a planned strategy in a natural environment). While holding the swing back she waits and notices that he tries to move forward with his upper body. She interprets this as “more” and immediately reacts by saying, “Jabulani wants more swinging”, and then pushes him. When he has mastered this, she will expect him to sign “more” or point to the symbol for “more”.

9.6 GENERAL MYTHS RELATED TO AAC

From the above discussion it is clear that implementing AAC systems and strategies in the classroom context is a natural part of good teaching practice. However, due to limited insight into the implementation of AAC, certain misconceptions and myths prevail. Five of the most common ones will briefly be described (UAP 505 1993).

Myth 1: Giving learners access to AAC will inhibit their desire to use speech

Many people believe that once individuals use AAC they will stop trying to develop speech. The reverse is true in many cases. Research has shown that individuals who use AAC will actually attempt to communicate verbally more after being provid-

ed with an appropriate system/strategy (Bornman et al. 2001; Silverman 1995).

Myth 2: AAC can only be introduced when prerequisite skills have been mastered

Some assessment scales are based on Piaget’s stages of cognitive development and provide clear guidelines for “critical developmental levels” before AAC can be considered (e.g. joint attention and object permanence). However, with the movement towards the social model for disability and a focus on functionality, these prerequisites have been abandoned. Currently the focus is on ability (as opposed to disability), and how the environment can be adapted to provide opportunities for interaction (Bornman 2004). Too much time has been wasted in the past while waiting for certain prerequisites to develop.

Myth 3: Providing an AAC system will make learners communicatively competent

Communication is much more than using an AAC system or strategy. It is about sharing thoughts, stories, desires, emotions, etc. “Technology (or any other AAC system) alone does not make a competent communicator, any more than a piano makes a musician, or a basketball and a hoop make an athlete” (Beukelman & Mirenda 1998: 115).

Myth 4: AAC will solve all the learner’s communication problems

Sometimes the assumption is made that providing an AAC system/strategy is all that is needed to solve all the learner’s communication difficulties. That is incorrect. Sometimes providing AAC creates even more problems, for example when given a method by which to communicate, the learner may express things that others in the environment may not want to hear about, like abuse and neglect.

Myth 5: AAC requires sophisticated knowledge on the part of teachers and learners to be used effectively

This myth might stem from “technological anxiety” and the belief that the majority of AAC systems are high technology. However, more than 80 per cent of AAC is low-end, simple technology

that requires very little training to use (UAP 505 1993).

9.7 CONCLUSION

In this chapter augmentative and alternative communication means and strategies are discussed as a way of providing communication opportunities to learners with little or no functional speech. Being able to recognise all communication attempts by these learners and responding appropriately is a vital part of getting to know and understanding them. Having a means of communication is a vital part of interaction and learning within the classroom context (Bornman & Alant 1997). Teachers cannot teach these learners effectively if they do not understand their thoughts, wants and abilities. Strategies that are particularly useful in the classroom context such as schedules, communication boards, and communication vests are highlighted.

All individuals, irrespective of the complexity of their support needs, *can* and *do* communicate. This notion has to be embodied in the belief that every learner has the right to reach his full potential, and that all teachers have the skills to facilitate this process, given the correct training and support.

Questions

1. All teachers should be required to have a basic knowledge of augmentative and alternative communication systems and strategies. Do you agree or disagree with this statement? Justify your answer.
2. What AAC system would you select for Jabulani? Discuss the most important aspects that you would take into consideration and justify your particular choice/choices.
3. A debate arises in the staff room as to whether high-technology systems are superior to low-technology systems. What is your viewpoint on this? Justify your answer.

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Bibliography

- Alant, E. 1999. Students with little or no functional speech in schools for students with severe mental retardation in South Africa. *Augmentative and Alternative Communication*, 15(2): 83–94.
- American Speech-Language-Hearing Association (ASHA). 1991. Augmentative and Alternative Communication. *ASHA*, 33(Supplement 5): 9–12.
- Beukelman, D.R. & Mirenda, P. 1998. *Augmentative and Alternative Communication: management of severe communication disorders in children and adults*, 2nd ed. Baltimore: Paul H. Brookes.
- Blischak, D.M., Loncke, F. & Waller, A. 1997. Intervention for persons with developmental disabilities. In Lloyd, L.L., Fuller, D.R. & Arvidson, H.H. (Eds), *Augmentative and Alternative Communication: a handbook of principles and practices*. Boston: Allyn & Bacon, 299–339.
- Bornman, J. & Alant, E. 1997. A school-based demographic survey of non-speaking children’s communication and functional literacy skills. *South African Journal of Education*, 17(1): 15–20.
- Bornman, J. 2001. *The development of a primary level communication protocol for children with severe disabilities*. PhD dissertation. Pretoria: University of Pretoria.
- Bornman, J. 2004. The World Health Organization’s terminology and classification: application to severe disability. *Disability and Rehabilitation*, 26(3), 182–188.
- Bornman, J., Alant, E., & Meiring, E. 2001. The use of a digital voice output device to facilitate language development in a child with developmental apraxia of speech: a case study. *Disability and Rehabilitation*, 23(14): 623–634.
- Burd, L., Hammes, K., Bornhoeft, D.M. & Fisher, W. 1988. A North Dakota prevalence study of non-verbal school-age children. *Language Speech and Hearing Services in Schools*, 19(4): 371–383.
- Carter, M. 2003. Communication spontaneity of children with high support needs who use augmentative and alternative communication systems I: classroom spontaneity, mode and function. *Augmentative and Alternative Communication*, 19(3): 141–154.
- Church G. & Glennen, S. 1992. *The handbook of assistive technology*. San Diego: Singular Publishing Group.
- Dada, S. 2003. Aided language stimulation: what it is, why is it used and whom can it be used for? *Communiphon*, Autumn 2003 (334): 26, 29.

- De Clercq, H. 2003. *Mum, is that a human being or an animal? A book on autism*. Bristol: Lucky Duck Publishing.
- DePaepe, P., Reichle, J. & O'Neill, R. 1993. Applying general-case instructional strategies when teaching communicative alternatives to challenging behaviour. In Reichle, J. & Wacker, D.P. (Eds), *Communicative alternatives to challenging behavior: integrating functional assessment and intervention strategies 3. Communication and language intervention series*. Baltimore: Paul H. Brookes, 237–262.
- Department of Education. 2002. *Draft guidelines for the implementation of inclusive education* (second draft). Pretoria: Department of Education.
- Durand, V.M. 1990. *Severe behavior problems: a functional communication training approach*. New York: The Guilford Press.
- Goossens' C.A., Crain, S. & Elder, P. 1994. *Communication displays for engineered preschool environments*. Solana Beach: Mayer-Johnson.
- Goossens', C.A. 2001. *Engineering the classroom for interactive augmentative communication*. Two-day workshop. Pretoria, 22–23 February.
- Grove, N. 1990. Developing tangible signs with learning-disabled students: a review of the literature and an assessment procedure. *British Journal of Disorders of Communication*, 25: 265–294.
- Kaiser, A.P., Yoder, P.J. & Keetz, A. 1992. Evaluating milieu teaching. In Warren, S.F. & Reichle, J. (Eds), *Causes and effects in communication and language intervention*. Volume I. Baltimore: Paul H. Brookes, 9–47.
- King, D.L. 2001. *Boardmaker for Windows*. Solana Beach: Mayer-Johnson.
- Light, J.C. 1997. "Let's go star fishing": Reflections on the contexts of language learning for children who use aided AAC. *Augmentative and Alternative Communication*, 15(1): 158–171.
- Lloyd, L.L., Fuller, D.R. & Arvidson, H.H. 1997a. Glossary. In Lloyd, L.L., Fuller, D.R. & Arvidson, H.H. (Eds), *Augmentative and Alternative Communication: a handbook of principles and practices*. Boston: Allyn & Bacon, 522–543.
- Lloyd, L.L., Fuller, D.R., Loncke, F. & Bos, H. 1997b. Introduction to AAC symbols. In Lloyd, L.L., Fuller, D.R. & Arvidson, H.H. (Eds), *Augmentative and Alternative Communication: a handbook of principles and practices*. Boston: Allyn & Bacon, 43–47.
- Loncke, F. & Bos, H. 1997. Unaided AAC symbols. In Lloyd, L.L., Fuller, D.R. & Arvidson, H.H. (Eds), *Augmentative and Alternative Communication: a handbook of principles and practices*. Boston: Allyn & Bacon, 80–106.
- Matas, J.A., Mathy-Laikko, P., Beukelman, D.R. & Legresly, K. 1985. Identifying the non-speaking population: a demographic study. *Augmentative and Alternative Communication*, 1(1): 17–31.
- Musselwhite, C.R. & St Louis, K.W. 1988. *Communication programming for persons with severe handicaps. Vocal and augmentative strategies*, 2nd ed. Austin: Pro-ed.
- Newell, A.F., Arnott, J.L., Booth, L., Beattie, W., Brophy, B. & Ricketts, I.W. 1992. Effect of the "PAL" word prediction system on the quality and quantity of text generation. *Augmentative and Alternative Communication*, 8(4): 304–311.
- Romski, M.A. & Sevcik, R.A. 1988. Augmentative and alternative communication systems: considerations for individuals with severe intellectual disabilities. *Augmentative and Alternative Communication*, 4(2): 83–93.
- Rose, J. & Bornman, J. (in press). Low technology. In Quist, R.W. & Lloyd, L.L. (Eds), *Assistive technology: principles and applications for communication disorders and special education*. San Diego: Academic Press.
- Rowland, C. & Schweigert, P. 1999. *It's always time to learn: an environmental inventory to help teachers design learning activities for children who are deaf-blind*. Portland: Oregon Institute on Disability and Development.
- Rowland, C. & Schweigert, P. 2000. Tangible symbols, tangible outcomes. *Augmentative and Alternative Communication*, 16(2): 61–78.
- Rowland, C., Schweigert, P. & Dorinson, A. 2001. *Let's "talk". Meeting the communication needs of students who use alternative communication systems: planning for the transition to new environments*. Portland: Oregon Institute on Disability and Development.
- Sen, R. 2003. Questions and answers. *The ISAAC Bulletin*, 73: 5.
- Sewell, K. 1998. *Breakthroughs: how to reach students with autism. A hands-on, how-to manual for teachers and parents*. Verona, WI: Attainment Company.
- Shane, H. 1996. Auditory scanning. *Exceptional Parent: the Magazine for Families and Professionals*. July: 69.
- Silverman, F.H. 1995. *Communication for the speechless*, 3rd ed. Boston: Allyn & Bacon.
- Smith, S. (2004). The power of fun. *The Power of Vision: a publication of the Ablenet Consortium for Excellence in Special Education*, 7(3). Available at: <http://www.ablenetinc.com>
- UAP 505. 1993. *Assistive technology in the lifespan: an introduction*. Available at: <http://www.nau.edu/ihd/uap505/com/myths.htm>
- Von Tetzchner, S. & Martinsen, H. 1993. *Introduction to sign teaching and the use of communication aids*. London: Whurr.
- Von Tetzchner, S. & Martinsen, H. 2000. *Introduction to augmentative and alternative communication*, 2nd ed. London: Whurr.
- Wasson, C.A., Arvidson, H.H. & Lloyd, L.L. 1997. Low technology. In Lloyd, L.L., Fuller, D.R. & Arvidson, H.H. (Eds), *Augmentative and Alternative Communication: a handbook of principles and practices*. Boston: Allyn & Bacon, 127–136.
- Westling, D.L. & Fox, L. 2000. *Teaching students with severe disabilities*, 2nd ed. Merrill: Columbus.

MATHEMATICAL LITERACY AND DIFFICULTIES IN MATHEMATICS

10

ANNATJIE DEDNAM

Learning outcomes

After reading this chapter you should be able to

- ▶ determine the level of mathematical knowledge acquired when working with learners experiencing difficulties with mathematics
- ▶ identify underlying problems causing mathematical difficulties
- ▶ assess a learner's mathematical difficulties
- ▶ use error analysis to determine the problems learners experience in mathematics
- ▶ help learners to overcome mathematical anxiety and change their attitude toward mathematics
- ▶ support learners who experience difficulties with mathematics through the different phases of a mathematical lesson.

Key terms

mathematical concepts and processes ♦ *cognitive and perceptual skills* ♦ *mathematical skills* ♦ *abstract and symbolic thinking*

10.1 INTRODUCTION

Mathematics is important for learners in their success at school and to fulfil their potential later as adults (Hammill & Bartel 1995: 252; Stiff 1993: 3). According to Bezuk et al. (1993: 2), teachers are not the only ones who should be responsible for guiding learners to master mathematics. Even at primary school level, the learners themselves, their parents and their peers should also be involved in supporting learners to master mathematics. Some people believe that learners should start formal mathematics at school from their eleventh year when they are able to work with the abstract concepts.

Children come across mathematical concepts in their daily activities. At a young age children reveal their awareness of basic mathematical concepts by protesting if they think a sibling's piece of cake is *bigger* or sweets are *more* than theirs.

Perry and Conroy (1994: 145–146) emphasise that no child is able to avoid experiencing mathematics just as they experience language. Both are commodities of human existence. Each activity of a person has the potential to increase his knowledge of mathematics.

ACTIVITY

Can you think of mathematical activities babies and toddlers experience in the first two years of their lives? Think of stretching to reach the feeding bottle, crawling after objects on the floor, etc.

10.2 MATHEMATICS: A SHORT OVERVIEW

Since the origin of the human race, mathematics has been part of mankind. In the earliest years, humans used mathematical concepts in their daily lives even though they did not have any terms to formulate them. They used mathematical principles for survival purposes enabling them, for instance, to withstand the attacks of hostile tribes and to find food. People in the modern world also depend on mathematics to survive, but there is a difference, as these concepts nowadays are not only used for basic survival purposes but also to satisfy higher needs.

10.3 THE CONCEPT “MATHEMATICS”

Rosner (1993: 81) describes mathematics as “the mapping of language onto symbols”. Mathematics is basically about the properties of numbers and figures. Mathematics

- focuses on patterns and relations
- has a language of its own which requires the use of precise mathematical terms and symbols
- is an organised field of knowledge with interrelated and interdependent “content and process standards or strands” (Van de Walle 2004: 4).

Note

To avoid confusion, instead of using the terms “standards” or “strands” as used by Van de Walle, the term **mathematical areas** will be used. In addition the terms used by the education system in South Africa, namely **outcomes** for the main aspects within each mathematical area (**outcomes of concepts**

and **outcomes of process**) and the term **assessment standards** for specific content to be learned in each outcome will be used.

- **Outcomes in the concepts area** are numbers and operations, algebra, geometry, measurements, data analysis and properties.
- **Outcomes in the process area** are problem solving, reasoning and proof, communication, connections and representation.

10.4 CURRICULUM CHANGES IN TEACHING MATHEMATICS AT SCHOOL

According to Brown (1999: 3) through the years there was a pendulum swing in the school curricula between “... accurate use of calculation procedures and the possession of the ‘number-sense’ which underlies the ability to apply such procedures sensibly”. Brown characterised these two positions as **procedural** (calculation accuracy) and **conceptual** (the sensible application of procedures) (Brown 1999: 3).

As the mathematical concepts and procedures became more sophisticated and involved more than the traditional computation skills, changes in mathematical education during the past 15 years became obvious (Van de Walle 2004: 1) and will become more important and crucial in future.

ACTIVITY

Describe the changes in the mathematics curriculum since you were at school, up to the new curriculum.

Table 10.1 Examples of mathematical concepts as basic needs centuries ago in comparison with higher needs in modern times

Maths concept	Basic use of maths concepts	Higher use of maths concepts
Length/distance	Distance to hunting field	Distance of the moon from the earth
Mass	Mass of a stone	Mass of a piece of concrete to be lifted
Time	Leave at dawn to hunt	School starts at 8 o'clock
Speed	Speed of animals to be hunted	Speed of an aeroplane to stay in the air
Height	Height of mountains to cross	Height of a skyscraper building
Order or rank	Chief of the tribe	Rector; vice-rector; dean; head of department; senior lecturers; junior lecturers and assistants of a university

10.5 AREAS, OUTCOMES AND ASSESSMENT STANDARDS OF MATHEMATICS TO BE MASTERED BY LEARNERS IN THE FOUNDATION AND INTERMEDIATE SCHOOL PHASES

Hierarchical and parallel developments of mathematical literacy in the different fields take place from a very young age and proceed even after the person has become an adult. Hierarchically, learners first need to understand the elementary aspects of mathematical content, such as number concepts, before they will be able to master the more complicated content such as formal addition and subtraction concepts. On a parallel

level, learners master the concepts of addition and subtraction at the same time. For example, the *higher* the price of an object (i.e. *more* money is needed), the *less* money there will be left in one's purse. Learners are not supposed to master the area of concepts first and afterwards start with the area of process. These two areas are integrated and should be attended to at the same time.

10.5.1 Content to master in the area of concepts

Table 10.2 Basic knowledge and abilities to apply in daily situations

Outcomes	Assessment standards
1. Number and operations	<ul style="list-style-type: none"> • Understand numbers, their representations, relationships and systems. • Understand operations and their interrelationships. • Be able to compute and estimate fluently.
2. Algebra	<ul style="list-style-type: none"> • Understand patterns, relations and functions. • Represent and analyse mathematical situations and structures using algebraic symbols. • Use mathematical models to represent and understand quantitative relationships. • Analyse change in various contexts.
3. Geometry	<ul style="list-style-type: none"> • Analyse two- and three-dimensional geometric shapes and know their geometric relationships. • Specify locations and describe spatial relationships. • Apply transformations and use symmetry to analyse mathematical situations. • Solve problems through visualisation, spatial reasoning, and geometric modelling.
4. Measurement	<ul style="list-style-type: none"> • Know measurable attributes and processes of measurement. • Apply techniques, tools and formulas to determine measurements.
5. Data analysis and probability	<ul style="list-style-type: none"> • Formulate questions on data, and collect, organise, and display the data to answer the questions. • Use appropriate statistical methods to analyse data. • Develop and evaluate inferences and predictions that are based on data. • Understand and apply basic concepts of probability.

Source: Adapted from Van de Walle 2004: Appendix A

10.5.2 Concepts to master in the area of process (Van de Walle 2004: 4–5)

The process area for mathematics enables learners to apply their basic mathematical knowledge to more complicated situations.

Table 10.3 Concepts to master in the area of process

Outcomes	Assessment standards
1. Problem solving	A vehicle with which to build new mathematical knowledge
2. Reasoning and proof	The ability to provide an argument or rationale as an integral part of every answer
3. Communication	The ability to talk or write about, describe or explain mathematical ideas
4. Connections	The relations between mathematical concepts and insight into how mathematical concepts build on one another
5. Presentation	Mathematical ideas presented through charts and other visual aids become easier to understand

Source: Adapted from Van de Walle 2004: Appendix A

10.6 PREREQUISITES FOR LEARNERS TO START WITH FORMAL MATHEMATICAL CONCEPTS

Underhill (in Kennedy & Tipps 1994: 104–105) discusses the following development levels that learners should have reached before being successful in formal mathematics at school.

10.6.1 Content level

Learners should, for example, be able to count objects correctly and significantly (which differs from rote counting) as well as understand and use the basic addition and subtraction, and multiplication and division operations.

10.6.2 Educational level

When learners can relate pictures to mathematical computations they are also able to relate the mathematical concepts to practical situations in their surroundings and to solve the mathematical problems.

10.6.3 Development level

Intellectual development is mainly involved here – it is the ability to work with mathematical concepts. In the initial school years while learners are still concrete-orientated, they form visual images of objects they use in mathematics. Together with this their mathematical knowledge increases.

10.6.4 Emotional level

Emotionally, learners develop a positive attitude towards mathematics and a will to work with the concepts.

10.6.5 Contextual level

Learners should realise that mathematical concepts can be related to their daily lives and they should know how to apply these concepts in real-life situations.

10.7 COGNITIVE PREREQUISITES FOR MASTERING MATHEMATICAL CONCEPTS AND PROCESSES

Hammill and Bartel (1995: 254–255) base the pre-conditions for mastering mathematics on two levels of cognitive development. Learners should understand and acquire elementary mathematical concepts on the first level, and on the higher level they should be able to work with advanced mathematical concepts. Cognitive skills develop while learners are involved in their daily activities, therefore they are unaware of the mathematical concepts and processes involved in these activities.

The two levels of cognitive development do not always follow each other consecutively but the higher cognitive level gradually develops together with the lower cognitive level.

10.7.1 Cognitive skills for mastering lower level mathematical concepts and processes

The elementary cognitive skills are, according to Hammill and Bartel (1995: 255), the ability to

- remember arbitrary associations: five stars are the same as five sweets, five dogs, etc.
- understand basic relationships: 😊😊😊😊 are four boys

- make low-level generalisations: two sweets plus one sweet is three sweets.

Elementary cognitive skills are based on awareness of the following:

- **Classification** of objects according to common characteristics, such as *form* or *colour*
- **Seriation** of objects by arranging and processing them in a logical order, e.g. from *short* to *tall*
- **Relations** between mathematical units such as numbers, e.g. in the number order 2 4 6 8, each number increases by the same number of units, namely 2
- **Temporal awareness**, i.e. executing events in the correct order
- **Spatial relationships**, i.e. seeing that an object is *in front of* or *behind* another (or nearer to or further from another)
- **Conservation of form**, i.e. knowing that the mass of two objects of the same shape and size may differ
- **Conservation of liquids**, i.e. realising that the volume of liquid in a narrow glass may be the same as the liquid in a wide one
- **Conservation of numbers**, i.e. understanding that if the arrangement of a number of objects is changed, e.g. from a row to a disordered arrangement, the number stays the same

10.7.2 Cognitive skills for mastering more advanced mathematical concepts and processes

Higher-level cognitive skills become crucial as the learners proceed to higher school grades where more complicated mathematical concepts and processes are taught. The learners should be aware of strategies for applying their acquired knowledge and for solving problems that enable them to execute specific mathematical tasks.

ACTIVITY

If a learner experiences difficulties with borrowing from the tens to subtract 57 from 82, will he be able to subtract fractions? This is highly unlikely, as using fractions is on a higher level than using whole numbers.

Knowledge of the different mathematical concepts and processes is not enough to know which strategy to use to solve a problem correctly. Learners should also be aware of their own knowledge of the mathematical concepts and processes (metacognition). This knowledge would enable them to use the applicable strategies and methods to solve a mathematical problem and be able to monitor the application of the strategies and methods used while solving the problem. The learners' metacognitive skills enable them to apply more complicated mathematical skills.

Metacognitive knowledge and mathematics

According to Meese (1994: 21), "metacognition means knowledge about one's own thought processes and learning. It involves not only an awareness of the strategies and skills necessary to accomplish a task effectively, but also the ability to monitor one's performance while completing the task."

Learners with good metacognitive skills are, according to Schoenfeld,

"[g]ood problem solvers [who] monitor their thinking regularly and automatically. They recognize when they are stuck or do not fully understand. They make constant decisions to switch strategies, rethink the problem, search for related content knowledge that may help [them], or simply start afresh" (Van de Walle 2004: 54).

Borasi (1996: 32) discusses the three metacognitive categories that, according to Schoenfeld, are important for mathematics:

1. "Individuals' declarative knowledge about their cognitive processes." This is the knowledge one has about mathematics.
2. "Self-regulatory procedures, including monitoring and 'on-line' decision-making." This is the ability to monitor one's success and relate it to the task one is busy with by changing strategies if the task is not successfully accomplished and, lastly, to check the answer against the estimation made earlier.

3. “Beliefs and affects and their effects on performance.” This is about one’s endurance and self-monitoring about the importance of a task and of the time spent on it, and deciding whether the task was accomplished or not.

10.8 THE DEVELOPMENT OF MATHEMATICAL KNOWLEDGE

Mathematical knowledge starts at a concrete level and advances through a semi-concrete level to the abstract level on which the learners are able to work without concrete apparatus. All learners do not reach the abstract level at the same time and some never reach it. The time it takes them to reach this level depends on the contribution of parents, peers and mainly on the teaching strategies and methods applied by teachers. Because of a lack of lower-level cognitive knowledge, some learners may find it difficult to master mathematical concepts and processes. When working with new mathematical concepts, learners proceed more or less through the following phases:

- **Phase 1:** The first impression of a new concept is initially generally intuitive, vague and unanalysed.
- **Phase 2:** When encountering a number of similar examples, their grasp of the concept improves.
- **Phase 3:** By exploring the concept systematically, there is an improvement in understanding it.
- **Phase 4:** The grasp of the principle is so well established that it is possible to describe it in precise mathematical terms.

All learners do not go through all these phases but skip some of them. Others never reach the last one or two levels and they continue to make errors.

10.9 BARRIERS CAUSING MATHEMATICAL DIFFICULTIES

All barriers influencing a learner’s ability to master mathematical concepts and processes are linked. As they affect each other it is not always easy to pinpoint a specific one.

Mathematical difficulties can be caused by intrinsic and extrinsic barriers. The latter include barriers caused by the system, the school and environment. Intrinsic barriers refer to barriers within the learner that may hamper his ability to cope with mathematics.

ACTIVITY

List the factors that may be related to the school and the system and indicate how they affect a learner’s knowledge of mathematics. For example, can the teacher be the cause of a learner’s mathematical difficulties, and if so, how? Also indicate the underlying relationships between these factors before reading further.

10.9.1 Systemic barriers

10.9.1.1 Absence from and changes of school

Regular absence from school and change of schools are two of the most important causes of mathematical difficulties, as they cause backlogs in mathematical knowledge. Learners who are often absent from school miss work, which causes gaps in their mathematical knowledge and they find it difficult to catch up. When changing schools they may miss concepts that were already being taught in the new school. Learners who experience backlogs find it extremely difficult to catch up, especially if the teacher is not adequately trained to render teaching support or, due to a variety of factors, fails to identify and rectify the problem.

10.9.2 Inadequate teaching

For Riedesel (1990: 2) and Hammill and Bartel (1995: 258) the teaching of mathematics is the most important factor that enables learners to master it. Freudenthal (Treffers & Beishuizen 1999: 27) accuses of neglect those educators who presume that mathematics is only subject matter to be transmitted instead of “... a human activity”. Learners should always be “involved in mathematization”.

Learners who have already mastered the basic mathematical skills find the advanced mathemati-

cal processes less difficult. Many teachers tend to presume that all learners have the basic preschool mathematical knowledge when they enter school for the first time. As this is often not the case, teachers should determine what the learners already know. This is also applicable to learners who come from a lower grade at the end of the previous year or from another school.

When teaching mathematics, some teachers leave the learners to discover new mathematical concepts and processes haphazardly on their own instead of explaining unfamiliar concepts step by step. Some learners may be able to discover the concepts on their own, but most need detailed or at least some explanation, while others do not understand them even with explanation. They know few strategies or methods to solve the problems, and guess the answers. If they answer a question correctly they are unable to explain how they arrived at the answer. Some learners do have good insight into concepts they learned outside the school or in the preschool years, but cannot understand them when they are explained to them at school, or cannot relate them to relevant explanations at school.

Parker (1993: 64) mentions that some teachers are not familiar with all mathematical concepts themselves and they do not know how to teach the concepts to the learners. Others are not interested enough in mathematics and are unable to detect any inadequate knowledge a learner may manifest.

Some teachers teach subject matter that the learners do not understand as it is at too high a level. These learners execute the mathematical steps as shown but have no idea what the benefit might be of knowing the concepts or how to apply them in the real world, since the teacher also fails to provide real-life experiences.

There are still teachers who concentrate mainly on the cramming of the plus, minus, multiplication and division combinations without making sure that the learners understand the underlying processes of these combinations. Teachers who are rigid in their teaching of mathematics expect the learners to use only the problem-solving strategies taught to them in class and do not allow them to use, experiment with or explore other methods. Other teachers concentrate only

on the correct answer and do not determine the step(s) in the process in which the learner made a mistake.

There are teachers who label learners who have problems in mathematics as “lazy” or say that they do “not have the ability to do maths” instead of finding the reasons for the learners’ difficulties.

10.9.3 Barriers within the learner

10.9.3.1 Difficulties with abstract and symbolic thinking

Learners experiencing difficulties in abstract thinking find it difficult to see the relationships between numbers and objects and are unable to measure unfamiliar units. Teachers tend to teach these learners to manipulate the numbers, which gives the impression that they are “good at mathematics” although they have little understanding of the actual mathematical concepts.

10.9.3.2 Reading difficulties

Poor reading causes difficulties in reading mathematical combinations and constructions of word sums. These learners often get high marks for mental arithmetic and mathematical competence tests but struggle with mathematical processes and word sums as they cannot read and comprehend the text.

10.9.3.3 Emotional problems

- **A negative attitude towards mathematics.** These learners become stressed while busy with mathematics so they tend to avoid it. They have hypochondriac complaints, and their poor attention during the lesson or absence from school causes such a backlog that they cannot catch up with the work.
- **Lack of self-confidence when doing mathematics.** These learners believe that they cannot do mathematics and are easily discouraged if the work seems difficult.
- **Passivity.** These learners give the impression of a lack of interest, and as if they are tired, sleepy or ill.
- **Anxiety.** These learners become anxious, as they are afraid to make mistakes, especially if their teacher’s demands are very high.

10.9.3.4 Attention deficit-related problems

- **Short attention span and attention distraction.** These learners do not follow all the steps needed to complete a mathematical problem. Others leave the work uncompleted or they skip some steps. They often ask the teacher to repeat the explanations or for help.
- **Hyperactivity and impulsivity.** These learners seem to be careless and inattentive and they make lots of unnecessary mistakes. They tend to give an answer before thinking carefully about it. (There is more about this topic in Chapter 16 on learning impairments.)

10.9.3.5 Problems with basic underlying skills

Note

As problems with basic underlying skills are discussed in full detail in Chapter 16 on learning impairments, you are referred to that chapter. Here only the effect they have on mathematics is discussed.

The previously mentioned factors giving rise to mathematical difficulties may be directly involved. There are, however, underlying skills that are secondary in mathematical difficulties.

1. **Gross motor, visual motor and tactual motor skills.** Especially in the preschool phase, if learners do not perceive and manipulate objects around them with attention, they often experience problems in mathematics later on at school
2. **Fine motor coordination, tactual kinaesthetic and visual motor integration skills.** Learners who did not have opportunities to manipulate three-dimensional objects to perceive their texture, size, mass and form may find mathematics difficult. They may also find it difficult to write letters and numbers.
3. **Perceptual skills.** These skills enable one to give meaning to data perceived through ones senses.

Visual perceptual difficulties

- **Space orientation and the determination of direction.** Learners who do not give attention

to their surrounding space cannot orientate themselves in space. They will not be aware of the direction of objects, the relationships between the objects, and their differences and similarities, which are important concepts for mathematics. They may experience problems with place value and would find it hard to understand that the value of the 4 on the left in the number 44 is 40 units and the one on the right is only 4. In a problem such as $34 + 61 = \square$, they confuse the *tens* and *units*. They become confused when working on a number line. They find decimals and negative numbers difficult.

- **Visual discrimination and form constancy.** They confuse numbers such as 3, 8 and 5, and the + and \times , and - and \div signs, etc.
- **Figure ground discrimination.** These learners tend to lose their place, especially when they revise the steps or order in which they completed a mathematical problem.
- **Visual memory.** These learners find it difficult to remember the steps they have to use to solve a problem. They often check the examples in order to follow every step.

Auditory perceptual problems

Auditory perceptual problems have less effect on mathematics than visual perceptual problems. There are, however, aspects in mathematics that can be affected by auditory perceptual problems.

- **Auditory discrimination.** These learners have difficulty distinguishing between numbers that sound nearly the same, such as *seven* and *eleven*. In higher numbers, they find it difficult to discriminate between numbers such as *fifteen* and *fifty*.
- **Auditory sequencing.** This problem affects the learners' ability to count correctly in the right order. They will also experience problems in counting multiplied numbers.
- **Auditory memory.** These learners cannot remember the simple combinations of addition and subtraction. They still count on their fingers or use concrete objects to get to the answer.

Although the above are listed as intrinsic factors, the system, including the school and the parents, can be responsible for many of them. For example, if a learner was not stimulated as a young child to develop his perceptual skills such as listening to different sounds, recalling stories, etc., this can contribute to difficulties with mathematics. Can you give more examples?

10.9.4 Problems caused by attitudes and beliefs of parents

The effect of the attitude and beliefs of parents may cause a learner to experience difficulties in mathematics.

- Parents whose demands are too high regarding their children's achievement in mathematics may cause anxiety.
- If parents' demands are too low regarding their children's mathematical achievement or if they show little interest in it, the children will also lack interest in mathematics.
- Some parents presume that if they experienced difficulties with mathematics in their school years, their children may also not succeed. They do not expect better achievement from their children. These learners believe that they are not able to cope with mathematics and therefore do not do their best to improve their mathematics.
- Some parents believe that mathematics is less important for girls than for boys. Therefore the girls do not even try to improve their mathematical knowledge.
- There are parents who try to take over the teaching of mathematics at home without finding out which approaches the teachers follow. This may confuse the learners, especially if they find the mathematic concepts and processes difficult.

10.10 MANIFESTATIONS OF PROBLEMS IN MATHEMATICS

10.10.1 The importance of the role errors play in mathematics

Borasi (1996: 32) accentuates the importance of errors in mathematics when a learner is acquiring

mathematical knowledge. Errors enable the learners to develop independent and well-formulated problem-solving strategies, and to check and correct their answers. Learners should become aware of the fact that it is also their own obligation to identify errors and not only that of the teacher.

Errors give an indication to teachers of aspects or steps in mathematics that learners or individuals still do not fully understand. They also give an indication of the level on which the learner has mastered the steps. Teachers should not only concentrate on the final answer as correct or incorrect. The whole process or method used by the learner to get to the answer should be analysed step by step in order to determine the type of problem the learner is experiencing. This also gives an indication of the methods and strategies the teacher should apply to support the learner to overcome the problem. The mathematical errors are therefore just as important as the answers.

10.10.2 General manifestations of mathematical difficulties

Harwell (1995: 215) estimates that one in seven learners experience problems with mathematics at school. Most of these difficulties start in the learners' first school year, although they may also start at a later stage. The first symptoms of mathematical difficulties are a learner's tendency to avoid mathematics as it causes anxiety. One clear manifestation of mathematical anxiety is sweaty hands when the learner has to do written work in mathematics. (Note, however, that some learners' hands may sweat excessively without any relation to anxiety.)

Confusion is a general symptom of mathematical difficulties. Learners are not sure where to start and their methods and strategies of problem solving are without structure. They work very slowly and think for a long time before giving an answer. If asked to give an answer orally, they first repeat the question before trying to get to the answer. By the time they do get the answer the teacher has already asked another learner to answer the question, a practice which is unacceptable from an educational point of view.

These learners work very slowly and they often make errors even with the simplest problems.

They make use of dots or count on their fingers to get to an answer. Even in the intermediate school phase they use dots or their fingers to add or subtract one unit.

ACTIVITY

Observe the learners in your class and write down the manifestations that may be related to mathematical anxiety.

10.10.3 Specific manifestations of mathematical difficulties

In the foundation phase learners mainly work on a low level in the content and process areas of mathematics (consult the school year plan for mathematics). In the intermediate phase they still work with the lower-level content together with higher-level content. In the foundation phase the learners use straightforward strategies in the process area; for example: *John has 10 sweets and Peter 15. How many more sweets does Peter have than John?* In the intermediate school phase the strategies used in the process area become more complicated.

It is not possible to discuss all the types of errors learners can make in a specific grade, therefore you are referred to the school year plan again. If an error occurs on a lower level of mathematics than the grade in which the learner is, it is important to give attention to that specific kind of problem. If the problem is on a level applicable to a higher grade, the method for solving the problem should not be ignored but only briefly explained to the learner. If a learner cannot achieve specific outcomes for a grade, he may not be able to achieve the outcomes for a higher grade.

10.10.3.1 The foundation phase

These learners

- experience problems sorting objects according to different characteristics
- cannot estimate quantities
- count without insight
- count slowly because they first have to decide which number follows
- cannot count backwards
- cannot count forwards or backwards from a specific number
- do not understand and cannot use the number line
- cannot count in multiples of twos and threes
- cannot relate simple mathematical concepts to their daily life situations
- do not understand the value of numbers
- do not understand place values
- cannot discriminate between the different mathematical symbols such as $+$, $-$, \times and \div
- do not understand and know the attributes of the main combinations of adding and subtracting (in addition the number becomes more and in subtraction it becomes less.)
- do not understand that in subtraction, the smaller number should be subtracted from the larger one
- do not understand the $=$ sign, that it means that the numbers at both sides of the $=$ sign have the same value: $3 + 9 = 6 + 6$ ($3 + 9 = 12$ and $6 + 6 = 12$)
- do not understand the concept of tens and units
- cannot analyse and apply the operation they should use to solve word sums
- rely in every situation on concrete material
- persevere on the same combination e.g. (addition in this instance) $4 + 3 = 7$, $6 - 4 = 10$, $2 \times 5 = 7$, $8 \div 2 = 10$
- do not understand the concept of 0
- do not understand the repetitive concept of multiplication and division, e.g. $2 + 2 + 2 + 2$ is the same as $4 \times 2 = 8$ and $18 - 3 - 3 - 3 - 3 - 3$ is the same as $18 \div 3 = 6$
- do not understand that $6 + 2$ is the same as $2 + 6$ and 3×4 as 4×3 (the commutative aspect of numbers)
- cannot identify the basic coins and cannot determine the price of objects
- do not understand mass and volume
- cannot read half-hours and quarter-hours on a watch and their concept of time is poor
- cannot do simple measurements.

Look at the learners in the classroom and their workbooks and give examples of each of the above difficulties. For example, if they experience problems sorting objects according to different characteristics, they cannot sort objects according to form, colour and size. If you ask them to name all the square objects in the classroom, they are not able to do so.

10.10.3.2 The intermediate school phase

These learners often experience the same problems as learners in the foundation phase although the problems are less conspicuous. They

- rely mainly on mathematical operations and answers familiar to them
- cannot find solving strategies for more complicated mathematical operations
- make mistakes in the four main combinations, which gives the impression of carelessness
- do not understand a problem such as “How many will be left if you take away 7 from 9” (They tend to subtract the second number from the first and their answer is 0.)
- do not understand the carry-over concept from tens to units and vice versa
- do not understand that a horizontal combination has the same principle as a vertical combination
- find it hard to read numbers higher than 100
- have problems with the place value of numbers higher than 100
- do not understand even and uneven numbers
- cannot round numbers up to ten
- experience problems with the concepts of angles.

10.11 ASSESSMENT AND SUPPORT OF LEARNERS EXPERIENCING MATHEMATICAL PROBLEMS IN THE FOUNDATION AND INTERMEDIATE PHASES

10.11.1 Identification and assessment of mathematical difficulties

The main assessment tools for learners with mathematical difficulties are *observation*, *interviews*

with the parents, teachers and the learners and error analysis of their work to determine the general and specific manifestations of the problems. As assessment is discussed in Chapter 3, no detailed information on assessment will be given here.

Note

It is important to remember that mathematical assessment is not about how many answers are correct but about the problem-solving procedures the learners followed (process area).

Hammill and Bartel (1995: 259–261; 270) mention the following assessment material that could be used by teachers to determine learners’ mathematics difficulties:

Commercially available tests

These are standardised mathematical tests, programmes and teaching systems. The advantage of these programmes is that they give teachers a clear indication of the level on which a learner functions in mathematics. However, they are considered as norm-based tests and are not recommended for regular assessment purposes in class. The disadvantage is that they are not specifically compiled for a particular grade or class. The material in the programme may not include all the concepts and processes that have been taught to the class. (A learning support teacher might find it useful to include this type of test as part of her initial assessment.)

Curriculum-based tests

These tests are based on the work the learners have learned in the classroom. They are taken every week or month in order to assess the learners’ progress in mathematics.

Assessment batteries compiled by the teacher

These tests focus on what the learners can do in their daily work and on errors in their class workbooks. They give teachers an indication of where to start supporting learners with mathematical difficulties.

Interviews with learners

In this assessment test, a learner is required to think aloud when solving mathematical problems, which enables the teacher to assess the strategies the learner uses. Although it is a time-consuming assessment strategy, it enables the teacher to support a learner in the specific problems he experiences.

Error analysis

Error analysis is based mainly on a learner’s written mathematics and enables the teacher to identify and interpret the errors the learner has made.

10.12 THE TEACHER’S ROLE IN SUPPORTING LEARNERS WITH MATHEMATICAL DIFFICULTIES AS WELL AS A CHANGE IN THE APPROACH TO MATHEMATICAL SUPPORT

Teachers who are not sure of mathematics themselves avoid supporting learners experiencing difficulties in mathematics. Some may not even understand why learners cannot grasp the mathematical concepts. For them, knowledge of mathematics is obvious and there is no particular reason why all learners cannot grasp it. Other teachers find it easy to determine the type of problem the learners experience but are not capable of supporting the learners in mathematics. These teachers have to improve their knowledge and insight into mathematical difficulties, or they have to change their attitude towards mathematics and towards the learners who experience problems.

ACTIVITY What can you do to improve your knowledge of mathematics? Is listening to lectures enough? Do you participate in discussions during workshops?

Teachers should remember
There are learners who are not able to construct and apply their own strategies and methods to solve mathematical problems, and teachers should teach them prescribed strategies and methods to solve certain kinds of problems.

Thorough assessment and clear guidelines without being too strict about the problem-solving methods are very important.
Learners who are able to use their own strategies and methods that are not the same as those taught in the classroom should never be discouraged to use and build on their own knowledge.
Teachers should avoid making insensitive remarks about wrong strategies and methods used by learners. They need to be sympathetic and patient, and admit that some aspects of mathematics are difficult. The teachers’ undertaking to help learners to overcome their problems will encourage them to work harder.
If teachers develop an attitude of enthusiasm towards mathematics, it may also inspire a positive and enthusiastic attitude in the learners towards the learning area.

10.12.1 Support of learners experiencing mathematical difficulties
10.12.1.1 Overcoming mathematical anxiety

According Barooski and Coslick (1998: 20–21), “... anxiety is learned and ... can be prevented or unlearned.” They give the following guidelines to minimise fear:

- emphasize understanding and thinking rather than memorizing and quickly regurgitating the correct answer;
- encourage a variety of strategies, including children’s own informal methods, instead of requiring children to learn a single school procedure;
- treat questions and errors as learning opportunities and as signs of active intelligence, not as interruptions or signs of stupidity;
- choose experiences carefully so that children generally experience success; and
- encourage children to work in groups (Barooski & Coslick 1998: 20–21).

Teachers should also

- give a learner his assessment results in such a way as not to harm his self-image

- give positive comments on aspects in which the learner has succeeded
- give the learner the opportunity to rewrite a test in which he was not successful after he has been supported in the same type of content.

10.12.1.2 General guidelines for supporting learners in mathematics

Hamill and Bartel (1995: 270–275) discuss the following principles for mathematical support:

- Use a vast variety of concrete teaching and learning material to give learners opportunities to visualise the mathematical concepts and to explore and communicate them.
- Use a variety of thinking strategies to solve the problems.
- Relate the mathematical outcomes to the real-world context.
- Be ready to change the lesson plan if it seems as if the learners do not have the basic knowledge for the material to be applied.
- Present the curriculum content in a flexible manner by showing the learners that there is a variety of methods to solve a problem.

Other general guidelines for supporting learners in mathematics:

- Allow enough time for learners to exercise the mathematical problem-solving strategies until they can apply them automatically.
- Give learners the opportunity to monitor their own progress from time to time. This can be done by using calculators or by comparing answers with those of other learners.

Rosner (1993: 140–143) stresses the following:

- Learners should have the basic mathematical knowledge and language before the content to be taught in one period is increased.
- If a learner can apply small units, they can be increased gradually.
- Use analysing techniques instead of synthesising techniques to teach mathematics.

The improvement of the quality of support to learners experiencing mathematical difficulties

For a number of teachers, support to learners experiencing mathematical difficulties means

explaining the concepts and processes again by means of the methods and strategies already used in the classroom. This is *re-teaching*. This may be useful for learners who were absent from school but not for those who did not succeed with the same methods and strategies the first time. These learners need more intensive teaching strategies and methods, repetition and intensive support.

Advice to parents regarding development of their children's mathematical skills

Underhill (in Kennedy & Tipps 1994: 104–105) recommends that learners manipulate concrete objects deliberately. Parents can, for instance, develop their children's mathematical skills in the kitchen. All children enjoy kitchen activities. Content awareness includes the following (examples of kitchen activities are provided in brackets):

- Quantities and numbers (*how many cookies have we baked?*)
- Mathematical activities such as counting, adding, subtracting, multiplying and dividing (*we have already added one cup of milk; how many cups of milk must we still add?*)
- Simple fractions with rational numbers such as halves and quarters (*you can cut the scone in half*)
- Length and distance, mass and content (*the mass of the sugar is 2 kg*)
- Forms and angles (*the cake is round*)
- Perimeters and areas (*how many cookies would fit into the pan?*)
- Time, speed and relationships (*the cookies take 10 minutes to bake; if we put them in the oven at 10 o'clock, at what time should we take them out?*)

Cooperative learning

Cooperative learning may be useful to support learners who experience problems in mathematics, as they tend to learn from the example of the others during cooperative learning. Some of these learners tend to understand the content better if peers help them because their peers are on the same cognitive level and their explanations are simpler and clearer than those of the teacher. It is, however, important that the teacher takes note if a learner with problems tends to “disappear” in the group. Some learners do not function well in groups and become just one of the group without

giving any input, especially if the other learners are well equipped with the concepts. Such learners should not be put in groups with one or two dominant learners as these learners tend to take over and do everything in the group and for the group. (Read Chapter 4 on cooperative learning groups.)

10.12.1.3 *Specific guidelines for supporting learners experiencing mathematical difficulties*

Note

It is impossible to give examples of methods and strategies for every aspect of mathematics as well as the processes in the different grades. There are general guidelines as well as specific methods to follow when supporting learners with mathematical difficulties. These guidelines and methods depend mainly on the learner's specific problems and grade, as well as the particular teaching style of the teacher. It is therefore important to do a shelf search on the different topics on mathematics in the library.

Teachers should consult books in the library of any tertiary educational institution with information on different teaching methods and strategies in mathematics and adapt these to their own teaching style. Mathematical teaching methods and strategies should never be prescriptive, therefore careful planning on how to adapt them is essential.

10.12.2 *The mathematics lesson structure*

Every mathematics lesson for learners who experience mathematical difficulties needs to be well planned to be purposeful. The information should be applied in a specific order to avoid a haphazardly delivered lesson which the learners cannot follow and understand. The lesson should always start at a concrete and practical level, even for learners in the intermediate phase who experience mathematical difficulties. At this stage the mathematical concepts to be learned should be related to all learning areas, as this makes it easi-

er for the learners to understand the purpose of the concepts and how they could be integrated into their daily activities. The lesson should then move to a schematic or semi-concrete level and finally, if it is clear that the learners have grasped the concept and process, to the abstract level of numbers and signs. While the learners are busy on a concrete and semi-concrete level of mathematical content, they should be introduced to the abstract level by showing them the written numbers and signs at the same time. The course of each lesson should follow certain phases. It is possible that the first three phases may occur concurrently, although normally they occur consecutively.

10.12.2.1 *Phases of the mathematics lesson*

(a) Revision

Revision is also a kind of assessment, as it enables the teacher to determine what the learner already knows about the content underlying the new information to be taught in that session. Without this knowledge the teacher cannot be sure whether the learner is ready for the new mathematical content.

(b) Explanation

After the teacher has determined the level of background knowledge of the learner, he should start explaining the new concepts and processes. It is, however, important that he relates this information back to the learner's basic *knowledge assessment* during the revision phase.

(c) Experiencing

This is the most important phase of the lesson for learners experiencing mathematical difficulties as they have to experience the concrete or practical situation and then relate it to abstract concepts. There are mathematical concepts that are easy to relate to the real-world situation without experiencing the concrete situation during the lesson. Some concepts are rather abstract and should be related to the practical situation to make them accessible for the learner. Learners should work and play with or experience the real material, such as in baking a cake. Obtain the ingredients and let the learners measure them. Learners

should experience the time it takes to prepare the batter and to bake the cake.

(d) Discussion

At this stage of the lesson individual learners should have the opportunity to discuss and solve the problems. This is also a form of assessment as the teacher can assess the learners' knowledge of new concepts presented during the lesson. (If some learners are too shy or anxious to discuss their understanding of a concept and process in front of others, they can discuss it in small groups or just with the teacher.)

(e) Generalisation

At this stage the teacher should give the learners the opportunity to apply the concepts in another but similar situation. This is to determine if learners can apply and solve a similar type of problem in a similar situation.

(f) Implementation

At this stage the learners should have the opportunity to apply this new knowledge to similar situations. For example if money was the topic during the lesson, learners should now have the opportunity to go to the school tuck shop and buy something such as a pencil, a sweet or a book. They then have to decide whether the change is correct.

This information should serve as the starting point for the next lesson.

ACTIVITY

Many learners are interested in team sport. How can you use a soccer match, for instance, to teach basic problem-solving skills such as counting (the members of the team; how many substitutes are allowed on the field); the positions they play (goalie at the back, striker in front); the goals they concede and achieve (the winning or losing margin), etc.

10.13 CONCLUSION

Mathematics focuses on patterns and relations, has its own language and is an organised field of knowledge with interrelated areas of content and

process. Mastery of mathematics is important in order for learners to be successful at school and later on as adults.

Learners will have to reach the content, educational, developmental, emotional and contextual levels before they will be able to work with mathematics on a formal level at school. Before they are able to work with advanced mathematical concepts and processes, they will have to acquire higher cognitive and metacognitive skills, and understand and acquire elementary mathematical concepts on the first level. Mathematics starts at a concrete level and proceeds to the abstract level.

Awareness of underlying problems such as absence from school, changes of school, inadequate teaching, problems within the learner, and the attitudes and beliefs of the parents are important when working with learners experiencing mathematical difficulties.

Choose a learner experiencing mathematical difficulties in any of the grades from 2 to 6. Complete the following information on this learner:

1. General information on the learner

Gender: _____

Grade: _____

Age: _____

[Why is this information important?]

2. Mathematical difficulties (see paragraph 10.9)

2.1 Factors underlying mathematical difficulties

Determine the possible cause(s) of the learner's mathematical difficulties

3. Assessment

After assessing the learner, write down the types of errors he makes. Try to determine the reasons for these errors.

4. Teaching strategies

Write down a few teaching strategies that you may use to support this learner to solve his problems.

ACTIVITY

Errors are important as they enable learners to develop independent and well-formulated problem-solving strategies, and teachers to identify the learners' mathematical difficulties.

The first symptoms of mathematical difficulties manifest in anxiety, confusion, a slow work rate and identifiable mathematical errors.

Assessment of such learners' mathematics enables teachers to assist them to overcome their problems. Teachers should first change their own attitudes towards mathematics and towards learners who are experiencing problems before they will be able to change the learners' attitudes towards mathematics and help them to overcome their problems. The lessons for mathematical support should be well planned and developed through the phases of revision, explanation, experiencing, discussion, generalisation and implementation to be successful.

Questions

1. Indicate how you would motivate learners to use their own strategies when solving mathematical problems.
2. State how you would *revise* the information in the first stage of your lesson by making use of information related to the learners' real-world situation.
3. Give an indication of the new information you taught to the learners and describe how you would *generalise* and implement this information in the last phase of the lesson.

Bibliography

Barooski, A.J. & Coslick, R.T. 1998. *Fostering children's mathematical power: an investigative approach to K8 mathematics instruction*. London: Lawrence Erlbaum.

Bezuk, N.S., Armstrong, B.E., Ellis, A.L., Holmes, F.A. & Sowder, L.K. 1993. Educators and parents working together to help all students live up to their dreams with mathematics. In Cuevas, G. & Driscoll, M.H. (Eds), *Reaching all students with mathematics*. Reston, VA: The National Council of Teachers of Mathematics, 23–44.

Borasi, R. 1996. *Reconceiving mathematics instruction: a focus on errors*. Norwood, NJ: Ablex.

Brown, M. 1999. Swing of the pendulum. In Thompson, I. (Ed.), *Issues in teaching numeracy in primary schools*. Buckingham: Open University, 3–16.

Hammill, D.D. & Bartel, N.R. 1995. *Teaching students with learning and behavior problems: managing mild to moderate difficulties in resource and inclusive settings*, 6th ed. Austin, TX: Pro-ed.

Harwell, J.M. 1995. *Ready-to-use: information and materials for assessing specific learning disabilities*, Volume 1. New York: West Nyack.

Kennedy, L.M. & Tipps, S. 1994. *Guiding children's learning of mathematics*, 5th ed. Belmont, CA: Wadsworth.

Meese, R.L. 1994. *Teaching learners with mild disabilities: integrating research and practice*. Pacific Grove, CA: Brooks/Cole.

Parker, R.E. 1993. *Mathematical power: lessons from a classroom*. Portsmouth, NH: Heinemann.

Perry, B. & Conroy, J. 1994. *Early childhood and primary mathematics: a participative text for teachers*. Sydney: Harcourt Brace.

Riedesel, C.A. 1990. *Teaching elementary school mathematics*. Englewood Cliffs, NJ: Prentice Hall.

Rosner, J. 1993. *Helping children overcome learning difficulties*, 3rd ed. New York: Walker.

Stiff, V.L. 1993. Introduction – reaching all students: a vision of learning mathematics. In Cuevas, G. & Driscoll, M.H. (Eds), *Reaching all students with mathematics*. Reston, VA: The National Council of Teachers of Mathematics, 3–6.

Treffers, A. & Beishuizen, M. 1999. Realistic mathematics education in the Netherlands. In Thompson, I. (Ed.), *Issues in teaching numeracy in primary schools*. Buckingham: Open University, 27–38.

Van de Walle, J.A. 2004. *Elementary and middle school mathematics: teaching developmentally*. Boston: Pearson Education.



**Section
E**

**Addressing
attitude
barriers**

FAMILY AND COMMUNITY PARTNERSHIPS

11

ESTELLE SWART & TLAKALE PHASHA

Learning outcomes

After reading this chapter you should be able to

- ▶ understand the theoretical framework for understanding family–school–community partnerships
- ▶ understand how partnership/collaboration and its components can work
- ▶ implement the different forms of school–community partnerships/collaboration
- ▶ identify the barriers to effective school–community partnerships/collaboration.

Key terms

inclusive learning communities ♦ *school communities*
♦ *collaboration* ♦ *involvement*

11.1 INTRODUCTION

Joyce L. Epstein makes a powerful statement in saying that: “The way schools care about children is reflected in the way schools care about the children’s families” (Epstein 2002: 7). This statement challenges educators to reflect critically and therefore honestly about their personal views and values with regard to children’s learning and development, and more specifically the role that families and communities play in their education. If educators narrowly perceive children as *learners* only, then they will expect the families to leave education to the school. The role of families in their children’s learning therefore ends at the school gate. On the other hand, if educators perceive children as *children* with unique needs and individual social circumstances, they are more likely to regard both the families and community

members as partners with a shared interest in children’s learning, welfare and development.

It is strongly believed that the active involvement of families and the wider community in the teaching and learning process of children is fundamental to the development of an effective inclusive learning community (Christenson & Sheridan 2001: 9; Simon & Epstein 2001: 1; Hornby 1995: 127; Seligman 2000: 1; Wall 2003: 50–52). This belief is based on growing evidence in the international research literature on how schools can build links with families and communities, and how these links can foster school achievement and development, better attendance, positive attitudes and self-concepts, good behaviour and homework completion. The idea of involving families and communities is, however, not a new one but a re-emergence of a phenomenon that goes back many centuries. Yet the meaning of the concept “involvement” changed over time, from parents becoming involved when and how the school required, to their becoming an equal partner in a mutual relationship with one

goal in mind – the enhancement of every child’s learning and development. Being equal partners in education resembles the idea of a “whole village taking responsibility for raising a child” and reflects the broader principles of inclusion. Establishing partnerships between the three most important contexts in a child’s life, namely the school, family and community, not only holds promises but also provides new challenges to all parties involved.

In South Africa, the critical role which parents¹ and the community need to play in the education and development of children has been given official recognition through legislation and education policies such as the South African Schools Act (1996), the National Plan of Action for Children (1996) and the *Education White Paper 6* (2001). The national Department of Education envisions the provision of quality education for all children in an education and training system that respects and responds effectively to the diverse learning needs of every child. These learning needs include everyday developmental and learning needs, but may also refer to needs arising from a range of factors including physical, mental, sensory, neurological and developmental impairments; psychosocial disturbances; differences in intellectual ability; particular life experiences or socio-economic deprivation. The full range of these learning needs can only be addressed effectively in partnership with other role-players that can provide the necessary support, sources and expertise. The *Education White Paper 6* in particular acknowledges that inclusive education is broader than formal schooling and for that reason also incorporates the roles of the home and the community. As a result, the right of access and participation of all parents in the education of their children as well as the collaborative roles of communities are formally recognised.

This chapter promotes the idea of *creating inclusive learning communities* as proposed by Sands et al. (2000) and Bauer and Brown (2001). The verb *creating* indicates a visionary process that is unique to every context and school, and *inclusive* reflects the ideal of developing inclusive school communities and a society based on the principles of democracy, equity and social justice (Sands et al. 2000: 5). Inclusive learning communi-

ties recognise that every child can learn and belongs in the mainstream of both school and community life. For children to become participating and contributing members of a community it is essential to create an emotional sense of *community* based on the fundamental principles of respect, belonging, diversity, trust, collaboration and caring in inclusive learning communities. To achieve this ideal requires the collective and cohesive effort of every child, family, peer, school professional and community member as equal members of an inclusive community. Members of such a community learn to communicate honestly and share a commitment to celebrate together, grieve together, enjoy each other’s company and care for each other, much like the villagers referred to earlier. If any child needs support, the whole learning community responds to meet the needs. In these communities, children, their families and community members participate with school personnel in making decisions and providing resources to support the child’s learning and development. *Learning* is a broad yet core concept which indicates not only the focus of the school–family–community partnership, namely to support the learning and development of the individual child, but also refers to how school communities as “learning organisations” learn to work and live together in the process of becoming more inclusive (Swart & Pettipher 2001).

The aim of this chapter is to provide a framework for understanding schools, families and communities as partners and how these partnerships can be established. We will first explain the theories of Bronfenbrenner and Epstein for understanding family–school–community partnerships. This will be followed by an analysis of family–school partnerships and the factors related to these partnerships. The chapter concludes with a discussion of school–community partnerships and the cornerstone of partnerships, namely collaboration.

11.2 THEORETICAL FRAMEWORK FOR UNDERSTANDING FAMILY–SCHOOL–COMMUNITY PARTNERSHIPS

The three contexts – family, school and community – and the interconnections between them are

important influences in children's lives. Urie Bronfenbrenner's ecological systems approach to parent involvement provides a conceptual framework for understanding how families and schools are embedded in the community (Bronfenbrenner & Morris 1998; Christenson & Sheridan 2001: 32, 38; Hornby 1995: 43–52; Seligman 2000: 60–62; Wall 2003: 25). His perspective, as described in Chapter 1, explains the multidirectionality of the relationships within families as well as between families, schools and communities. It emphasises that schools influence families, families influence schools and both affect and are affected by the communities in which they are located (Christenson & Sheridan 2001: 39). The family, school and community contexts are also influenced by the larger social, political and economic realities (Seligman 2000: 62). Bronfenbrenner's ecological

systems theory therefore represents the family as a system, nested in a number of other societal systems and the effect of the family–school relationship on children's learning and development. As illustrated in Figure 11.1, the developing child and his family present a microsystem at the innermost level of the ecosystem. The child and the family unit are embedded in the broader mesosystems, consisting of peers, extended family, educators, neighbours and close personal acquaintances with which the child actively interacts. These units are further embedded in the even larger exosystem that includes the broader education, health and social systems as well as other social organisations and professional agencies that do not involve the child as active participant but affect and are affected by what happens in the settings that do involve the child. This model helps

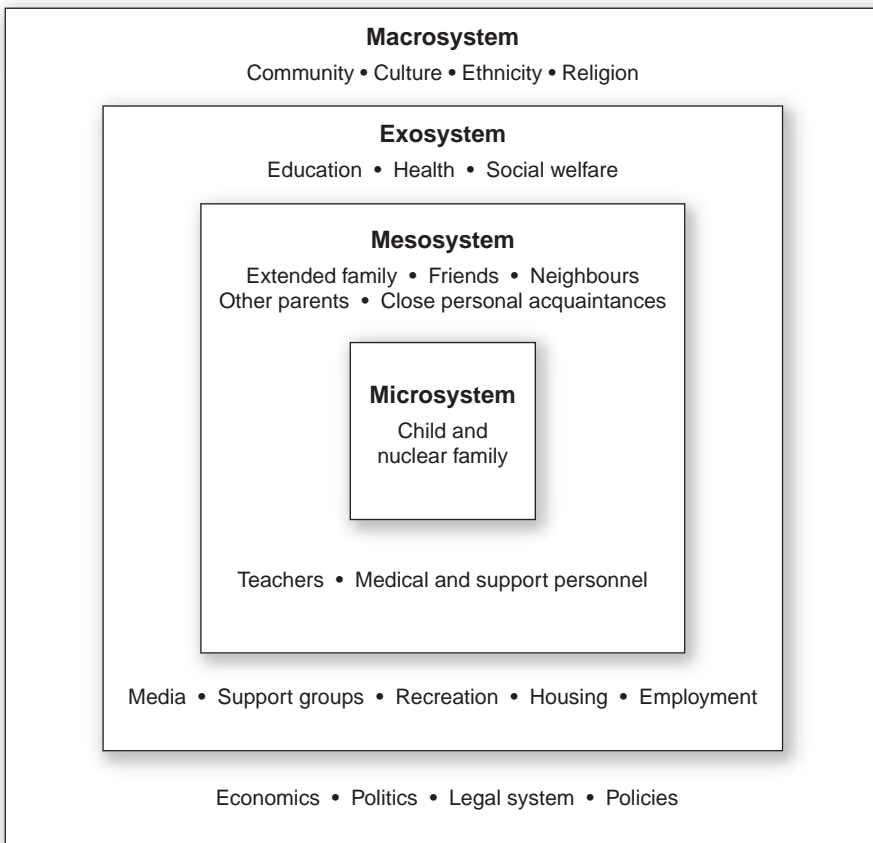


Figure 11.1 An illustration of Bronfenbrenner's ecological systems theory

Source: Adapted from Seligman 1989

us to understand the complexity of the family as a system and how the individual child functions within the family and society. It is also important to remember that the family's interaction with the school, community, extended family members and friends is fundamental to the functioning of the family unit. Although the other systems are not intimately linked to the family, they do impact on the family and the child in various ways, such as the educational and negative influence of television, the socio-economic situation of the country, and new legislation and policies, for example in education. Bronfenbrenner's model is also useful for analysing the influence of social factors such as poverty, discrimination and immigration on children's learning and family functioning (Gibbs & Huang in Frederickson & Cline 2002: 110).

Bronfenbrenner's theory contributed to the growing appreciation of "contextualism" and "ecological settings" (see Chapter 1). More specifically, his interpretation of the critical and continuous role that parents play in the informal educa-

tion of children laid the foundation for understanding and promoting cooperation and collaboration between the most important systems in children's lives.

Bronfenbrenner's theory also informed other theories such as Joyce Epstein's theory of overlapping spheres of influence that emphasise the importance of the family-school relationship and the mutual responsibility for children's learning and development (Epstein 2002; Simon & Epstein 2001: 2; Turnbull & Turnbull 1997: 17–20). She emphasises that children are best supported when schools and families work together in a partnership to reach shared educational goals. Epstein devised a model to illustrate that there are overlapping spheres of activity or influence between the families, schools and communities (Bronfenbrenner's mesosystems) that can be pushed together to generate an area of partnership (See Figure 11.2).

She distinguishes between an external and an internal model of influence. The *external* model of the three spheres of influence demonstrates that

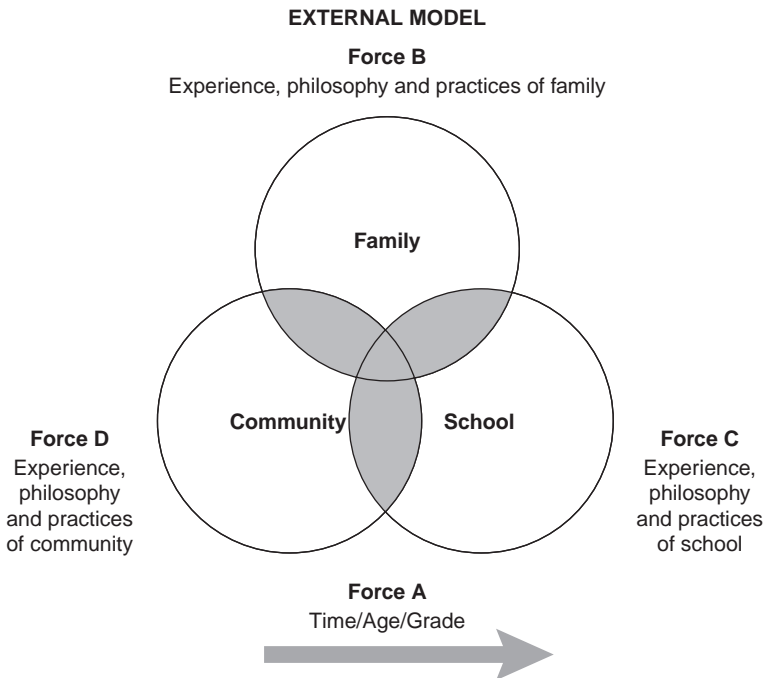


Figure 11.2 Joyce Epstein's model of overlapping spheres of influence of family, school and community on children's learning

Source: Adapted from Epstein et al. 2002

the extent of overlap is in interaction with and affected by the forces of time and the forces associated with the experience, philosophy and practices of every sphere. The force of time relates to the age and grade level of the child as well as the influence of historical changes (compare with Bronfenbrenner's chronosystem in Chapter 1). The interaction between the spheres can also change over time. For example, it is a common experience that as children grow older the spheres are often pulled apart, based on the beliefs of parents that children are more independent and that they feel less competent to support them, or on the attitudes of educators that do not recruit parent support.

The three spheres in the diagram indicate areas of overlap signifying areas of interdependence and independence. Some activities in families, schools and communities are performed independently, as indicated by the spheres not overlapping. However, there are activities conducted mutually by two or three contexts as indicated by the intersections. The intersections or shaded areas represent spaces where families and schools, schools and communities, or families, schools and communities share the responsibility for children's learning and development. Depending on the perspectives and actions of educators, families and members of the community, these spheres can be pushed together to increase overlap when schools and families work together, or pulled apart when they do not.

The *internal* model of interaction of the three spheres therefore demonstrates how and where complex interpersonal interactions take place between school, family and community. These interpersonal interactions may occur at both institutional level and at individual level. The school may, for example, invite all families and community members to the school, or otherwise a specific family where it concerns an individual child. *However, the focus and purpose of the interaction is always on how these contexts can best support the achievement and development of the child.* These relationships are powerful when developing inclusive school communities. If these relationships and interactions are successful, they generate what is referred to as "social capital" that may benefit all children, families, educators and com-

munity members (see Davies 2001: 111; Simon & Epstein 2001: 4). For example, more effective communication between schools and families benefits all parties and can therefore be regarded as social capital.

Epstein's model targets the children as beneficiaries of the overlapping spheres and therefore places the child at the centre of involvement (Turnbull & Turnbull 1997: 18). The learning and development of children are the main reasons for the partnership. These partnerships are aimed at increasing the children's self-esteem, motivation, academic skills, independence and other characteristics of successful children so that they *themselves* can achieve success and develop their potential.

Implementing this model in practice is synonymous with what was referred to earlier, namely creating inclusive school communities. The schools and educators work at establishing what Epstein calls more *family-like* schools that appreciate the individuality of every child and welcome all families at the school. Parents, on the other hand, create *school-like* families that acknowledge each child as a learner by valuing the importance of education, homework and other school-related activities. Both spheres therefore actively build children's skills and feelings of success. Communities, including groups of parents working together, create *school-like* opportunities and events that recognise and reward learning and progress. Communities also create *family-like* resources, settings and services to support families in their roles to support their children. Furthermore, community-minded families and children help other families and community members in the process.

Based on extensive research in all the school phases, Epstein identified and described six types of partnerships of care that can support the successful learning and development of children (see Table 11.1).

The types of involvement are not hierarchical, but all six are important to establish a strong partnership that will benefit successful learning. For a step-by-step description of this model, consult the comprehensive handbook (Epstein et al. 2002).

In conclusion, both theories recognise the *significance of families* and the *efforts of schools* in the

Table 11.1 Epstein's Model for Partnership illustrating six types of involvement and six-types of caring

Type 1 – Parenting: <i>supporting, nurturing, child rearing</i>
Parents work hard to raise healthy, well-adjusted children. Partnerships can support families with the basic parenting responsibilities and establishing home environments for optimal learning at each age and grade level.
Type 2 – Communicating: <i>relating, reviewing, overseeing</i>
Schools have an explicit responsibility to share clear information about the children's progress, curricula, educational policies and school activities with families. Parents, on the other hand, are eager to obtain this information to better support their children's learning and development. This involves effective school-to-home and home-to-school communication.
Type 3 – Volunteering: <i>supervising, fostering</i>
Anyone can support school goals and the learning and development of children, in any way, at any place and at any time. Parents can volunteer their time, talents and resources in different ways. This type of involvement implies the improvement of recruitment, training, organisation and schedules to involve volunteers, as well as the establishment of interests, talents and availability of families in supporting their children.
Type 4 – Extending learning at home: <i>managing, recognising, rewarding</i>
Parents are eager to support their children at home, but many are unsure how to address issues such as homework and other curricular-related activities. This type of involvement provides families with information and strategies on supporting learning at home.
Type 5 – Decision making: <i>contributing, considering, judging</i>
Many choices regarding children should be made with parents. This type refers to the inclusion of families in decision making, governance and advocacy, and the development of parent leaders.
Type 6 – Collaborating with the community: <i>sharing, giving</i>
Community means all who are interested in and affected by quality education. Local community groups, individuals and businesses can provide different types of support to schools, families and the children. This type involves the coordination of these resources to benefit the children.

learning and development of children. The focus on the interaction between the systems or spheres requires a paradigm shift in research and practice away from identifying influences in each separate context to focusing on the *reciprocal* influences of these systems on learning and development. These theories also highlight the essential, and not only the desirable roles of both parents and communities, as well as the continuity between school and home. This continuity provides the basis for a shared relationship with a mutual vested interest, namely the learning and development of the child (Montgomery 1999: 5). This shared relationship for the education of children forms what Christenson (in Christenson & Sheridan 2001: 7) and Montgomery (1999: 5) called a "supportive safety net" of adults that will never let them drop beyond reach. The creation of such a net facilitates and supports learning as the product of education. Therefore, if we want

to facilitate the best possible learning and development for any child, it makes good sense to see the family as within the school's circle of influence and care (Montgomery 1999: 11).

11.3 FAMILY-SCHOOL PARTNERSHIPS

Historically, there have been major changes in the beliefs and practices of family and community involvement in schools. In the early years, there used to be substantial overlap between the influences of the school, family and community on a child's learning (i.e. for those who had the privilege of attending school). Later on, changing social and economic circumstances resulted in the development of the distinct educational leadership and professional roles of the school, separate from the families and communities that they served (Simon & Epstein 2001: 21). More recently, however, the interest in family-school relations

has increased due to several factors, including the following, summarised from a variety of sources (Frederickson & Cline 2002: 4, 15; Christenson & Sheridan 2001: 54; Sands et al. 2000: 4):

- Changing perceptions of human rights and social responsibilities
- Changing views of the role of schools
- Dramatic changes in family structures and functions
- Increased mobility of families that contributes to the growing numbers of children with diverse cultural, racial, socio-economic and linguistic backgrounds and abilities in classrooms and schools (Helping these parents to support their children can improve their achievement. Parents, on the other hand, can also help the school to learn how to deal more effectively with this diversity.)
- An increasing appreciation of contextualism and ecological views
- A shift from a deficit orientation to a focus on systems change and competency building in education
- A focus on the development of collaborative partnerships to promote healthy and inclusive learning communities
- Growing evidence about the important role that parents can play in supporting their children's learning and development in this era of change
- Parental involvement as a means to enhance the school's accountability
- Acknowledgement of the curriculum of the home
- Recognition of the important influence of out-of-school time on learning

The growing complexity of society and the mandate of democracy challenges us to consider new ways of thinking and doing in education.

There also appears to be a major shift away from how to get parents involved in schools to how to develop partnerships with families that will facilitate and sustain positive child development and learning (Christenson & Sheridan 2001: 18). As a result, family-school relationships are broader and not synonymous with parent-teacher

Reflect on the following questions:

What role did your parents play in your own learning and development?

How were they involved with the school? What effect did this involvement have on you as a learner?

What role did their own experience of education play in their involvement?

What meanings do you attach to the concept "learner" that is now widely used?

How does this perception frame your relationship with the children in your class and with the other significant people in children's lives?

ACTIVITY

relationships. For this reason, the concept "family" or alternatively "parent" may refer to birth parents in some contexts, but it also includes legal guardians or caregivers such as grandparents, brothers and sisters, and other close family (or community) members that can contribute towards the educational outcomes of a child in other contexts (Turnbull & Turnbull 1997: 11; Department of Education 1997: vii). A useful definition for the concept "family" in this regard is

...two or more people who regard themselves as family and who perform some of the functions that families typically perform. These people may or may not be related by blood or marriage and may or may not usually live together (Turnbull & Turnbull 1997: 11).

This section focuses on the overlapping point between schools and families with the *mutual purpose and shared responsibility of promoting and supporting effective learning and development of learners and addressing barriers that obstruct it*. The most basic level of this partnership starts with the building of a relationship (Wall 2003: 46). Furthermore, working in this relationship signifies an attitude and a process and not merely an activity. It therefore suggests that it takes time and effort to develop these significant relationships.

Christenson and Sheridan (2001: 37–38) describe **family-school partnerships** as

- a *child-focused philosophy* that guides educators and families to cooperate and collaborate in enhancing learning opportunities and success for children in four areas, namely academic, social, emotional and behavioural
- a belief in *shared responsibility* for educating and socialising children, recognising that both educators and families are important (Roles are not prescribed but opportunities for active and realistic participation are created.)
- an emphasis on the *relationship* between families and schools and how they work together in supporting the learning and development of children
- a *preventive, solution-focused approach* in which both partners attempt to develop learning communities that support learning and development, and address barriers as they arise.

The concept of a *partnership* as explained in these definitions therefore signifies a shift from educators and other professionals as the sole “experts” to parents with regard to the education of their children, and to working with family members as equal partners with relevant and valuable expertise. This shift challenges all parties involved to reframe their roles and responsibilities in the education of children.

11.3.1 Ecological factors related to family–school partnerships

An understanding of the ecological factors related to the partners can support the development of more effective family–school partnerships. School and community climate, educator practices, parental background and attitudes have all been identified as factors contributing to establishing effective partnerships. Although reference will be made to some of the most important factors identified in the research, the reader must be cautioned not to single out individual factors as “causes” for non-involvement or learning difficulties, thereby slipping back into the linear thinking of the medical paradigm. The uniqueness of every individual context, as well as the interrelatedness and reciprocity of these factors should therefore always be kept in mind.

11.3.1.1 Factors related to the family

Families differ in terms of their skills, knowledge, resources and time available to promote the learning and development of their children. Research has identified a number of familial factors related to involvement in education. These factors include issues such as family structure, employment, parental socio-economic status, level of education, parental attitudes towards education, sense of self-efficacy with regard to the involvement, linguistic and cultural differences, and parents’ expectations of their child’s performance. These factors are related to Force B in Epstein’s model (Figure 11.2).

Understanding the dynamic and complex nature of changing **family structures** is the key to developing sustained family– school partnerships. The stereotypical view of the nuclear family is still evident in children’s books, in the media and also in some classrooms today. However, the number of families with an atypical composition has increased dramatically since the 1980s. There are more blended families today including single-parent families; extended families; stepfamilies; families of mixed religion, language and ethnicity; families with same-sex parents; families with adopted or foster children; and grandparents raising grandchildren (Friend & Cook 2003: 218; Sands et al. 2000: 78–79; Seligman 2000: 70). In addition, child-headed families that have lost their biological parents and extended family members due to HIV/Aids, or whose parents are employed far from home are now becoming a common phenomenon in South Africa. These structural changes add to the diversity educators have to deal with. It should be noted that diversity in itself is not harmful, but that discontinuities in care, support and relationships often associated with divorce, marital problems, family violence and abuse, alcohol and substance abuse, unemployment and poverty can have detrimental effects on learning and development. On the other hand, the quality of parenting and other supportive relationships with schools and communities are found to foster resilience and secure attachments.

Another factor that has become much more common in the past few years is children growing up in homes where both parents are employed outside of the home (Christenson & Sheridan

Reflect on the following:

Identify and describe different types of families by referring to children and families in your class and school. Analyse their assets, strengths and specific support needs. Make a list of considerations and strategies that you are going to employ to strengthen partnerships with these families.

2001: 84; Wolfendale & Einzig 1999: 35). Adverse economic circumstances and technological changes often result in over-demanding jobs and long working hours. This may contribute to logistical and practical difficulties like child-care needs and transportation issues. Furthermore, many parents in South Africa work in urban areas to earn money for the household, leaving parenting to siblings or members of the extended family. Parents therefore often have little time and energy to be involved in their children's learning at home or at school. Educators should for that reason take cognisance of the challenges that some families face when attempting to involve them in children's learning.

Schools have developed interesting strategies to accommodate working families:

- Parent days over weekends instead of evenings during the week
- Parent workshops where they learn more about the new curriculum and how to support their children with homework and preparation for tests and examinations
- Advance notification of specific projects and tests, and items that their children need for school
- Homework hotline where teachers outline criteria and support for homework completion
- Homework tutoring after school so that parents can spend more time with their children after work

Can you think of any other ideas that you can try in your school to help accommodate working parents?

Parental socio-economic status (SES) and level of education are particularly relevant in South Africa. We live in a country with vast inequalities. The effects of poverty, unemployment and high illiteracy rates should be considered when working with families and communities. There are varied findings in the international literature on the relationship between SES and parent involvement. Most of these findings suggest that overall family involvement is not related to SES, but the nature of involvement varies depending on the SES (Christenson & Sheridan 2001: 111). School-based family involvement, for example, is significantly related to SES, whereas home-based involvement is not. This means that some parents may find it difficult to attend school activities but are still involved in their children's learning at home.

Furthermore, the type of home involvement is also closely related to SES. Parents of low SES are found to be less involved in the teaching of new learning skills and cognitive-intellectual activities such as preparation for examinations. They are, however, involved on a personal-affective level by showing an interest in their children's education and motivating them to go to school. What parents *do* is therefore regarded as more important than *who they are*. Researchers have found that the following factors in the home environment had a greater impact on learner success than SES as a single variable: parents' attitudes, guidance and expectations of education; quality of verbal interaction; participation in cultural and learning-related activities; and overall stability in the home (Christenson & Sheridan 2001: 53). There are, for example, high-achieving children who live in impoverished family environments. Christenson and Sheridan (2001) therefore conclude that background knowledge about socio-economic status may be used to identify children who are at risk of failure, but under no circumstances should it be concluded that the background characteristics are the reasons why children do not succeed or that parents are not interested in their children's education.

Parents' own perceptions and experiences of education are further factors that can influence family involvement (Christenson & Sheridan 2001: 83; Wall 2003: 45). The legacy of education during the apartheid years left millions of parents

illiterate and therefore unfamiliar with the routines, structures and expectations of schools. These particular parents had no role models or experiences to draw on and may feel inadequate and unwelcome in the school environment. Other parents may have had negative experiences that created negative attitudes such as mistrust that prevent them from participating. Some may lack confidence in their own ability to support and participate in their child's learning. Their perceptions of their own efficacy can for that reason also be linked to the child's achievement and their own participation. A positive indicator related to partnerships is that these perceptions can be changed by educators through building and strengthening partnerships. How can you deal with parents' perceptions and experiences in your own context?

One of the major changes that educators have to deal with in education is the diversity of children and parents in schools. Although diversity is an asset in an inclusive community, *linguistic* and *cultural* differences can create communication problems and be the reason why some parents feel out of place and unwelcome at the school (Christenson & Sheridan 2001: 86). These differences often lead to distrust and distance between families and schools (Hiatt-Michael 2001: 43).

Understanding a family's culture is therefore critical to understanding the family. Culture in this context refers to the beliefs, values and expectations of people that give meaning to our experience. Lynch (1998 in Bauer & Brown 2001: 57) states that it is important to remember that

[c]ulture is dynamic and ever changing ... Culture, language, ethnicity, and race are not the only determinants of one's values, beliefs, and behaviours. Socio-economic status, educational level, occupation, personal experience, and personality all exert a powerful influence over how individuals view themselves and how families function. In any group, within-group differences are as great as across-group differences. Within any culture there is a wide variation in attitudes, beliefs, and behaviours.

This reminds us that no culture should be viewed stereotypically (Friend & Cook 2003: 228), "making it dangerous to paint all people from a particular group with the same brush" (Seligman 2000: 70). The continua of values presented in Table 11.2 (adapted from Bauer & Brown 2001: 58, and Friend & Cook 2003: 229–230) can serve as a useful framework for understanding and respecting cultural values:

Table 11.2 Continua of cultural values

Large families with extended support networks intimately involved in the family's daily life	Family constellation ←→	Smaller family units of one or two responsible adults with little reliance on extended family
Interdependence is highly valued. Individuality can be seen as selfish and rejecting the family.	Nurturance and independence ←→	Individuality as the expression of one's uniqueness is seen as a great asset.
A task or interaction is given the amount of time needed to complete it.	Value of time ←→	A task or interaction is given only the amount of time that has been scheduled for it.
Respect for age, tradition and ritual provides a solid base for contemporary life.	Tradition/technology ←→	Greater value is placed on the future, technology and youth.
Sharing is broadly defined.	Ownership ←→	Things are individually owned. ➔

Table 11.2 Continued

Rights and responsibilities are differentiated, e.g. women are the caregivers, and men the providers and mediators between family and community.	Rights and responsibilities ←→	Equal rights and responsibilities are valued. The roles between men and women are not differentiated.
Living in harmony with the environment is valued.	Life goals ←→	It is important to control the environment and events in one's life.

ACTIVITY

Use the table as a framework to compare and illustrate the cultural values of three different families in your school community. Explain how you would accommodate and develop an understanding and respect for their values in your classroom and school.

The logical differences between family and school responsibilities, and therefore different **perspectives** about the responsibilities, have the potential to create communication difficulties and misunderstanding (Christenson & Sheridan 2001: 81; Seligman 2000). These conflicting perspectives are presented in Table 11.3.

Table 11.3 Conflicting perspectives of families and educators

Families	Educators
• Child is a cherished individual	• Child is only one member of a group of learners
• Concerned with their own child's progress and needs	• Responsible for and focus on the whole class
• Interested in what their child is learning	• Can report on the outcomes that the child has mastered
• Have the complete picture of their child's progress	• More concerned with the snapshot performance on the present level
• Emotionally involved with their child	• More cognitively involved
• Expect individual accommodations and adaptations	• Uses best approach to teach all the learners in the class

Source: Adapted from Christenson & Sheridan 2001: 81; Seligman 2000: 31

Parents want the best for their own children and want the school, and more specifically teachers, to treat them as unique individuals. When they visit the school they expect individualised feedback about their children's progress. Teachers, on the other hand, are concerned with the group of children they are responsible for and often compare children with the group when providing feedback to parents. Different perspectives should therefore be taken into consideration when working with parents. How will you go about doing just that?

Parents of children with impairments

A note of caution: The medical model that was explained in the first chapter framed the research and professional assumptions from 1920–1980 (Ferguson 2002). During this period, professionals and researchers explicitly assumed an intrinsic and harmful connection between children with impairments and family functioning. No matter how families responded to the birth of a child with an impairment, professionals had pathological explanations such as denial, displaced anger or feelings of guilt. If parents, for example, expressed dissatisfaction with professional services it was interpreted as displaced anger towards the child with the impairment. Parental involvement, on the other hand, has often been presented as compensation for underlying guilt feelings. The dominant body of research findings suggests an overall pattern of adjustment and well-being of families. A significant number of parents raising children with impairments report several benefits and positive effects such as coping skills,

family harmony, spiritual growth, shared roles, communication (Ferguson 2002), personal growth, lessons learned, a sense of meaningfulness and the strengthening of the marriage (Singer 2002: 149).

This section raised awareness of some of the factors that can impact on family functioning and participation. One realises that every family is unique, making it important to understand who they are, and to embrace and appreciate their differences. Family involvement cannot be successfully facilitated unless educators and other professionals learn not only about families, but also with and from them (Christenson & Sheridan 2001: 77, 104; Mastropieri & Scruggs 2000: 62).

11.3.1.2 Factors related to teachers and schools

A consistent and significant research finding is that educator and school practices are more important predictors of family involvement than family variables such as SES, gender, ethnicity or race (Christenson & Sheridan 2001: 88, 109; Hiatt-Michael 2001: 41). School and educator factors often associated with family involvement include school climate, responsiveness to family needs, school policies and procedures, beliefs and attitudes, teacher competency and self-efficacy, and communication and collaboration skills. (Force C in Epstein's model of philosophy, beliefs and values of the school in Figure 11.2).

There appears to be a reciprocal relationship between school climate and family involvement (Christenson & Sheridan 2001: 101). **School climate** can be described as the atmosphere of a school experienced by its members and that influences their behaviour. The climate of an inclusive school should display the characteristics of a healthy school, such as

- a sense of care
- cohesiveness and synergy that bonds people together
- direct communication that is open and honest
- equitable distribution of influence and power between role-players
- innovativeness

- adaptation
- problem-solving competence.

Research evidence suggests that an open climate where parents and other family members are welcome in the physical and psychological environment of the school is a prerequisite for family involvement. A school's climate can therefore inhibit or facilitate parental involvement, and parental involvement on the other hand can enhance school climate. It is also apparent from the research that most families *want to be and can be* involved in their children's learning (Christenson & Sheridan 2001: 104; Epstein 2002: 11). The school's climate should for that reason be particularly responsive to diversity by sending a message that all parents are welcome and valued.

A number of barriers to creating a climate that invites parents to participate have been identified that are particularly relevant in the South African schools' context. These barriers prevent parents from participating and educators from reaching out. In attempts to make school premises secure, families are often "fenced out" too. The question is: How do schools send an inviting message to families in spite of the burglar bars and security fences? Children often enter the schoolyard on their own and as a result, teachers and parents have little face-to-face contact. Another reality that educators have to cope with is dealing with large classes and a vast number of educational changes. These overwhelming responsibilities and pressures put a heavy demand on teachers' personal and professional lives. These pressures can lead to the "avoidance" of parents. Working with families requires extra time and energy, and without the necessary resources and support of the school system, this can become a burden. In an attempt to cope, schools therefore often resort to parents' evenings at times and with agendas that suit the school. The traditional "one-shot" back-to-school parent evenings at the beginning of the year and occasional school functions are barely sufficient to get to know families.

Schools that are responsive to the needs of parents report high levels of parental involvement. The question is: What message do schools reflect in their school policies and procedures? **Policies**

and **procedures** can either facilitate or inhibit parental involvement. It was found that policies tend to concentrate primarily on what the parents can offer and not on what schools and teachers can provide for parents. Parents are often unsure about school policies concerning homework and discipline and other important procedures. Similarly, although these policies and procedures affect families' lives directly, they are seldom developed and implemented with any parental input. The active involvement of parents in developing policies can create common ground and mutual understanding. Yet procedures of involving parents are often "menu-driven" in assuming that all families need the same general tailor-made plans and procedures (Turnbull & Turnbull 1997). Problems are also frequently allowed to escalate before parents are contacted. In the process of dealing with these problems, schools often focus on the child's and the family's problems and deficits, failing to recognise their assets and their "expertise" in solving these problems.

Where parents are viewed as assets and therefore rich resources of information and support, more frequent contacts are established with parents. However, families are often still viewed from a **pathological perspective** (Seligman 2000: 32). How easily do we not label parents as "difficult", "a problem", "hard to reach", and "not interested", "in denial" or "absent" and ascribe children's problems to their parents? This is more often the case with families with children with impairments, and with different linguistic and cultural backgrounds. These parents report that they are frequently viewed as incompetent, and the problems that their children may experience are often ascribed to their negligence or their distortion of reality such as denial or displaced anger (Ferguson 2002). They are therefore often analysed and criticised, and regarded as defensive and demanding. These attitudes contribute towards the feelings of guilt and frustration in families and adversely affect participation. On the other hand, inclusive learning communities celebrate the diversity in families (Sands et al. 2000). Families and parents are regarded as resources and contact with families is not aimed at "fixing" families that do not fit the "norm". These communities collaborate with the adults in the children's lives

to facilitate their learning and achievement at school and at home.

Other important factors that impact on developing effective family-school relationships are the teachers' own **competency and self-efficacy** (one's belief in one's own capabilities) related to establishing relationships with parents and communities. People tend to avoid activities and situations where they feel they cannot succeed, but they undertake activities in which they believe they can achieve. Research indicates that higher teacher self-efficacy may encourage more active parental involvement based on higher levels of appreciation of parental efficacy. This reciprocates the response because the more parents feel appreciated, the more they participate in their children's learning.

A factor that can contribute towards or hamper teacher efficacy is teacher training. Teachers are taught essential teaching skills during their initial training, but receive limited if any training in how to work with parents and the community (Christenson & Sheridan 2001: 109, 140; Epstein et al. 2002: 24; Hiatt-Michael 2001: 45). Most teachers would like to involve parents, but many do not know how and are subsequently afraid to take action (Epstein et al. 2002: 11). In addition, teachers also have to deal with the negative publicity and criticism about education and the decreasing respect, trust and support accorded to teachers by parents in the past. All these experiences impact on self-efficacy. It therefore seems crucial for the success of inclusion that teachers be trained to collaborate effectively with parents and be informed about the unique and common characteristics of family dynamics.

Teachers can work on their own knowledge and skills by paying attention to the following:

1. Knowing oneself – accurate self-knowledge of one's own perspectives, strengths and needs
2. Knowing families – identifying the particular characteristics of every family and responding in personalised ways to respect the families' individuality

3. Honouring cultural diversity – relating to others in a personalised and respectful way
4. Affirming and building on family strengths – identifying and appreciating family strengths
5. Promoting family choices
6. Envisioning great expectations for every child and family
7. Practising positive communication skills – using communication skills that most sensitively and respectfully connect with families
8. Ensuring trust and respect – having the confidence that everyone is working together in a caring, non-judgemental and supportive way

- Demonstrating a willingness to learn from mistakes and share successes

To conclude this section, developing and sustaining family–school relationships does not happen overnight. Forming partnerships is an intentional and ongoing process. Furthermore, there is not a “one size fits all” or single most effective approach to developing these relationships. Developing partnerships is an attitude or ethic and not an activity. Building a “sense of community” characterised by a sense of belonging, mutual trust and respect can be a catalyst for such a relationship. Open and frequent communications as well as mutual support are two cornerstones of this relationship. This implies that communication should not only take place when children have problems. It is much easier to contact a partner about a problem when you already have regular contact about achievements. This section emphasises the overlapping sphere of influence between families and schools

Effective **collaboration** is the cornerstone for forming partnerships with families and communities. Christenson and Sheridan (2002: 95) identify the building of collaborative relationships as the common denominator in all models of effective school–home partnerships. This process requires a collaborative ethic, time and effort of every partner involved. A willingness to work collaboratively with parents is reflected in actions such as cultivating two-way communication, increasing learning opportunities for every child, providing mutual support, and engaging in joint decision making. These are new skills that teachers and parents must acquire that can be demonstrated by the following:

- Listening to and acknowledging one another’s perspective
- Regarding differences as assets, e.g. different occupations, cultures, abilities etc.
- Focusing on mutual interests, e.g. the child’s progress, reading, behaviour etc.
- Sharing information and resources to develop a mutual understanding and support plan
- Respecting each other’s skills and knowledge by asking for inputs and ideas
- Planning and making decisions mutually to support parents, teachers and children
- Demonstrating a willingness to address conflict in a constructive way

11.4 SCHOOL–COMMUNITY PARTNERSHIPS

This section demonstrates that the community at large could also serve as an important supporter of home and school by making services available to all children and families, and thus increase the educational participation for all learners. For educators to continue to work in isolation would be to undermine the notion that schools, families and communities share goals related to education and the socialisation of the young (Taylor & Adelman 2000: 1; Epstein 1995: 702 – Force D of Epstein’s model in Figure 11.2). Moreover, limited resources and expertise for dealing with barriers to learning further explain why educational institutions in South African should draw on the strengths of existing community support systems so as to sustain active learning for all (Muthukrishna 2001: 47; Department of Education 1997). Neither the schools nor any other agency can provide the full range of services needed to adequately address social, emotional and behavioural barriers to learning. To justify the necessity for school–community collaborations, we will use three examples often cited in the literature, namely learners’ well-being, capable workforce

and the development of healthy communities (Sanders 2003: 162–164; Jehl et al. 2001: 3).

Learners' well-being

Well-being in this section refers to proper mental and health development. Such a state of health is often facilitated by easy access to social resources such as security and nutrition, to mention a few. Exposure to common societal problems such as poverty, crime and violence tends to encourage learners' engagement in violent behaviour – such as rape, murder, bullying and even harassment of their own peers and educators – within the school environment. They also carry dangerous items in their schoolbags such as drugs, guns and knives. These factors turn schools into unsafe and unhealthy environments and can ultimately impede one's ability to learn. For example, the study conducted in South Africa among young people (Phasha 2002: 94–135) demonstrates a strong link between the emotional consequences of exposure to sexual violence and three areas of school functioning, namely educational progression (dropping out, failing, placement in special classes); interest in school activities (non-attendance, incomplete school assignments) and behaviour at school (aggression, disruption, rebelliousness). This link further bears evidence to the fact that the prevention of inappropriate behaviour in schools and society requires the involvement of the whole community towards the creation of safe places where both learning and healthy development will flourish (US Department of Education 2001: 26). Therefore, concerns for violence at schools provide opportunities for enhancing connections with families and other community resources.

Capable workforce

The term “capable workforce” refers to learners who are well equipped with the skills and knowledge necessary to become productive members of society. Subjects or skills that are irrelevant to the world of work can discourage learners from studying and eventually lead to school dropout. To curb this barrier, schools need to keep up with what is relevant to the job market. Jobs in the 21st century require workers who are competent beyond basic skills level. Sanders (2003: 162)

asserts that children need competence in language as well as technical and communication skills to succeed in the type of jobs that are available. Therefore developing partnerships with community organisations such as business and business leaders puts the school in a better position to know what is relevant to the world of work and thus it is able to prepare its workforce accordingly.

The development of healthy communities

Healthy communities are peaceful and strive to live harmoniously with each other regardless of the prevailing differences. Communities in South Africa differ in terms of race, class, religious and cultural backgrounds, ability and language. Again, some people still hold particular misconceptions about those who are different from them. It is without doubt that misconceptions are potential barriers to learning and can cause hatred among individuals. To reduce such possibilities, schools and communities need to work collaboratively to destroy such misconceptions for the sake of future healthier communities. Such efforts can involve instilling in their youngsters the values of tolerance, understanding, appreciation and respect for diversity. For example, learners could be afforded opportunities to attend educational and extracurricular programmes/activities at schools or community facilities that are located in the different settings of South Africa. Here we are referring to rural, urban, semi-urban and informal settlement settings. Through these efforts learners would become more understanding and appreciative of the lives and practices in settings that are different from theirs. Such strategies could correct common misconceptions that often create barriers to learning and proper development. Problems stemming from poor understanding of each other, such as bullying and school dropout, would also be reduced.

We conclude this section by remarking that there is a great potential for school–community collaborations to flourish in South Africa because community members embrace the philosophy of *ubuntu*. The *ubuntu* principle puts emphasis on respect for human beings, for human dignity and for human life, collective sharing, obedience, humility, solidarity, caring, hospitality, interde-

pendence, communalism and so on (Kamwangamalu 1999: 2). For example, children in South Africa are not perceived as belonging only to their biological parents. Rather, children's welfare and development are the responsibility of any adult in the community. For that matter, teamwork and a sense of group responsibility in addressing barriers to learning should not be perceived as a far-fetched dream.

ACTIVITY

Bearing in mind the situation in South Africa, can you think of other reasons why school–community collaboration is essential, particularly in helping learners overcome barriers to learning?

11.5 COLLABORATION AND ITS COMPONENTS

Professionals are likely to construe collaboration in terms of teams created to work together in a multidisciplinary and/or interdisciplinary style. In essence, these two approaches lack the collaborative element that will facilitate support service delivery by the school, families and communities. Lacey and Lomas (1993: 14) explain that in a multidisciplinary approach the learner is seen individually by a number of professionals representing various disciplines, who then send their recommendations to the educator. Professionals do not meet for a joint discussion regarding the implementation of the recommendations and the support to be provided to the educator. Likewise, an interdisciplinary approach offers an attempt for professionals to meet and discuss their findings; however, the responsibility of implementing the findings also lies solely with the educator. In both approaches, there is a likelihood that the educator might receive conflicting recommendations, or might even choose to ignore some of them. Lacey and Lomas (1993: 14–16) criticise these two approaches on the basis of the following:

- The expertise of team members is sought only when there is a crisis.
- The responsibility for implementing the recommendations reached by the team members lies solely with the educator.
- The issue with regard to the availability of human and material resources to support the teacher in implementing the recommendations is not addressed, as the recommendations are focused on the intervention with the learner.
- Rather than having one joint recommendation, each team member is expected to produce a report often with conflicting recommendations.

Collaboration goes beyond obtaining information from experts and/or just working with someone. It involves the manner in which people work as a team to accomplish shared and clear goals. Friend and Cook (2003: 6) mention that collaboration conveys how the activity is occurring, i.e. the nature of the interpersonal relationship occurring during the interaction and the ways in which individuals communicate with each other. Sources describe collaboration in terms of the following key elements: volunteer participation, parity among participants, mutual goals, shared responsibility and decision making, sharing of resources and accountability for outcomes (Friend & Cook 2003; Friend & Bursuck 2002; Sands et al. 2000: 121). A collaborative relationship is also characterised by the following:

Volunteer participation

Collaboration is a personal choice. Individuals who participate in a team because they were mandated, asked or ordered to do so are not really collaborating because that choice was not made willingly.

ACTIVITY

Consider the situation of a teacher who has been asked by the principal to work collaboratively with the school-based support teacher (learning support teacher) in helping the learner who is experiencing a barrier to learning. The two teachers agree to meet regularly as requested by the principal. During the meeting the learning support teacher decides to undermine the inputs of the regular teacher because he thinks the other teacher knows nothing about addressing barriers to learning. Or the regular teacher decides

to assume a passive role because he thinks he is highly qualified and does not need the inputs of the learning support teacher. Would you regard their working relationship as collaborative?

Under no circumstances would we regard this relationship as collaborative. The responsibility of designing and implementing an appropriate programme for the learner will end up with one teacher. This situation will definitely disadvantage the learner because he will not have an opportunity to benefit from the inputs of the other teacher. Moreover, the working relationship between these two teachers will be negatively affected.

Collaboration would exist only if the teachers embrace the idea of working together. Participants should be prepared to share their own ideas and be open to other people's suggestions so as to agree on responsibilities, best practices and relevant content to help the learner experience success.

Parity

Parity occurs when participants interact as co-equals. Participants do not necessarily have to make equal contributions, be on the same educational level or hold the same post level. Participants' contributions toward a goal should carry equal value. Let us think about the participation of the learner's teacher (with no formal training in barriers to learning), a psychologist, learning support teacher and a parent (e.g. an unemployed and uneducated mother). If during the meeting, the learner's parent is not given an opportunity to make a contribution and/or her inputs are ignored because her level of education is lower than that of the other participants, then collaboration does not occur. All the participants, irrespective of their level of education, are capable of making sound contributions regarding the development of the learner because they are involved with the learner in one way or another. For example, the parent is in a better position to inform the other participants about her child's history and behaviour at home. For that reason, the parent's contri-

bution should be valued because she possesses information that none of the other participants have.

Shared goal

Collaboration does not necessarily require participants to share all goals. However, it is vital that they commit themselves to the attainment of one major goal. Sharing a common goal makes it possible for participants to pool their knowledge and resources and make a joint plan. Let us take an example of team members who hold different opinions regarding the educational placement of a learner who experiences reading difficulties. Parents, owing to limited information about inclusive school practices, may hold a strong belief that their child needs placement in a special class because they believe that he will get special attention that is not available in an inclusive class. Some educators may think it will be appropriate to let the learner remain in the same class as his peers but have an intervention programme adjusted according to his educational needs. Other participants may suggest that the learner spend part of his time in a regular class and visit a special class at particular times. It is without doubt that the participants do not share the same opinion regarding the placement of the learner, but they have one common goal and that is to ensure that the learner experiences educational success. The decision regarding appropriate placement of the learner will have to be negotiated by all participants, or else collaborative efforts will be hindered.

Shared responsibility for key decisions and accountability

Shared responsibility should not be confused with equal division of the workload. Shared responsibility requires participants to exercise *equal influence* over the decisions taken regarding an activity or an endeavour. In addition, participants should be equally answerable for the outcomes of their decisions, whether the results are successful or not. For example, an attempt to help a learner overcome a barrier to learning would require team members to assume different responsibilities in that matter. In this case, the extent and number of responsibilities assigned to participants would not necessarily be equal. One partic-

ipant may be asked to perform one activity, while another is asked to execute more than one. What is important is that all participants would have participated equally and actively in the decisions regarding the allocation of responsibilities.

Sharing of resources

All participants in a collaborative effort are in possession of some kind of a resource, be it in the form of expertise, time, space, equipment or assets. Such resources are equally important for attaining the shared goal. Collaboration occurs when participants share these resources. Let us use an example of team members who are interested in helping learners whose bullying behaviour impacts negatively on their school functioning. The school psychologist may offer helpful techniques on dealing with the bullies. The learning support teacher offers to organise learning materials related to bullying. Another educator may offer to teach these learners during week-ends, while the school principal agrees to make a class available for such activity. Friend and Cook (2003: 11) warn that professionals who cannot contribute any form of resources may be perceived as being less serious about the collaborative goal and may encounter difficulty in establishing parity.

In conclusion, collaboration is an evolving process and therefore it cannot be achieved overnight. At the beginning of collaboration, most people still hold different beliefs regarding how things should be done. But if they believe in teamwork, collaboration will flourish, and trust and respect will prevail among participants. Therefore, it is clear that it requires effort on every participant's part. Friend and Bursuck (2002: 77–81) identify the following attributes as essential for fostering the growth of collaboration:

- **Refinement of one's personal belief system.** This involves thorough checking of oneself, i.e. asking oneself whether one is able to abandon one's ideas in favour of another's. An individual has to be prepared to share views, even if they are weak, and to respect other people's viewpoints.
- **Refinement of interaction skills.** Collaboration as an interactive process requires that individu-

als be in possession of good communication skills. These skills include listening, understanding of non-verbal signs and the ability to ask questions in a non-threatening way (Friend & Bursuck 2002: 79). Words such as "okay" and "uh-huh" assure the listener that one is attentive. Other skills such as shared problem solving; conflict resolution, and the ability to respond to resistance and to persuade others are also necessary. Proper interaction skills will help one deal effectively with disagreements and prevent monopolisation of the conversation.

- **Contribution to supporting environments.** Collaboration requires nurturing of each other, such as making time for the team members and encouraging others to talk.

11.6 FORMS OF SCHOOL–COMMUNITY COLLABORATION

School–community collaboration occurs when human resources and services from both sectors are drawn together to support an endeavour and to address priorities (Muthukrishna 2001: 47). The definition challenges educational institutions to guard against focusing on pooling resources only from formal service agencies. Adelman (2000: 3) explains that the range of resources in a community is much greater than the service agencies and community-based organisations that are often invited to the table. Community-based support systems can be drawn from individuals, business, civic groups, and various sources of social and financial capital including youth, families, religious groups and community-based organisations. In fact, the type of resource the school may choose to mobilise would depend on the type of barrier that is being addressed. To be specific, Taylor and Adelman (2003: 3) highlight that school–community collaboration might target any and/or some of the following issues:

- Sharing the use of school or neighbourhood facilities, equipment and other resources
- Enhancing safety
- Raising funds
- Underwriting activity
- Sharing and disseminating information

- Networking and providing mutual support
- Sharing responsibility for planning, implementation and evaluation of programmes and services
- Building and maintaining infrastructure
- Expanding opportunities for community service, internships, jobs, and recreation and enrichment activities/facilities
- Enhancing public relations
- Sharing celebrations
- Building a sense of community

In the following section, the discussion is focused on common forms of community partnership so as to facilitate an understanding regarding how collaboration between schools and community organisations/individuals can contribute towards addressing barriers to learning (Sanders 2003: 165–172; US Department of Education 2001: 36).

11.6.1 Business partnerships

The Department of Education (1998: 77) argues that the education system in South Africa has often been criticised for its weaknesses in preparing learners for life and the world of work. To address this issue, the school curriculum has to equip learners with knowledge, competencies and orientations to facilitate future active working participation. Therefore, strategies should be put in place to ensure the successful transition of learners experiencing barriers to learning from school to the world of work. Businesses dependent on schools for their labour force have particular needs and perspectives to add to matters that affect schools, such as curriculum development and career education. Their involvement in this matter will enable the education institutions to respond appropriately to the needs of the labour market.

Let us take an example of a large computer company that is interested in providing jobs for individuals coming from disadvantaged communities. The business and the school may join forces to design a curriculum that is tailor-made for the needs of that company. This involves teaching computer science-related subjects (learning areas), and building a computer laboratory for the school. The business may also decide to provide

financial support (bursaries) to learners who are studying computer sciences. On completion of their studies, the company could employ these youngsters. Business can also make its resources available to schools by providing learners with opportunities to gain first-hand experience of particular subjects (learning areas) taught at school. For example, a tourism agency could provide learnerships to learners who are taking tourism as a subject, or organise a tourism lesson for the learners.

Small businesses can also make a major contribution to schools if they are involved. They could assist with food and clothes that schools can donate to learners who are in need, such as those coming from poverty-stricken backgrounds and/or those that have been orphaned by HIV/Aids. For instance, a small pharmacy in central Pretoria has committed itself to working closely with a few schools in townships in the area to help learners in need of such a form of support. It has sponsored a soccer club in one of the schools and is now extending its support to provide food parcels for a few learners who have been orphaned by HIV/Aids.

The involvement of business in schools does not only benefit learners and schools. Businesses also gain from this endeavour. By helping schools design the kind of educational programmes and environments which will better prepare learners to enter the modern workforce, corporations can save more money in future training costs (US Department of Education, 2001: 36).

11.6.2 Partnering institutions of higher learning

Schools may decide to partner with institutions of higher learning such as universities, technikons and technical colleges for a number of reasons, which include exposing learners to careers in particular fields and enhancing education in schools. Strategies to enhance education include making resources such as laboratories, libraries and university sports fields available to learners. University lecturers and students can also contribute by engaging in activities such as preparing learners for examinations, offering extra lessons over weekends and during the winter school holidays.

University students can also be given opportunities to do research and apply the theories learned in programmes to real-life situations. A partnership between the three rural schools in a disadvantaged area and a university serves as an illustration (Hall 2002: 31–37). Teachers, university staff and full-time postgraduate students enrolled in a programme for the support of learners experiencing barriers to learning joined forces in a research study that focused on the development of inclusive educational practices such as teaching, assessment and support in inclusive education. These efforts afforded both parties opportunities to gain insight into barriers that affect the effective implementation of inclusive practice. Furthermore, students had the chance to put their theoretical knowledge into practice while teachers benefited from the support of university students and lecturers.

Another important and unique role that a university could play involves the provision of professional development (Sanders 2003: 166). Studies in South Africa have demonstrated that most professionals in the education system are still struggling to understand the term “inclusion”. Most teachers lack the knowledge and skills to accommodate diversity in their classrooms (Swart & Pettipher 2001: 184; Hay et al. 2001: 213–218). As institutions of higher learning are the only ones that can offer extensive teacher education programmes in this discipline, their partnership with schools will give them insight into the training needs of teachers and thus they can design their programmes accordingly.

11.6.3 Integrated services (health, mental health and safety)

The emergence of the concept of full-service schools demonstrates South Africa’s commitment to ensuring that educational institutions provide quality education for *all* learners through flexibly meeting the full range of learning needs in an equitable manner (Department of Education 2002: 43). The concept of full-service schools embraces the role of the school in bringing complementary services and resources to the school. Common problems that prevail in schools and communities suggest a great demand for health, social welfare, mental health and child protection

services. In this way, the provision of integrated services can benefit learners who live in communities where such services are limited, such as rural and/or informal settlement areas.

Health services can be brought to the school in forms such as mobile clinics (think about the Phelophepa train), regular school visits by school nurses and health promoters. The clinics and school nurses can provide health maintenance examinations, immunisations, and dental check-ups. They can also attend to learners who have chronic diseases such as diabetes, asthma and so on. In this manner, learners’ problems can be prevented, or identified and addressed immediately before they become barriers.

Mental health professionals can serve as partners with life orientation coordinators to address issues pertaining to the promotion of the well-being of learners. Issues such as dating, violence, relationships, teenage pregnancy and HIV/Aids are often addressed together with the schools.

With regard to safety and child protection, “adopt a cop” is often used as a strategy to enable schools and child protection services to work closely with each other. According to this strategy, one police officer becomes responsible for handling crime and prevention issues that affect learners in a particular school or cluster of schools. This strategy gives schools and learners an opportunity to develop stronger ties with their “adopted” police officer.

This form of service delivery can occur at different levels, as identified by Stone (1995: 1). *Level one* involves collaboration among chief executive officers of agencies. This is top-level planning where collaborators develop policies to guide the implementation of joint service delivery. For example, representatives from sectors such as social welfare, education, health and labour could come together to develop policies related to the support of families infected and affected by the HIV/Aids pandemic. Social welfare policies could focus on identifying HIV/Aids-stricken families and children. Education policies could focus on policies that ensure that children from such families are not discriminated against at school. Health can focus on the provision of medicines (anti-retrovirals) for such families. The labour department could also focus on promoting the rights of

such parents to employment opportunities. Collaboration at *level two* occurs among frontline service providers of different agencies. This involves principals of schools and managers of agencies. Collaborators could form teams for sharing knowledge, responsibilities and services. For example, they could decide on how services are going to be divided according to school clusters and/or how a service in a particular school can be made available to other schools located in the same cluster/area. These forms of teams could coordinate services and ensure that they are equally accessible and shared by schools. Collaboration on *level three* occurs on site among academic and support staff and parents. This could involve the participation of parents as volunteers during school trips or the rendering of any other service related to their educational background/expertise. Academic staff could also arrange educational programmes for parents, such as workshops about teenage pregnancy, violence and crime.

11.6.4 Organisations for people with impairments

These types of organisations are not necessarily constituted from individuals with impairments. Some organisations are run by people without impairments and others are run by parents of children with impairments. Generally, these organisations perform various tasks such as promoting the rights of those individuals, support training, and providing information and advice to their members. The involvement of such organisations can facilitate the accommodation and acceptance of learners with impairments into mainstream education, and promote awareness and understanding of such learners. Unesco (2001: 110) highlights the following advantages of working with such groups:

- They can give teachers advice and guidance on how to deal with specific impairments.
- They may be able to supply schools with assistive devices needed by such a learner, offer in-service training and serve on school governing bodies.
- They can be valuable role models for young people with impairments.

Educational institutions should also consider involving individuals who can render services such as transporting or accompanying learners to schools. Learners with visual, physical and intellectual impairments may need to be accompanied by adults to and from schools. Schools could mobilise such forms of support from senior citizens and unemployed adults. For example, senior citizens from a small township in Limpopo province take turns in the mornings and afternoons to accompany children to and from school. They drop and pick them up at the bus stops and also help them cross at traffic lights. The strategy was intended to protect children from perpetrators of abuse because they were often victimised (mostly sexually) on their way to and from schools.

ACTIVITY

- Identify five different ways in which you can involve members of the community.
- Provide a list of other organisations that are available in your community and explain how their involvement could benefit your school in addressing barriers to learning.

11.7 BARRIERS TO EFFECTIVE SCHOOL–COMMUNITY COLLABORATION

Considering the fact that schools and community organisations have never worked closely together, it can be expected that an attempt to bring people from these different organisations together will never be without problems. The following challenges are bound to surface.

Firstly, differences in organisational structure and philosophy between different governmental sectors and some informal community organisations can make understanding between participants difficult. In general, governmental sectors such as education, health, and social welfare are hierarchical in nature. Professionals in those organisations are accustomed to their organisations' procedures of communication and dealing with issues. In addition, informal community organisations do not follow such procedures. These differing working styles may affect collabo-

ration when participants have to work together. Even simple things such as a preference for communicating orally rather than in writing can get in the way of collaboration, unless conscious efforts are made to focus on achieving common goals for the team (Dryfoos 2001: 72). Ordinary community members may find working through channels frustrating while their lack of knowledge regarding “how things are done in formal organisations” can frustrate school personnel (Jehl et al. 2001: 2).

Secondly, different working styles can cause friction, especially if members who are used to working independently and directly with the learner are expected to work closely with others from different disciplines. Such individuals may feel threatened by working with schools, as the ethos of their organisations is not based on sharing of ideas or resources (Lacey & Lomas 1993: 4).

Thirdly, another potential barrier to effective collaboration may stem from the collaborators’ different perceptions about the roles of schools. As noted by Jehl et al. (2001: 9), schools are academically oriented hence their concern for learners’ performance in academic subjects. They may even perceive activities related to guidance, life skills and health matters as disturbing the focus of the school. In contrast, communities expect the school to equip learners with personal and social skills. These differences in views about the role of the school may drive the school and the community partners away from each other and thus make collaboration difficult.

Fourthly, unequal relationships between professionals and ordinary community members can contaminate collaborative efforts. Communities often hold professionals and well-to-do individuals in high esteem. Status differentials mean that it is hard for collaborating professionals to feel they can contribute equally (Lacey & Lomas 1993: 3). Community members may perceive professionals as more knowledgeable in dealing with education-related matters. School professionals may also undermine contributions by community members who do not have advanced qualifications. For the partnership to succeed all members have to be recognised and to respect the strength that comes from each other’s experiences (Dryfoos 2001: 72–73).

11.8 CONCLUSION

We conclude this section with the words of Epstein (1995: 702):

When schools regard their relationship with families as a partnership in which school and home share responsibility for children’s learning, the result is an increase in the levels and types of parent involvement as well as the support that families demonstrate for the school. When this partnership is extended to include the larger community, the benefits are greater yet. Most important is that when the school, home and community share responsibility for children’s well-being, children have more opportunity for meaningful and engaged learning. Children are able to see the connections between the curriculum in the school and the skills that are required in the real world.

The aim of establishing partnerships is to change the interface between families, schools and communities and not merely to solve immediate school-based concerns. This interface must fit the context. There is no “one size fits all” or single most effective approach to achieve this aim. However, the most important principle is to focus our efforts on building supportive, collaborative relationships and to recognise every member in this relationship as a partner. Every effort should be made always to have the child’s well-being in mind.

Questions

1. Define family–school partnerships and explain the ecological factors that impact on the development of these partnerships.
2. Use your own school as a case study and explain how the school’s climate, responsiveness to family needs, school policies and procedures, management and support, beliefs and attitudes, managers’ competencies and self-efficacy, and communication and collaboration skills impact on the development of partnerships with the parents and families of your specific school.

3. Discuss the steps you will follow in preparing educators at your school for school–community partnership.

Bibliography

- Adelman, H.S. 2002. School counsellors and school reform: new directions. *Professional School Counselling*, 5 (4): 1–13.
- Bauer, A.M. & Brown, G.M. 2001. Community in an inclusive high school. In Bauer, A.M. & Brown, G.M. (Eds), *Adolescents and inclusion: transforming secondary schools*. Baltimore, MD: Paul H. Brookes, 73–84.
- Bronfenbrenner, U. & Morris, P.A. 1998. The ecology of developmental processes. In Lerner, R.M. (Ed.), *Handbook of child psychology. Volume 1: Theoretical models of human development*. New York: John Wiley & Sons, 993–1027.
- Christenson, S.L. & Sheridan, S.M. 2001. *Schools and families: creating essential connections for learning*. London: The Guilford Press.
- Davies, D. 2002. The 10th school revisited: are school/family/community partnerships on the reform agenda now? *Phi Delta Kappan*, 33(5): 388–392.
- Department of Education. 1997. *Quality education for all. Overcoming barriers to learning and development*. Report of the National Commission on Special Needs in Education and Training and the National Committee on Education Support Services. Pretoria: Department of Education.
- Department of Education. 2001. *Education White Paper 6. Special Needs Education: building an inclusive education and training system*. Pretoria: Department of Education.
- Department of Education. 2002. *Draft guidelines for the implementation of inclusive education*. Pretoria: Department of Education.
- Dryfoos, J. 2001. *What is a community school?* Research paper undertaken for the Children's Aids Society. New York: CAS.
- Epstein, J.L. 1995. School/family/community partnership: caring for the children we share. *Phi Delta Kappan*, 76(9): 701–712.
- Epstein, J.L. 2002. School, family, and community partnerships: caring for children we share. In Epstein, J.L., Sanders, M.G., Simon, B.S., Salinas, K.C. & Jansorn, N.R. (Eds), *School, family, and community partnerships: tour handbook for action*, 2nd ed. Thousand Oaks, CA: Corwin Press, 7–29.
- Epstein, J.L., Sanders, M.G., Simon, B.S., Salinas, K.C. & Jansorn, N.R. (Eds). 2002. *School, family, and community partnerships: tour handbook for action*, 2nd ed. Thousand Oaks, CA: Corwin Press.
- Ferguson, P.M. 2002. A place in the family: an historical interpretation of research on parental reactions to having a child with a disability. *Journal of Special Education*, 36(3): 124–130, 147.
- Frederickson, N. & Cline, T. 2002. *Special educational needs, inclusion and diversity: a textbook*. Buckingham: Open University Press.
- Friend, M.P. & Bursuck, W. 2002. *Including students with special needs: a practical guide for classroom teachers*. 3rd ed. Boston, MA: Allyn and Bacon.
- Friend, M.P. & Cook, L. 2003. *Interactions: collaboration skills for school professionals*, 4th ed. Boston, MA: Allyn & Bacon.
- Hall, R. 2002. Implementing inclusive educational practices through partnerships. *South African Journal of Higher Education*, 16(3): 31–37.
- Hay J.F., Smit, J. & Paulsen, M. 2001. Teacher preparedness for inclusive education. *South African Journal of Education*, 21(4): 213–218.
- Hiatt-Michael, D.B. (Ed.). 2001. *Promising practices for family involvement in schools: Family School Community partnerships*. Greenwich, CT: Information Age Publishing.
- Hornby, G. 1995. *Working with parents of children with special needs*. London: Cassell.
- Jehl, J., Blank, M.M. & McCloud, B. 2001. *Lesson in collaboration: bringing together educators and community builders*. Washington, DC: Institute for Educational Leadership.
- Kamwagamalu, N.M. 1999. *Ubuntu in South Africa: a sociological perspective to a pan-African concept*. *Critical Arts: Journal of Cultural Studies*, 13(2): 24–41.
- Lacey, P. & Lomas, J. 1993. *Support services and the curriculum: a practical guide to collaboration*. London: D Fulton.
- Mastropieri, M.A. & Scruggs, T.E. 2000. *The inclusive classroom: strategies for effective instruction*. Upper Saddle River, OH: Merrill.
- McCarreher, L. 1999. Being a parent: influences and effects upon parenting from the media. In Wolfendale, S. & Einzig, H. (Eds), *Parenting education and support: new opportunities*. London: David Fulton Publishers, 61–74.
- Moles, O.C. 2001. Family involvement in federal education programmes. In Hiatt-Michael, D.B. (Ed.), *Promising practices for family involvement in schools: Family School Community partnerships*. Greenwich, CT: Information Age Publishing, 25–38.
- Montgomery, M.J. 1999. *Building bridges with parents: tools and techniques for counsellors*. Thousand Oaks, CA: Corwin Press.
- Muthukrishna, N. 2001. Changing roles for schools and communities. In Engelbrecht, P. & Green, L. (Eds), *Promoting learner development: preventing and working with barriers to learning*. Pretoria: Van Schaik, 45–56.
- Phasha T.N. 2002. Child sexual abuse in South Africa: its impact on school functioning. Unpublished doctoral thesis. University of Cambridge. Cambridge.
- Rubin, H. 2002. *Collaborative leadership: developing effective partnerships in communities and schools*. Thousand Oaks, CA: Corwin Press.
- Sanders, M.G. 2003. Community involvement in schools: from concept to practice. *Education and Urban Society*, 35(2): 161–180.

- Sands, D.J., Kozleski, E.B. & French, N.K. 2000. *Inclusive education for the 21st century*. Belmont, CA: Wadsworth/Thomson Learning.
- Seligman, M. 1989. *Ordinary families, special children: a systems approach to childhood disability*. New York: Guilford Press.
- Seligman, M. 2000. *Conducting effective conferences with parents of children with disabilities: a guide for teachers*. New York: Guilford Press.
- Simon, B.S. & Epstein, J.L. 2001. School, family, and community partnerships. In Hiatt-Michael, D.B. (Ed.), *Promising practices for family involvement in schools. Family School Community partnerships*. Greenwich, CT: Information Age Publishing, 1–24.
- Singer, G.H.S. 2002. Suggestions for pragmatic programs of research on families and disability. *Journal of Special Education*, 36(3): 148–154.
- Stone, C.R. 1995. School-community collaboration. *Phi Delta Kappan*, 76(10): 1–10.
- Swart, E. & Pettipher, R. 2001. Changing roles for principals and schools. In Engelbrecht, P. & Green, L. (Eds), *Promoting learner development: preventing and working with barriers to learning*. Pretoria: Van Schaik, 30–44.
- Taylor, L. & Adelman, H. 2000. Connecting schools, families and communities. *Professional School Counselling*, 3(5): 298–308.
- Turnbull, A.P. & Turnbull, H.R. 1997. *Families, professionals and exceptionality: a special partnership*, 3rd ed. Upper Saddle River, NJ: Merrill.
- United Nations Educational, Scientific and Cultural Organisation (Unesco). 2001. *Understanding and responding to children's needs in inclusive classrooms: a guide for teachers*. Division of Basic Education: Paris.
- US Department of Education. 2001. *Building community schools*, 3rd ed. New York: The Children's Society.
- Walker, J. 1999. Families and society: change and continuity. In Wolfendale, S. & Einzig, H. (Eds), *Parenting education and support: new opportunities*. London: David Fulton Publishers, 33–47.
- Wall, K. 2003. *Special needs and early years: a practitioner's guide*. London: Paul Chapman Publishing.
- Wolfendale, S. & Einzig, H. (Eds). 1999. *Parenting education and support: new opportunities*. London: David Fulton Publishers.

Notes

- 1 “Parents” is the preferred term used in South African legislation and policies, e.g. the SA Schools Act 84 of 1996. The concept “parents” is therefore used in the broadest sense to include legal guardians as well as primary caregivers such as grandparents.



Section

F

Addressing disability

ORIENTATION: NEUROLOGY IN AN EDUCATIONAL PERSPECTIVE

12

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Revised by **DEIRDRE KRÜGER**

Learning outcomes

After reading this chapter you should be able to

- ▶ discuss the neuron and its functions
- ▶ understand neural development and growth
- ▶ understand the functions of a few substructures of the brain
- ▶ indicate how malfunctioning of or damage to certain substructures of the brain influence the learner's learning
- ▶ explain the role of the reticular system in relation to teaching and learning
- ▶ understand the visual pathways
- ▶ understand the auditory pathways
- ▶ discuss the general or basic causes of brain damage.

Key terms

central nervous system (CNS) ♦ peripheral nervous system ♦ autonomous nervous system ♦ neuron ♦ axon ♦ dendrite ♦ synapse ♦ neurotransmitter ♦ neural development and growth ♦ brain stem ♦ midbrain ♦ pons ♦ medulla oblongata ♦ brain (cerebrum) ♦ spinal cord ♦ cerebellum ♦ mesencephalon (midbrain) ♦ cortex ♦ diencephalon ♦ basal ganglia ♦ the reticular formation ♦ thalamus ♦ hypothalamus ♦ hypophysis ♦ cerebral hemisphere ♦ corpus callosum ♦ frontal lobe ♦ parietal lobe ♦ occipital lobe ♦ temporal lobe ♦ limbic lobe ♦ spinal nerves ♦ motor pathways ♦ visual pathways ♦ auditory pathways ♦ basic causes of brain damage

12.1 INTRODUCTION

This chapter contains a basic introduction to neurology, the purpose of which is to describe the structure and function of the human brain and related nervous structures. An understanding of basic neurology will enable teachers to acquaint themselves more easily with various kinds of impairment that will be discussed in chapters to follow.

The human central nervous system comprises the spinal cord and the brain. The nervous system consists of nerve cells or neurons. Neurons come in different shapes and sizes and fulfil different functions, the primary one being to generate and transmit nerve impulses.

The human nervous system is a unit, although two parts may be identified:

- **The central nervous system.** This comprises the brain, midbrain, brainstem, cerebellum and spinal bulb (also called the medulla oblongata) which is situated in the skull as well as the spinal marrow (spinal cord) that is enclosed and protected by the spine.
- **The peripheral nervous system.** This comprises the nerves (cranial and spinal) that run from the spinal cord and the brainstem to all the other parts and organs of the body. There are 43 pairs of nerves which emanate from each side of the spinal cord and which together are known as the peripheral nervous system. The peripheral nervous system consists of 31 pairs of spinal nerves and 12 pairs of cranial nerves, ganglia and nerve plexuses (Reid 1996: 1).

The nervous system is concerned with the integration and control of all bodily functions. In particular, the central nervous system is concerned with irritability (the ability to receive and respond to messages from the external and internal environments) and conduction (the ability to transmit messages to and from coordinating centres). The autonomous nervous system is also a subsystem of the nervous system and has two separate parts, namely the parasympathetic and sympathetic nervous systems. The parasympathetic nervous system promotes general vegetative functions of the body (such as the digestive system, blood circulation and excretory processes) and the sympathetic nervous system mobilises the resources of the body to meet emergencies.

ACTIVITY

How will you explain a person being able to jump over a high wall when chased by a vicious dog?

The sympathetic nervous system is one of the wonderful attributes of our bodies and ensures survival in various emergencies, such as giving us the ability to jump over a high wall.

12.2 THE NEURON AND ITS FUNCTIONS

A neuron is a cell that forms part of the human nervous system. The central nervous system (CNS) of the human body consists of the spinal cord and the brain, and is made up of nerve cells or neu-

rons. In order to understand the functioning of the nervous system as a whole, it is essential to know what occurs in the single nerve cell or neuron. Attention will be given only to the neural processes in the individual nerve cells which best illustrate the essentials of nerve functioning as manifested by and involved in man's physical and mental processes.

The nervous system basically consists of a variety of nerve cells, of which only the neurons will be discussed. They are of different shapes and sizes and perform different functions in various parts of the central nervous system, but basically they contain the same elements. Their essential function is to generate or conduct nerve impulses.

12.2.1 The structure of the neuron

The nerve cells consist of cell bodies and their axons. The axons form what are basically known as "nerves". Certain parts of the central nervous system are predominantly white, while others are predominantly grey in appearance. The grey parts consist mainly of grey cell bodies (Batshaw 1997: 301). The axons, on the other hand, are encased in a sheath (the myelin sheath) which consists of a white fatty layer. As a result, large sections of the brain and spinal cord where cell bodies of neurons are grouped together are grey, while the rest – the so-called pathways of the central nervous system consisting mainly of bundles of axons – are white in appearance.

The nervous system basically consists of a variety of nerve cells, of which only the neurons will be discussed here.

Neurons and nerves should not be spoken of separately. Nerves constitute part of the neurons, being offshoots or extensions of the nerve cells along which nerve impulses are transmitted. When a neuron dies the nerve will die off too, since the latter is nourished and sustained by the neurons.

The neuron is a cell body consisting of a membrane or sac filled with a variety of tissues and fluids, and contains a nucleus which determines the functions and survival of the neuron. The cell body is also known as the *soma* of the nerve cell.

On both sides of the nerve cell are offshoots,

also known as processes. On the one side is one process only – the axon – whose length varies with the different nerve cells, sometimes reaching a length of a metre or more.

On the other side of the neuron are dendrites, a number of offshoots that are thick when close to the cell body but gradually taper off to become fine at the extremities. These dendrites are short and point in all directions. In some cells the dendrites can run into thousands. At the extremity of

the axon are short, fine terminal branches known as telodendria which resemble dendrites except for a thickening at the ends (terminal buds). An important point to note is that the membrane which encases the nerve cell stretches over the entire axon and dendrites, so that the whole neuron with its offshoots is encased by the same membrane. Were it not so, no impulse could originate in or be conducted by a nerve cell, the membrane being essential for this purpose.

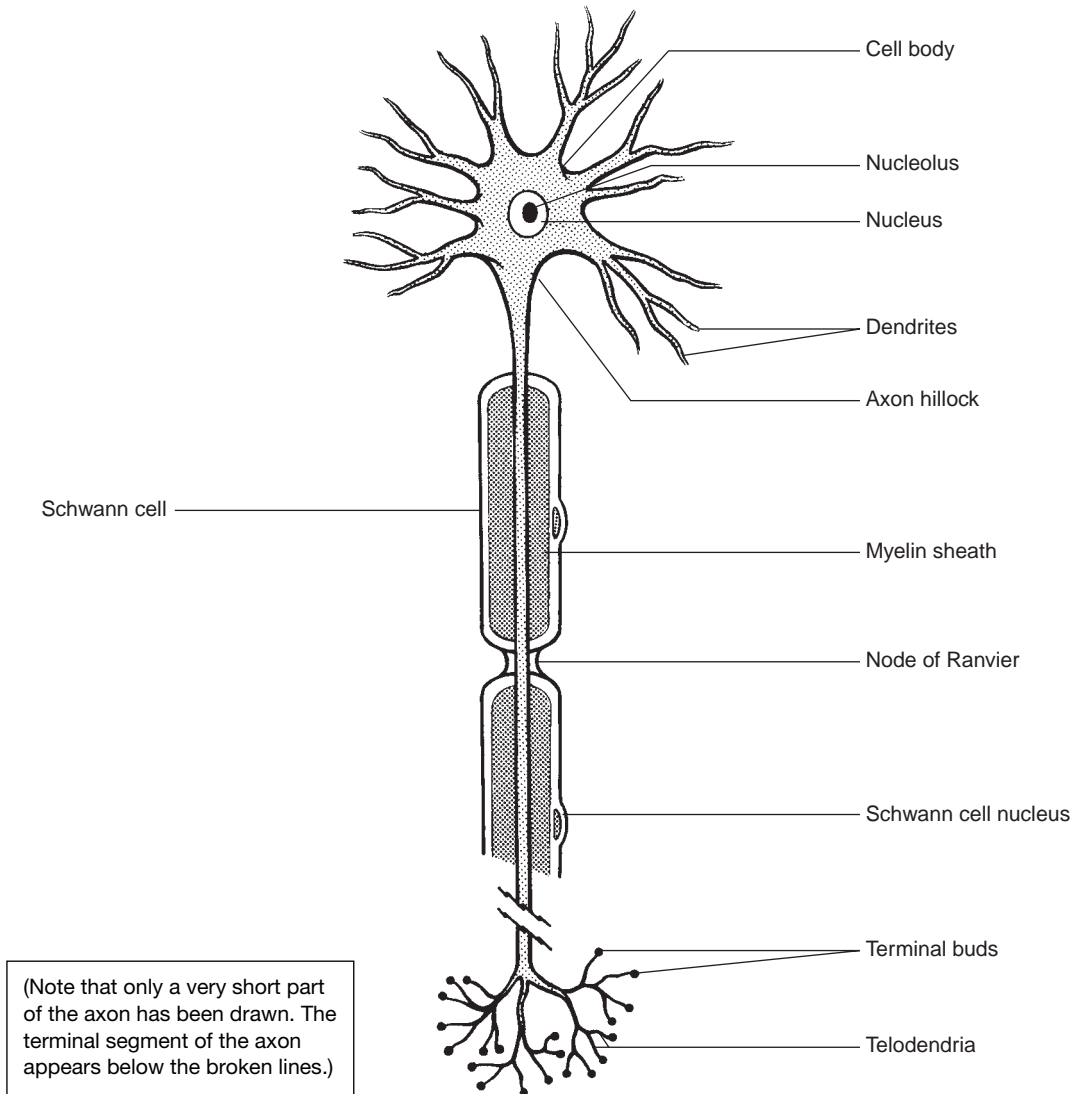


Figure 12.1 A highly simplified representation of a peripheral neuron

Source: Kapp 1994: 203

If you are to learn now that excessive discharges in the brain are involved in epileptic processes, where would you say that a neuron would fit into the picture?

The essential function of neurons is to generate or conduct nerve impulses. For some or other reason an excessive amount of activity is generated and discharged, thus causing an epileptic process to take place.

When damaged, regeneration of nerve fibres in the central nervous system is minimal and the affected region is changed into a scar. In spite of negligible regeneration a very large degree of functional recovery can take place if the extent of the damage is limited. This functional recovery is due to the reorganisation of connections within the brain and the term “plasticity” is given to the possibility of rearrangement (Reid 1996: 46). Note that the Christopher Reeve Paralysis Foundation is currently engaged in exciting groundbreaking research; regrowth of neurons in mice has already been achieved.

12.2.2 The synapse

Nerve impulses cannot be restricted to the neuron in which they originate as this would serve no purpose whatsoever. The impulses must be transmitted to the following neuron, through to the end of the chain of neurons involved in the specific activity. This transmission of nerve impulses to subsequent neurons occurs through a system of “junctions” between neurons which are known as **synapses**. These are the “meeting points” between the extremities of, for example, the axon of one neuron and the dendrites of the next. There is no physical continuity at the point of “contact”. There is a small gap between these extremities, which is known as the synaptic cleft.

The nerve cell conducting an impulse to the next neuron is known as a presynaptic neuron, and the one receiving the impulse is called a postsynaptic neuron. The latter, of course, becomes a presynaptic neuron as soon as it in turn transmits the impulse. We therefore refer to a presynaptic and postsynaptic membrane at the point of “contact” in the synapses (see Figure 12.2).

The extremities of the axon (telodendria) of the presynaptic neuron can make “contact” with the

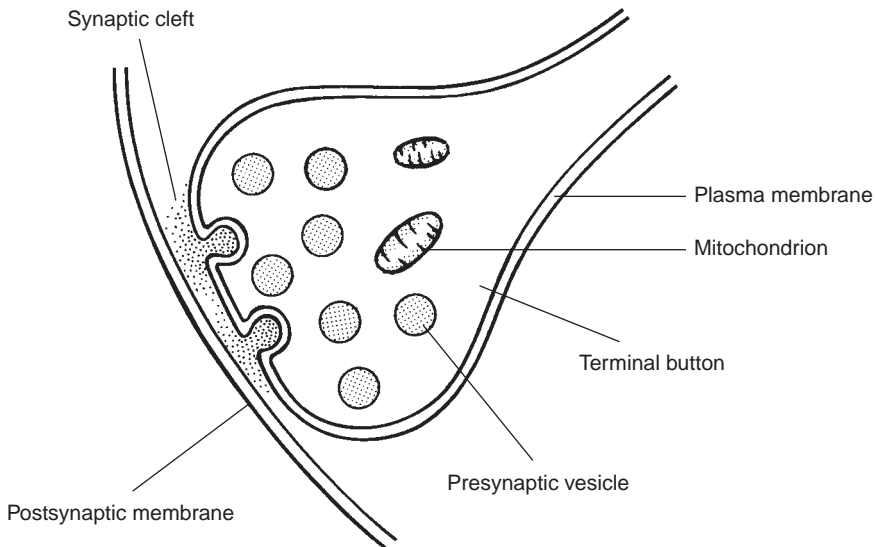


Figure 12.2 A diagram representing the synapse between an axon terminal bud and the membrane of a postsynaptic neuron (Note the neurotransmitters being released in the synaptic cleft.)

Source: Kapp 1994: 206

postsynaptic neuron in several ways. As already explained, at no point is there complete contact, since a gap – known as the synaptic cleft – always remains in the regions of “contact”. It is estimated that on average every nerve cell in the central nervous system is connected to 100 other neurons and receives impulses from 100 other neurons. One neuron could therefore be pre- and post-synaptically connected to many other neurons.

An almost infinite number of connections are possible between the approximately 30 billion neurons of the central nervous system. This indicates the complex connections that are feasible and the numerous possibilities for utilising alternative connecting pathways in the central nervous system. This fact assumes importance when thought is given to the possibility that one part of the brain may take over the functions of another, damaged part.

12.2.3 Neurotransmitters

There are many different kinds of neurotransmitters – too many to discuss fully here. Over the years a tremendous amount of research has been conducted on the chemicals involved in synaptic transmission. There are two main groups of transmitters, namely cholinergic and adrenergic substances. An explanation of their structure and function is highly technical and is not relevant here.

The substances are found in free forms in the neurons and collect in vesicula (little bags) in the axon terminals or terminal buds. When the neurotransmitters are released into the synaptic cleft during the conduction of an impulse, they have one of two effects. Firstly, one group of substances can stimulate the postsynaptic wall sufficiently to facilitate further conduction of the

impulse from one neuron to another. Secondly, the release of a second type of substance can inhibit conduction of the impulse from one neuron to the next section.

12.2.4 Neural development and growth

It is important to remember that neurons are not yet fully developed at birth, although it is questionable whether new neurons can be formed after birth. Myelination increases constantly and dendrites are formed in large numbers, at least during the first two years of a child’s life. The growth of the neurons, through myelination and dendritic proliferation, is mainly responsible for the increase in the mass of the brain. Furthermore, there is good reason to believe that axons develop new collaterals and that telodendria increase likewise.

Myelination refers to the process whereby an external sheath develops to cover and protect the nerves. At birth, the body’s nervous system is not yet completely developed (Batshaw 1997: 301) and the functional areas in the brain which myelinate last are consequently exposed for a longer period to possible damage from outside.

ACTIVITY

Why would you say is it important that an infant receives nutritional food and is stimulated?

This is important in order to facilitate the development of the neurons (remember that neurons are not yet fully developed at birth) and the neural pathways (dendrites are formed in large numbers).

12.3 A FEW SUBSTRUCTURES OF THE BRAIN

In a previous section the structure and functioning of neurons as “building blocks” in the nervous system were discussed. Such a building block would be meaningless, however, if it were to function in isolation. Its functioning only becomes significant once it forms part of a functional system of the nervous system (NS) as a whole. However, one should guard against the erroneous assumption that the NS can be rigidly divided into

ACTIVITY

Did you know that certain antidepressants inhibit the reabsorption/reuptake of selected/some serotonin (a neurotransmitter)? This type of antidepressant is known as an SSRI. See if you can decipher what SSRI stands for.

SSRI stands for “selective serotonin reuptake inhibitor”.

loosely functioning centres or units, since the system in its totality forms one single functional entity. The parts flow from or into one another and thus it is not a case of loose parts which are connected to one another. In this section some of the substructures of the NS will be studied, with special reference to the significance of their dysfunction and the resultant forms of impairment.

12.3.1 The brain stem

The brain stem is a comprehensive term for the midbrain, pons and medulla oblongata (elongated spinal cord). The anatomic structures it contains serve as a junction between the brain (cerebrum), the spinal cord and the cerebellum (see Figure 12.3). Together, these parts send out 12 cranial nerves that control such diverse functions as breathing, swallowing, seeing and hearing. These nerves also affect facial expression, eye and tongue movements, and salivation. This then explains why children with cerebral palsy (due to damage to the brainstem) may have – in addition to motor problems – sucking and swallowing problems, strabismus, excessive salivation and speech disorders (Batshaw 1997: 305).

The actual mesencephalon (midbrain), which is only approximately 2 cm long, forms part of the brain stem. It is here that the two large cerebral peduncles (by means of which the two hemispheres of the cerebrum are attached to the brain stem) flow out of the brain stem. At the back of the midbrain there are also four small knobs (collicula) forming the *corpora quadrigemina* (quadruple bodies), which are involved with the reflexes of vision and hearing (see Figures 12.8 and 12.9). The mesencephalon also contains a number of smaller structures such as the red nucleus (*nucleus ruber*) and the black matter (*substantia nigra*), which will not be discussed any further.

In the same way in which the thalamus (see section 12.3.2.1) relays sensory impulses from the skin, muscles and tendons to the sensory area of the brain, the midbrain receives, arranges and relays impulses from the eye and ear. However, the auditory and visual pathways reach the midbrain via the cranial nerves and not via the spinal chord.

The pons (also called bridge or metencephalon) is about 5 cm long and is formed by cross-fibres situated in the anterior of the brain stem, between the mesencephalon (midbrain) and the

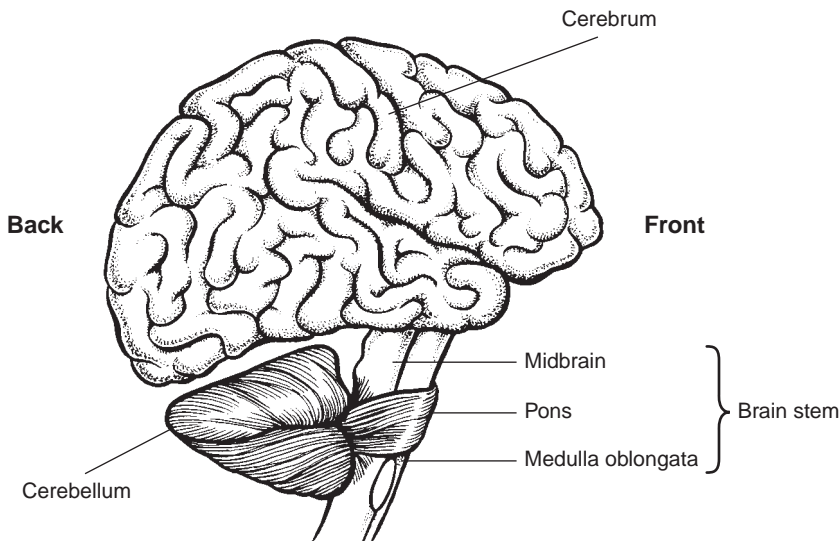


Figure 12.3 Sketch indicating the location of the most important divisions on the right side of the brain

Source: Kapp 1994: 211

medulla oblongata (elongated spinal cord). Its importance lies mainly in the fact that it is the section through which the so-called cerebellar (little brain) peduncles pass en route to joining the small brain with the spinal cord and the midbrain. All voluntary motor impulses coming from the cortex are first relayed via the pons to the cerebellum for coordination.

ACTIVITY

If a person sustains damage to the cerebellum, which motor area will be affected?

Injuries to the cerebellum are called ataxia if this results in cerebral palsy. A person with ataxia, a form of cerebral palsy (discussed in Chapter 13C), will thus experience problems with ...?

The motor area that will be affected is coordination. Ataxia is characterised by poor coordination.

The medulla oblongata is about 8 cm long and most nerve pathways cross here. Since the motor nerve pathways cross in the elongated spinal cord, an injury or lesion on one side of the brain will affect the motor functioning of the body on the opposite side.

12.3.2 Grey matter in the centre of the brain

The “centre of the brain” refers here to the deeply embedded sections of the brain situated between the midbrain and the cortex. Of particular importance for this chapter are the diencephalon, basal ganglia and the reticular formation. These structures are sometimes referred to as the subcortical structures of the cerebrum (large brain) which indicates that they are situated below the cortex. (A discussion on the cortex follows later.)

12.3.2.1 The thalamus

The thalamus constitutes the first and major part of the diencephalon and is a very important part of the subcortical structures in the centre of the brain. It is divided into two parts, one in each hemisphere.

The main function of the thalamus is to relay nerve impulses. In particular, it receives impulses

from the afferent (sensory) nerves of the body and transmits or conducts them to the correct centres in the cerebral cortex via the specific sensory projections. Impulses from all parts of the cortex also arrive at the thalami (plural of thalamus) and the latter in turn pass them on to their further destinations. In fact, the thalamus has to-and-fro connections with almost all parts of the central nervous system — with the cerebral cortex; with the cerebellum; with the structures and nuclei of the brain stem; with the spinal cord and the nuclei of the cranial nerves; with the other nuclei in the middle of the brain; and even with itself as a result of connections between the various parts of the thalamus.

This comprehensive network of connecting tracts with other parts of the brain makes the thalamus the great coordinator of the brain. It correlates the operation of all parts of the brain and ensures that they function together as one integrated unit. The thalamus does not only relay, however. It also has the function of promoting and retaining impulses. It can give preference to certain impulses while inhibiting impulses of lesser importance. Acute sensations of pain, heat and cold can already be interpreted here.

ACTIVITY

If the functions of the thalamus can be translated into an ordinary metaphor, which one will be most suitable? The thalamus can be best compared to a switchboard at a big business, a railway station or an undercover agent. Choose one and motivate your answer.

In this case the thalamus can be best compared to a switchboard of a huge business that receives all the incoming calls and diverts them to the correct destinations or receivers at the other end. The switchboard operator/s can also decide to relay emergency or very important calls more quickly and put less important calls on hold. If you have argued that a railway station (such as the large one in Germiston) can also be used as a metaphor for the thalamus, you are quite right, because a railway station can divert trains to various directions and to various destinations.

12.3.2.2 The hypothalamus

The second part of the diencephalon (literally meaning “double head”) is known as the hypothalamus. It is usually mentioned in conjunction with its appendage, the hypophysis (pituitary gland), since the hypothalamus performs its main functions through the latter. The functions of the hypophysis are chiefly physiological and will therefore not be discussed here in detail.

As its name indicates, the hypothalamus is situated below the thalamus and constitutes what may probably be regarded as the most powerful four grams of cell tissue in the entire human body! In one way or another it is involved in most forms of physical activity, especially those relating to the so-called vital functions.

The functions of the hypothalamus and hypophysis may be divided into the following groups:

1. Those regulating body temperature and the phenomena related to it, such as sweat secretion and heat production
2. Those regulating the cardiovascular functions (the heart and vascular system), such as the heartbeat and blood pressure
3. Those regulating the metabolism, e.g. appetite behaviour, such as hunger and thirst, maintenance of the water balance in the body, digestive processes, and the speed of metabolism, e.g. rate of consumption of carbohydrates
4. Those regulating the secretions from the endocrine glands which affect or control so many body functions, e.g. metabolism, growth processes, sexual characteristics, reproductive processes
5. Those regulating the sleeping cycle, conditions of sleeping and wakefulness, etc.

The hypothalamus and the thalamus (seen as part of the limbic system) jointly constitute the major control centres of man’s emotional life. In reality, conscious control of emotional conditions by means of the cerebral cortex is limited. One should always bear this in mind. The hypothalamus exercises its control over body processes and over emotional conditions by means of the autonomic nervous system, of which it is the most important centre of control in the brain.

“In reality, conscious control of emotional conditions by means of the cerebral cortex is limited.” If there is a learner in your class who has problems with explosive behaviour (bouts of anger), will you reprimand the learner to control himself?

You have learned in the above section that the “hypothalamus exercises its control over body processes and over emotional conditions by means of the autonomic nervous system”, meaning that the learner’s aggression will most probably not be under voluntary control. The learner’s aggression will need more specialised support, which can range from a neurological examination to an investigation into the learner’s environment.

ACTIVITY

12.3.2.3 The basal ganglia

The “basal ganglia” is a term used for a number of bodies extremely complex in structure (the singular of ganglia is *ganglion*, which is the Greek word for a knot of nerves). The basal ganglia are situated in the proximity of the thalamus and reach as far as the brain stem. The details of their complex structure and functioning will not be discussed here, but the most important functions of the basal ganglia will be dealt with briefly.

They play a vital role in body movement especially in the control of muscle movements. When damaged, a major form of cerebral palsy, known as athetosis, may result (this condition is discussed in Chapter 13C).

The basal ganglia are subcortically located (i.e. below the cortex) and are situated alongside and below the thalamus as far as the brain stem. They are therefore situated at the base (bottom) of the cerebrum, hence the name *basal ganglia*.

There are a number of other nuclei that are considered to form part of the basal ganglia but which will not be discussed further here (e.g. the red nucleus and the *substantia nigra*).

12.3.3 The cerebellum

The study of the cerebellum links up with that of the basal ganglia since it, too, is concerned

with the control of movement.

The cerebellum (or little brain) lies behind the brain stem and below the posterior parts of the cerebral hemispheres (large brain). The cerebellum consists of two hemispheres, joined together in the middle by the vermis, a wormlike structure. The cerebellum has a corrugated appearance, and each half is connected to the rest of the central nervous system by means of three fibre masses, the cerebellar peduncles.

The three pairs of peduncles connect the two hemispheres of the cerebellum with the midbrain (the top pair), the pons (the middle pair) and the medulla oblongata (the bottom pair). Figure 12.3 shows how the pons and cerebellum are folded around the brain stem.

An important aspect of the operation of the cerebellum is that the body is ipsilaterally (i.e. the same side) represented there (motorially and sensorially) because double crossings of the nerve tracts to and from the cerebellum take place. A detailed explanation of these crossings is unnecessary. Their net result is, for example, that the left hemisphere of the cerebellum receives sensory information from the left side of the body and controls motor activity on the same side of the body. This is different from processes in the cortical hemispheres, as will be evident later on.

It is the main centre for coordination of muscular movement, i.e. for the harmonious cooperation of the different muscle groups, by which the smooth execution of various complicated actions are made possible. The cerebellum seems to be especially involved with three types of activity:

- Balance
- The upright posture of the body
- The coordination of voluntary muscle movements

By the delicate regulation and grading of muscular tone in the relevant muscles, the cerebellum makes body movements smooth and flowing. Maintenance of muscle tone (tonus) is one of the basic functions of the cerebellum. The tonus is also important for the maintenance and correcting of body posture and serves as a stable muscular background for the execution of movement. The speed of one's reflexes (reaction time) also depends on muscular tone.

ACTIVITY

Earlier on we said that ataxia – a form of cerebral palsy – is characterised by poor coordination. (Remember that ataxia results from damage to the cerebellum.)

Apart from a problem with coordination, what other problems might a person with ataxia also experience?

The answer is in the section above. Now you know that a person with ataxia may experience problems with balance, upright posture of the body, and the coordination of voluntary muscle movements.

Further, the cerebellum supplies the cerebral cortex with information predicting the anticipated results of body movements so that the planning of movement can be suitably adjusted, and movements executed effectively and purposively.

The cerebellum cannot initiate movement. It can only lead and direct movements that have been initiated by the cerebral cortex. Since the cerebellum has such an important role in controlling complicated body movements and voluntary actions, damage to it will obviously have far-reaching consequences. Any dysfunction of the cerebellum seriously impairs coordination, muscle tonus, maintenance of body posture and balance, deliberateness and effectiveness of actions, etc.

12.3.4 The cerebrum

The outer layer of the large brain (cerebrum) is called the cerebral neocortex. The large brain consists of billions of neurons and its thickness varies between 2,5 cm and 5 cm. The larger part consists of white matter – in other words, myelinated axons. The outer layer of the cortex is grey (“grey matter”) and is formed by the cell bodies of the neurons. Their thickness varies between 3 mm and 4 mm.

The cerebral cortex forms by far the greater part of the human brain. Its area is so extensive that it can be fitted into the skull cavity only by intricate convolutions. Of the whole area of the cortex, only about one-third is visible at the outer convexity of the brain. The rest lies within the convolutions formed by the cortex.

The cortex, together with other parts above the brain stem, is known as the cerebrum and the two halves are referred to as the cerebral hemispheres. The two hemispheres of the cortex are almost completely separated, their only connection being certain structures deep in the brain. The most important connection between the hemispheres is the corpus callosum, an arched, relatively thick layer of transverse fibres that are part of the white matter (group of axons) of the brain which form the connecting neurons. The corpus callosum permits the exchange of information between the two hemispheres (Batshaw 1997: 301). The two hemispheres are further connected to the brain stem by two thick bundles of white fibres known as the cerebral peduncles. On the upper side and at the front and back, the two hemispheres of the brain are separated by a deep longitudinal fissure.

The two hemispheres are also connected to certain structures located in the centre of the brain and usually referred to as the subcortical centres. The diencephalon and the basal ganglia have been dealt with in this regard in a separate section (see above).

The convolutions of the cortex do not follow straight lines but show intricate contortions and frequently branch into smaller convolutions. The rounded convoluted parts are called cortical convolutions or *gyri* (singular: *gyrus*) and many of them have definite names. The fissures or folds are called grooves or *sulci* (singular: *sulcus*), and some of the larger grooves are known as *fissurae* (singular: *fissura*). These fissurae also have special names, which will not be dealt with here (see Figure 12.4).

The sketches in this chapter (especially Figure 12.5) indicate the approximate division of the cor-

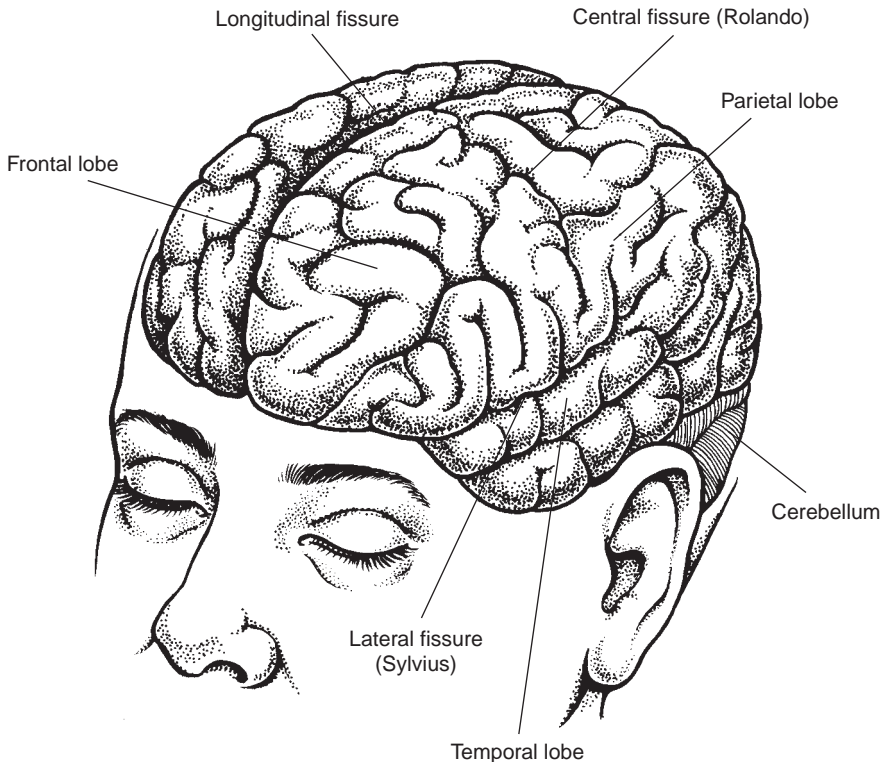


Figure 12.4 Drawing indicating the position of the brain in the skull. The lobes and fissures are clearly visible.

Source: Kapp 1994: 217

tex into lobes. This is a traditional and somewhat arbitrary division used for practical purposes. It does not correspond completely to the functional organisation of the cortex, though specific functions may be located in particular lobes.

On the outer circumference of the cortex four lobes are distinguished, i.e. the frontal, parietal, occipital and temporal lobes. The location of the different lobes can be seen on the drawings. Note that the central fissure (Rolando's fissure) separates the frontal and parietal lobes, while the temporal lobes are situated below the lateral fissure (Sylvian fissure). The separation between the parietal, temporal and occipital lobes towards the back of the brain is arbitrary and is indicated by imaginary lines in the drawings.

Each of the four main types of lobe of the brain will now be discussed briefly.

12.3.4.1 The frontal lobes

Apart from planning and controlling all the body's muscle activity (motor output), these lobes also play a role in the higher mental functions of planning and abstract thinking.

Directly in front of the fissure there is a strip

which runs parallel to the fissure from top to bottom, called the primary motor area. Each locus on the strip is associated with the muscles of specific parts of the body. It is interesting to note that the muscles responsible for the finer coordinated movements of, for example, the fingers and the lips, represent a larger surface on the motor area than muscles performing simpler movements, such as those of the torso.

Directly adjoining the primary motor area is an area with an inhibitory function. Adjacent to the inhibitory area is the secondary motor area. The rest of the frontal lobe (also known as the pre-frontal lobe) is concerned with association. In the left frontal lobe, in the primary motor area, we find an expressive (motor) speech area.

It is important to note that this lobe is especially associated with the initiation of movement, with expressive language and with behaviour. A dysfunction in this lobe can therefore affect the learner by giving rise to poor short-term memory, impulsiveness and incapacity for abstract thinking, expressive aphasia (inability to produce speech) and a general lack of initiative and spontaneity.

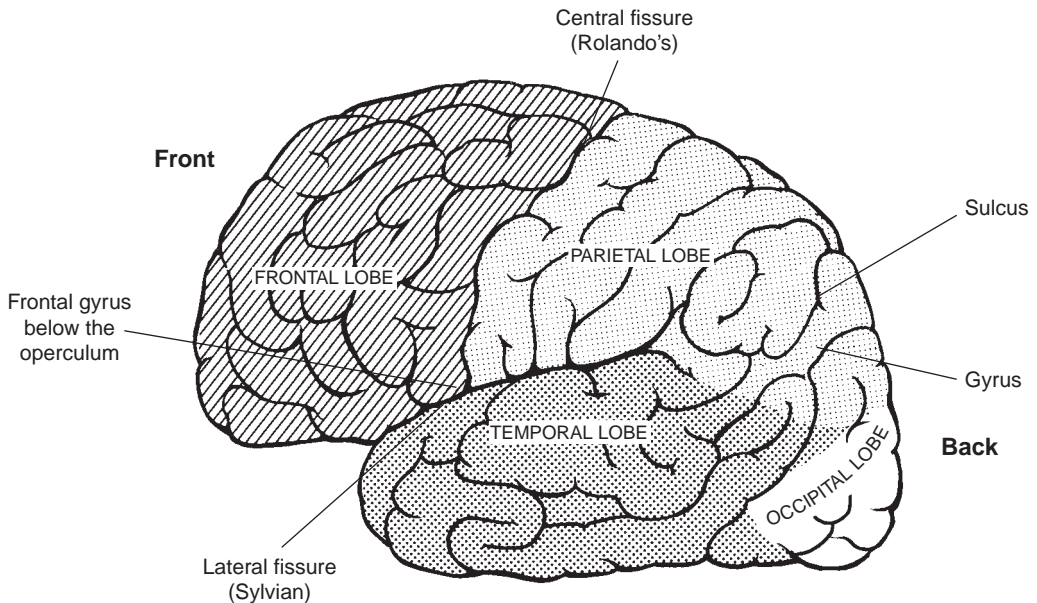


Figure 12.5 Lateral view of left cortical hemisphere of the cerebrum

Source: Kapp 1994: 218

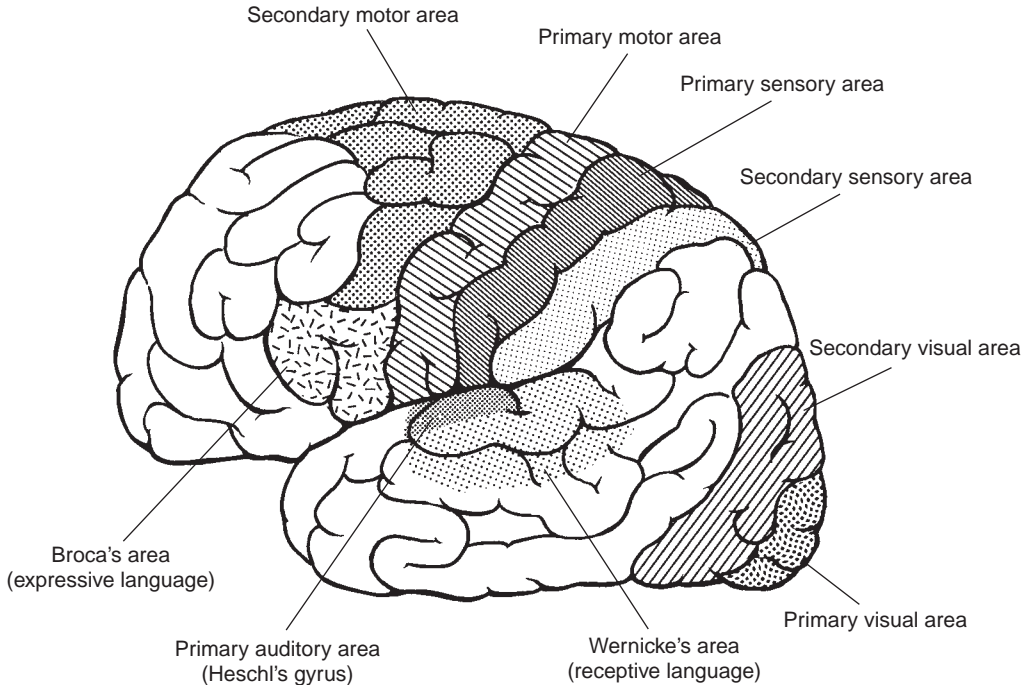


Figure 12.6 Motor and sensory areas of the brain

Source: Kapp 1994: 218

12.3.4.2 The parietal lobes

These lobes are responsible for all the somatosensory or somaesthetic functions. In other words, this part of the brain receives all the tactile, kinaesthetic, proprioceptive and other physical-sensory impulses sent to it from special receptor organs throughout the body. These probably include olfactory and gustatory impulses.

Directly behind the central fissure, parallel to the primary motor area of the frontal lobe, we find the primary somaesthetic area (which has to do with the body's sensory impressions). Information from the sensory organs in the skin (touch, pressure, warmth, cold, pain) comes to this area via the thalamus (remember the "switchboard"?).

As in the case of the primary motor area, a specific part of the body is represented at each locus on the primary sensory area. Directly behind the primary somaesthetic area is the secondary somaesthetic or the somaesthetic association area.

Deviations in this lobe give rise to problems with spatial orientation, tactile discrimination, body consciousness, visual perception and visual memory.

12.3.4.3 The temporal lobes

Below and diagonally behind Sylvius' lateral fissure we find the temporal lobes whose main responsibility is to control auditory abilities and associated language activities. These lobes also have a share in controlling human emotions and memory. The temporal lobe is situated below the lateral sulcus, approximately opposite the external ear. The largest part of the temporal lobe is classified as an association area. The primary auditory area (Heschl's gyrus) is approximately in the middle of the top convolution of the temporal lobe. This is the cortical area for the reception of information received via the ears. Wernicke's area (Figure 12.6), which is associated with language comprehension, is also found in this lobe.

Dysfunctioning of this lobe can give rise to numerous problems, including faulty reception, comprehension and interpretation of auditory stimuli and problems with memory, especially short-term memory. Damage to Wernicke's area causes problems with language comprehension, and serious damage may even cause receptive aphasia (inability to understand language) in the person concerned.

ACTIVITY

You receive a report from a neurologist stating that a learner is suffering from left temporal lobe epilepsy (or complex partial seizures). How will you explain to the parent where the left temporal lobe is, using your own head as a reference?

First of all you will briefly explain that the brain has two hemispheres and that on the outer circumference of the brain four lobes are distinguished. The frontal lobes are in the front, pointing to the two bumps that you can feel on your forehead. The occipital lobes are at the back of your head (more or less in line with your eyes) and they are involved with vision, that is perhaps why the saying originates that a person has eyes in the back of his head. The parietal lobes are like an Alice band across the head. Point to your temples to indicate where the temporal lobes are located.

12.3.4.4 The occipital lobes

These are the smallest of all the cortical lobes. Their main responsibility is to ensure that visual impulses related to these areas are analysed and interpreted by the cortex.

These lobes are situated behind the occipital fissure. It is the hindmost part of the cerebrum and constitutes mainly the visual area of the cerebral cortex (cf. Figure 12.6). The primary visual area receives sensory input via the thalamus. Adjacent to the primary visual area is the visual association area. In this lobe the visual motor area is also found. Deviations in this lobe affect visual perception as well as reading.

12.3.4.5 The limbic lobes

These lobes lie deeply hidden in the interior of the brain, but are part of the cortex. Formerly they were known as the olfactory or nose brain (rhinencephalon), because they include the olfactory centre. It is part of what is known as the old brain (allocortex), in contrast to the rest of the cortex, which is called the new brain (neocortex). (The old brain further consists of other subcortical areas of the brain.) The limbic lobe comprises a number of deeply hidden cortical areas. The so-called limbic system is formed by these cortical areas.

The limbic system links up with parts of the basal ganglia, the hypothalamus and the thalamus. The limbic system, together with the above-mentioned subcortical parts, deals with various important psychological functions such as control of excessive activity (restlessness or hyperactivity) and aggression, the emotional life in general (Noback et al. 1991: 357) and the human memory.

12.3.5 The spinal nerves

The spinal cord basically forms a nerve "junction" between the higher centres in the cerebrum and brain stem on the one hand and the rest of the body on the other. Capacity for movement is a basic attribute of life. Hence the existence of descending pathways (*efferent*) leading from the brain to the rest of the body, and ascending pathways (*afferent*) proceeding in the opposite direction, the latter providing feedback to the spinal cord and the rest of the central nervous system.

The neurons in the spinal cord form a nerve centre of their own on a lower level and directly control a number of reflex actions. At times the neurons in the spinal cord perform an important function, namely the provisional or intermediary processing of impulses to or from the central nervous system. Incoming and outgoing impulses are thus regulated, adjusted, muted, reinforced, rerouted, etc. on various levels as, for instance, in the grey matter of the spinal cord.

A horizontal cross-section of the spinal cord will reveal grey matter in the shape of a butterfly with two "horns" at both its anterior and posterior. The spinal nerves leave the spinal cord through these horns on their way to the different

parts of the body. (Note: the “nerves” are formed by the axons of neurons.)

The nerves proceeding to other parts of the body leave the front (ventral) horns and are known as motor nerves, through which “messages” are sent from the brain to the muscles. Figure 12.7 shows a branch or ramus which serves the front portion of the body (the anterior primary ramus) and another which serves the back portion (i.e. the posterior) of the body (the posterior primary ramus).

From this figure you will further note that certain nerves enter the spinal cord through the back (dorsal) horn (via the dorsal root). These are known as sensory nerves which carry “messages” from the kinaesthetic, proprioceptive and interoceptive senses in the skin, muscles, joints and intestines, to the brain.

Figure 12.7 also shows that the ventral and dorsal roots initially merge to form one nerve root and then divide immediately outside the spinal cord into dorsal and ventral nerve rami (plural of ramus), the latter possessing both motor and sensory nerves. The nerves of the autonomic nervous system also merge with the body nerves (somatic nerves) and run with them for a short distance, after which they separate to form their own nervous system which then runs parallel with the spinal column.

Figure 12.7 shows the right half only. The entire system is repeated in the left section. Note too that each of the 31 pairs of spinal nerves leaves the spinal column on either side of its segment, while the spinal cord lies safely shielded within the vertebrae and runs from the top (head and neck) downwards to the upper lumbar area of the spine. The spinal cord is protected not only by the vertebrae and their ligaments but also by the membranes surrounding and covering the cord, namely the meninges, and by a cushion of cerebrospinal fluid. There are three layers of meninges: the outer thick, fibrous *dura mater*; the delicate *arachnoid*, which lines the *dura mater*; and the thin *pia mater*, which is closely wrapped round the spinal cord. The *pia mater* and the *arachnoid* form the boundaries of the *subarachnoid space* which is filled with cerebrospinal fluid (Reid 1996: 17).

The motor impulses thus proceed along a

descending efferent pathway from the CNS via the spinal cord to the muscles. From the cerebral cortex two neurons lead to the muscles. The motor neurons which transmit the impulses from the brain to the spinal cord are jointly known as the *upper motor neuron*. Those proceeding from the spinal cord and carrying the impulses further along to the muscles are jointly known as the *lower motor neuron*. Hence the latter are neurons which originate in the ventral horn of the spinal cord. The axons proceeding from these neurons to a muscle are known as the *final common motor pathway*, so named because this constitutes the only way along which a motor impulse can reach the muscles – irrespective of whether the impulse originates in the brain, the cerebellum or the reticular nuclei in the brain stem. The impulses from these structures must therefore be conducted by means of the final common motor pathway of the lower motor neuron.

Are you aware of an exceptionally brilliant person who suffers from upper motor neuron disease – he is in a wheelchair and unable to speak (he is also mentioned in the chapter on augmentative communication) – who is currently filling the position that was previously held by Isaac Newton?

Professor Stephan Hawking suffers from upper motor neuron disease which is a debilitating disease because it affects the motor system as a whole. Note that his intellectual abilities are not affected, otherwise he would not be able to fill his position at the Cambridge University.

The motor pathways of the spinal nerves are formed by axons of neurons situated in the posterior and central parts of the spinal cord. Some of them form thicker fibres which constitute the *alpha system* and lead to muscles which control movement. Other, thinner fibres, lead to the muscle spindles and form the *gamma system*, which is responsible for muscle tone and posture.

Afferent (sensory) nerves entering the spinal cord through the posterior roots can now make connection with motor cells at the same level (i.e.

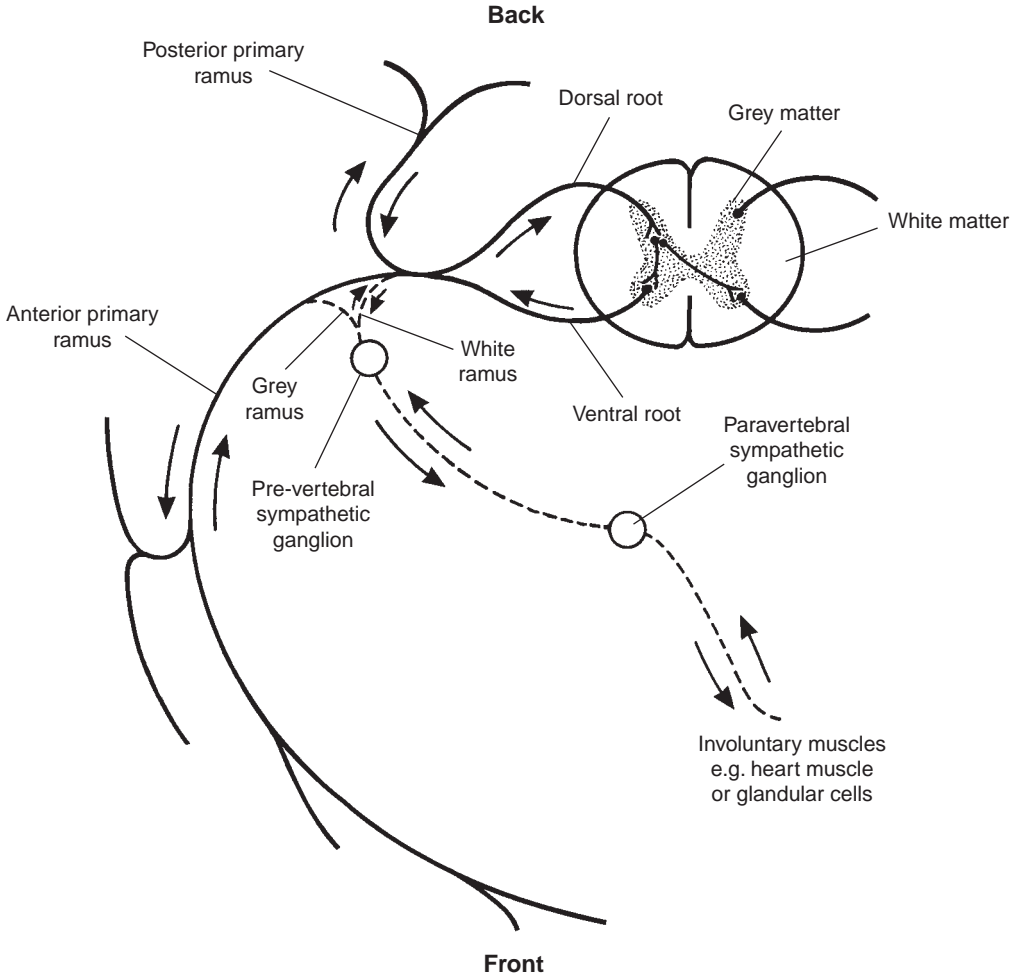


Figure 12.7 Spinal nerve. The sketch shows a segment of the spinal cord with the nerve and its ramifications as it emerges from one side of the segment and divides into somatic and autonomic nerves (the arrows indicate the direction in which impulses are conducted).

Source: Kapp 1994: 224

in the same segment) as in the simplest form of reflex; or they can make connection with connecting neurons (interneurons) which conduct the impulses further to the motor neurons in the anterior horns of the spinal cord in the same segment, or at a higher or lower level. Alternatively, they can first go up or down in the spinal cord and then make connection with other neurons. The connecting neurons with which they form synapses can take the impulse right up the spinal cord into the brain stem (where there are important

reflex centres) or up into the thalamus. If they go up into the brain stem they can make connection there with the cells of the reticular formation of the brain stem. (The functioning and importance of the reticular formation will be discussed next.)

The nerves do not all follow a simple path or pattern. There is, in fact, an intricate variety of possibilities. Some nerve tracts go to the cerebellum, which needs the sensory information because it plays an important part in the control of movement.

12.4 THE ROLE OF THE RETICULAR SYSTEM

The reticular formation in the medulla oblongata and brain stem (medulla, pons and midbrain) is a large complex set of nerve cells and nerve fibres forming the central sections of these structures and continuing into the thalamus. These are mainly scattered nerve cells, although they also form smaller nerve groups, but without constituting definite nerve centres. In the thalamus the reticular formation is present in specific groups of nuclei. Generally speaking, however, the function of the reticular formation may be described as relatively diffuse.

The reticular system extends further into the spinal cord and comprises more than just the reticular formation of the brain stem and thalamus. In the spinal cord it exists as the reticular nerve tracts, but there are also other scattered spinal nerve cells of the reticular formation, so that almost half the grey matter of the spinal cord consists of reticular cells. In the cortical direction the reticular formation has projections to the cerebral cortex itself, and to the basal ganglia. It also has projections to the cerebellum. Further, the reticular formation receives its incoming impulses from virtually the whole central nervous system (Noback et al. 1991: 351). All these connections contribute to the fact that the reticular system acts as the most important linking system between the widely scattered nerve centres of the central nervous system.

The reticular formation is regarded as one of the oldest parts of the central nervous system. It is a primitive integration centre. The central position it occupies in the nervous system and the impressive number of connections it has with other parts of the nervous system, afford the reticular formation a virtually unlimited ability to influence the rest of the nervous system. The afferent and efferent axons of the cells of the reticular formation run up and down the neuraxis, forming numerous branches. The cells have particularly large dendritic systems lying across the neuraxis. This arrangement of the cells and their processes enables them to make a very large number of connections with one another and with the axons of cells situated elsewhere in the central nervous system.

The main function of the reticular system, as regards the sensory and motor processes in the central nervous system, is to regulate the input and output of nerve impulses. The name “reticular system” indicates this. (To illustrate this, one may refer to the reticular system as, for example, a municipality, which is concerned with the distribution of water and electricity. It regulates the flow of water or power to the points where they are required.)

The reticular system fills an important function in habituation to constantly repeated stimuli. This is necessary because a person cannot possibly attend to all the stimuli impinging upon him. Distracting sounds, noises, etc., which would adversely affect him are therefore subdued and checked by the reticular formation.

The reticular formation also has a role in the activation of attention (Noback et al. 1991: 351). One of the functions it exercises (through the non-specific projections to the cortex) is the regulation of the state of arousal of the cortex. When the cortex is stimulated by impulses from the reticular formation, it is brought to a state of readiness to receive the sensory stimuli along the specific projection tracts. This action of the reticular system is termed the reticular activation response or the arousal response. The reticular formation is therefore also referred to as the reticular activation system (RAS).

The role of the reticular formation in attention and consciousness explains why the reticular formation is so exceptionally sensitive to anaesthetics, being one of the first centres of the central nervous system to be affected by them. It is also very sensitive to disturbances by epileptic discharges in the centrencephalic area (the diencephalon or brain stem) so that consciousness is immediately dulled or disturbed by these discharges. In this way the reticular arousal response is suspended.

ACTIVITY

Did you know that because the RAS is a very primitive system it accepts everything it hears as a fact, it cannot distinguish between right and wrong, nor can it interpret on a judgemental level? In your opinion what will the effect be if a learner is repeatedly told

that he is unable to master certain skills?

If the RAS hears the information repeatedly, it will accept it as the truth (because it cannot distinguish between right and wrong) and act accordingly. For instance, if a learner is convinced that he cannot read, he will be unable to read. This is one of the reasons why labelling is totally unacceptable and can in fact be described as emotional abuse in some cases.

12.5 THE VISUAL PATHWAYS

Figure 12.8 gives a clear indication of the pathway that a visual stimulus (light waves) follows after it has been converted (transduced) by the retina of the eye into a visual impulse. Note that the impulse is conducted from the right visual half of the retina of each eye to the right side of the brain. The impulses from the left sides of both retinas are in turn conducted to the left side of the brain – in both cases via the optic chiasma to the occipital lobes.

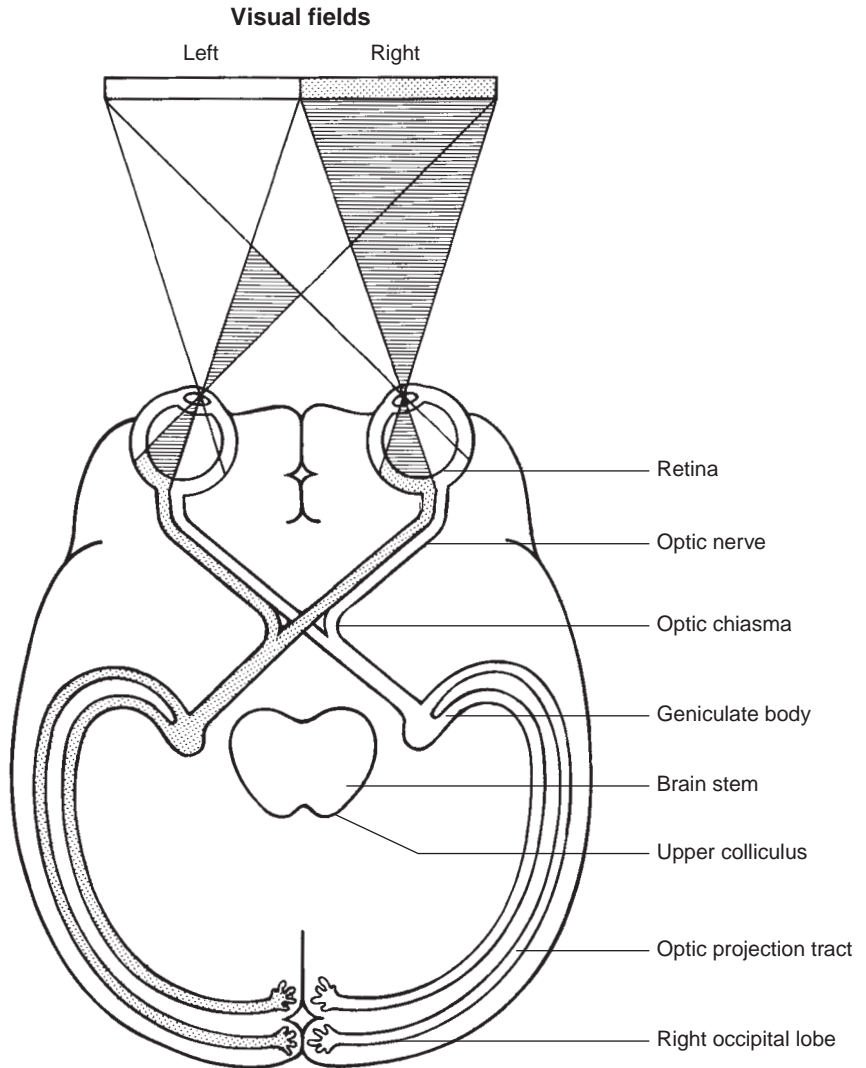


Figure 12.8 A diagrammatic representation of the pathways of the optic nerves

Source: Kapp 1994: 227

The sketch shows that only those impulses which are conducted from the retinal halves abutting the nose cross to the opposite side of the brain. The optic nerve therefore forms the pathway along which the optic impulses are conducted from the retinas of the eyes to the occipital lobes where they are processed in the primary visual area into percepts, and meaning is ascribed to them in conjunction with the secondary and tertiary visual areas. On its way to the occipital lobes the pathway runs via the optic chiasma (where crossing occurs as described above) to the lateral parts of the thalamus. The thalamus in turn is responsible for relaying the impulse to the specific projection area of the cortex which is associated with vision, namely the occipital lobes.

There is another lesser pathway involving the upper two colliculi of the midbrain. This pathway conducts certain impulses from the retina to the colliculi before proceeding to the thalamus and on to the occipital lobes. This pathway deals with reflex movements of the eye such as blinking, dilation or contraction of the pupils and accom-

modation of the lens. (See Figure 14.1 for a drawing of the eye.)

12.6 THE AUDITORY PATHWAYS

Figure 12.9 gives a simplified representation of the auditory or aural nerve pathways. The auditory pathways are without doubt among the most complex in the nervous system.

The process of hearing begins in the ear, where auditory stimuli are caught up by the outer ear and conducted to the inner ear by way of the hammer, stirrup and anvil of the middle ear. In the inner ear the stimuli (in the form of sound waves) are converted (transduced) into auditory impulses which are conducted along the auditory nerve to the primary auditory area of the temporal lobe. This area is sometimes called Heschl's gyrus.

The complex part of the auditory pathway is situated between these two points (ear and temporal lobe). To make it somewhat easier to follow, only the pathway which runs from the right ear will be described. The auditory impulses are con-

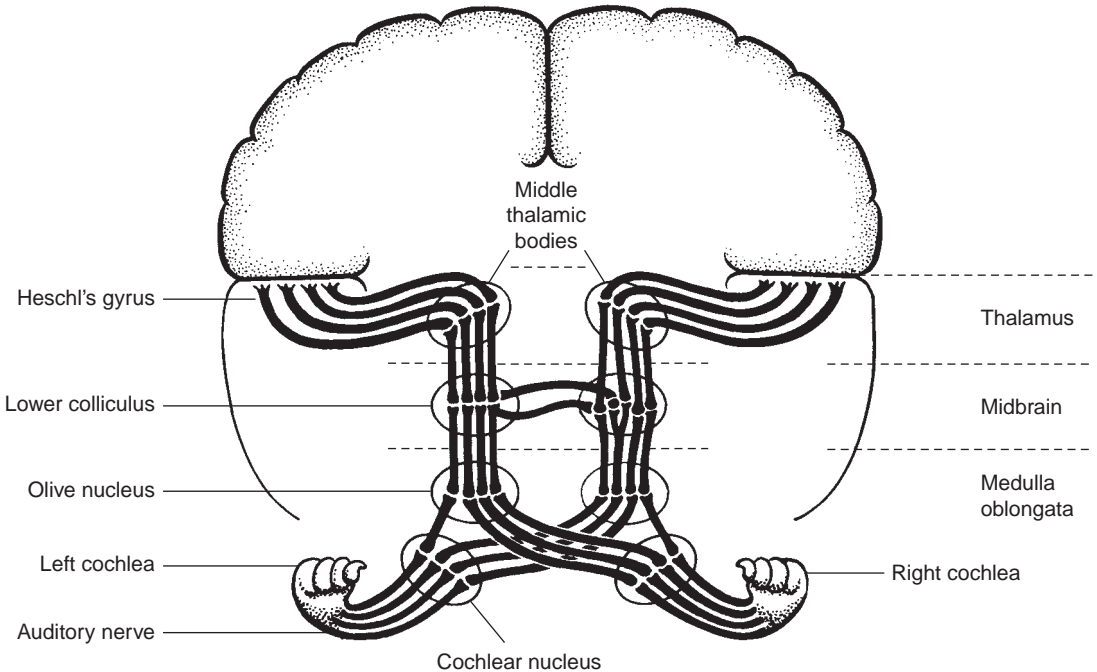


Figure 12.9 A simplified diagram of the pathways of the auditory nerves

Source: Kapp 1994: 229

ducted along the cochlear nucleus where there is a partial crossing of pathways. A few of the pathways from the right ear lead to the right temporal lobe, but the majority cross to the left temporal lobe.

From the cochlear nucleus, the pathways lead first to the medulla oblongata (specifically the olivary nucleus). As can be seen from Figure 12.9, the auditory pathways from both ears cross here – the majority from the opposite (contralateral) and a smaller number from the same side (ipsilateral) of the head. All the pathways then move to the midbrain (specifically to the lower pair of colliculi) and from there to the medial bodies of the thalamus.

The thalamus is known as the point from which impulses are projected to specific areas of the cortex. The same happens to auditory impulses – they are relayed from the thalamus to the specific auditory projection area of the function of hearing, namely Heschl's gyrus in the temporal lobe.

What was said about the right pathways naturally also applies to the pathways running from the left ear. However, an interesting and extremely important discovery has been made regarding the difference in function between the left and right temporal lobes. It has been found that the left temporal lobe (in other words, largely the right ear), is language dominant and therefore sensitive to receiving and processing language sounds. Conversely, the right temporal lobe (and the left ear) is more sensitive to music, especially melody and rhythm, and the environmental sounds (in other words, all sounds not related to language).

12.7 GENERAL CAUSES OF BRAIN DAMAGE

Brain damage or injury is often the cause of impairments. This includes cerebral palsy, epilepsy, and intellectual, visual and hearing impairments. The damage, mal-development or injury of parts of the brain may lead to obvious signs of impairment. The symptoms may, however, also be less evident as the damage to the brain could be microscopic.

12.7.1 Basic causes of brain damage

There are only a few ways in which brain cells

(neurons) can be injured or damaged. These may be called the basic causes of brain damage.

12.7.1.1 Tissue damage

This refers to the destruction of brain tissue through physical force. Obviously fractures, bruises and other injuries can destroy both the grey and the white matter of the brain. If, in addition, the blood vessels are torn, the haemorrhage that accompanies such injuries aggravates the damage. The brain attempts to remedy this by producing connective tissue, but it cannot restore the nerve tissue, and adhesions (lesion forming) may cause further damage to the brain cells and may even negatively affect the functioning of adjacent brain areas.

12.7.1.2 Anoxia

Anoxia (i.e. lack of oxygen) is certainly the greatest single factor in the destruction of brain cells. If the oxygen supply to the brain cells is interrupted for even a few minutes, changes set in and necrosis (death of cells) takes place, which can never be remedied. With lack of oxygen it is the brain cells that die first long before other organs or body systems are affected.

One should remember that there is a difference between suffocation/asphyxiation and anoxia. Suffocation and asphyxiation can lead to anoxia (shortage of oxygen) because insufficient or no air is inhaled.

Anoxia may have various causes. Asphyxiation and suffocation are, of course, only two such causes. They may even be due to defects in the lungs or breathing. Poisons like carbon monoxide destroy the capacity of the blood to absorb oxygen and to carry it to the body cells. The blood may be deficient in haemoglobin, which is responsible for the assimilation of oxygen, as well as in red blood cells which contain the haemoglobin. All these facts eventually produce anoxia. The process of birth is especially prone to accidents likely to cut off the child's oxygen supply and thus cause anoxia.

12.7.1.3 Ischaemia

Ischaemia is a local deficiency of blood and forms one of the main causes of local lesions to the

brain. Local ischaemia first causes local anoxia and it is this that causes the damage. If the flow of blood to a part of the brain is impeded, that part cannot be supplied with oxygen. The consequence is brain damage as a result of the brain cells dying.

12.7.1.4 Haemorrhage

Haemorrhage can be a secondary result of anoxia, which, by damaging the walls of the blood vessels, may cause seepage of blood. In the young child it is the traumatic damage to blood vessels that causes haemorrhage. Characteristic is the subdural haematoma (blood clot) due to haemorrhage between the dura mater and arachnoid meninges.

Whenever there is haemorrhaging in the brain, oedema and increased intracranial pressure occur, and the brain cells at the centre of the haemorrhaging are smothered. In addition, haemorrhage and blood clots may result in the formation of cysts.

Children are sometimes born with a congenital weakness of the blood vessels. A local weakening of the walls of a blood vessel could, for example, cause it to bulge. This is known as an aneurism. A blood vessel rupture could easily occur there.

12.7.1.5 Agenesis

Agenesis is not really a type of damage but refers to imperfect development and as such results in abnormalities. It could be the result of genetic causes or of an early destructive process.

12.7.1.6 Dysplasia

Dysplasia refers to incorrect or defective development of tissue. It causes uneven development, the presence of brain cells in places where they do not belong and the presence of other types of tissue in places in the brain where that type of cell does not belong (Batshaw 1997: 795).

12.7.1.7 Neoplasms

A neoplasm or tumour refers to the growth of new tissue that grows in places where it does not belong, such as in cancerous growths (Brett 1997: 556). Not all neoplasms are malignant, but in the brain they are likely to cause damage to adjacent brain cells or brain structures due to the pressure they exert.

12.8 CONCLUSION

This chapter provides a brief overview of the human nervous system. A human being without a brain cannot exist, but a human being with a brain is so much more than just a brain – the end result is a human being that can, among other things, interact, love and learn.

Questions

1. Describe the functions of the hypothalamus and hypophysis.
2. Describe the main function of the thalamus and compare the thalamus to a common metaphor.
3. Which types of activity will be affected by damage to the cerebellum?

Bibliography

- Batshaw, M.L. (Ed.). 1997. *Children with disabilities*, 4th ed. Baltimore: Paul H. Brookes.
- Brett, E.M. (Ed.). 1997. *Paediatric neurology*, 3rd ed. New York: Churchill Livingstone.
- Christopher Reeve Paralysis Foundation. Available at: <http://www.apacure.com/> (accessed on 1 May 2003).
- Kapp, J.A. (Ed.). 1994. *Children with problems: an orthopedagogical perspective*. Pretoria: Van Schaik.
- Noback, C.R., Strominger, N.L. & Demarest, R.J. 1991. *The human nervous system: introduction and review*, 4th ed. Philadelphia: Lea & Febiger.
- Reid, C. 1996. *A primer of human neuroanatomy*. Pretoria: Van Schaik.

PHYSICAL IMPAIRMENT

13^A

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Revised by **DEIRDRE KRÜGER**

Learning outcomes

After reading this chapter you should be able to

- ▶ distinguish between physical impairments that are neurologically related and those that relate to the skeleton and muscles
- ▶ understand the various forms of spina bifida
- ▶ know the problems that are associated with spina bifida and address related barriers to learning
- ▶ identify particular problems connected with traumatic paraplegia and quadriplegia
- ▶ know what traumatic brain injury entails and educate learners to deal with it
- ▶ understand poliomyelitis as an acute illness which results in physical impairment
- ▶ identify the initial signs of muscular dystrophy
- ▶ display a basic knowledge of multiple sclerosis and Friedreich's ataxia
- ▶ accommodate the needs and problems arising from physical impairment by rendering support
- ▶ venture collaboration.

Key terms

physical impairments that are neurologically related
◆ spina bifida ◆ traumatic paraplegia and quadriplegia ◆ traumatic brain injury ◆ post-poliomyelitis ◆ muscular dystrophy ◆ multiple sclerosis ◆ Friedreich's ataxia ◆ needs and problems arising from physical impairment ◆ psychosocial needs ◆ mobility ◆ loss of sensation and pressure sores ◆ incontinence ◆ support to learners with physical impairment ◆ collaboration

13A.1 INTRODUCTION

You will notice that Chapter 13 is divided into five subchapters, ranging from 13A to 13E. All five

subchapters deal with physical impairment, but owing to the extent of physical impairment it is best to deal with it in separate subchapters. Physical impairment is divided into two broad sections. The first section deals with physical impairments that are neurologically related. Here you will find impairments such as epilepsy and spina bifida. The second section deals with physical impairments that relate to the skeleton and muscles. Burn lesions and amputations are, among others, included in this section. The last section deals with autism and other pervasive developmental disorders.

According to Krüger (2002: 1) an overview of learners with physical impairment would include physical impairment as a result of the following:

- **Neurological problems**, e.g. epilepsy, cerebral palsy, spina bifida, muscular dystrophy
- **Skeletal and muscular impairment**, e.g. amputations, osteogenesis imperfecta, burn lesions

You can thus expect to find the following in the various subchapters of Chapter 13:

Chapter 13A: physical impairments that are neurologically related

Chapter 13B: separate discussion on epilepsy as a physical impairment that is neurologically related

Chapter 13C: separate discussion on cerebral palsy as a physical impairment that is neurologically related

Chapter 13D: physical impairments that relate to the skeleton and muscles

Chapter 13E: developmental disorders that are bioneurological in nature

Chronically ill learners, i.e. those with health impairments, are not included in these subchapters on physical impairment. Physical impairment affects skeletal, muscular and/or neurological systems whereas health impairments are diseases, infections or conditions that affect the life-maintaining systems of the body (Culatta et al. 2003: 210).

Although these chapters on physical impairment rely heavily on medical terms, the ultimate aim is to empower teachers to comprehend, identify and accommodate potential barriers to learning (that may be caused by the physical impairment itself or by the environment) in order to realise the optimal learning potential of each and every learner. Donald et al. (2002: 23) explain that inclusive education “must ensure that the full variety of educational needs are optimally accommodated and included in a single education system”. We are aware of the huge challenge that teachers are confronted with, and Ferguson and Ralph (1996: 51) maintain that “it seems foolhardy to believe that a single teacher could possess *all* the skills to create rich and effective learning opportunities for all children regardless of their family, socioeconomic, cultural, linguistic [sic], ability, or

learning differences”. Nevertheless we believe that teachers are eager to extend their repertoire of skills as much as possible.

Discuss the advantages that a very basic knowledge about medical conditions might hold for a teacher.

A basic knowledge about medical conditions provides a better understanding of the impairment, thus changing negative attitudes and stereotyping of differences which are considered as barriers to learning. Once empowered with the knowledge, the next step of accommodation and support is much easier (according to Henning & Mitchell (2002: 27–28)) and also includes the sensitisation of other learners to diversity. Teachers are able to explain the physical impairment to other learners so that they can appreciate the “dos and don’ts” of the impairment.

Furthermore, a teacher may be more receptive to early warning signs instead of offending a learner by misinterpreting behaviour. For example, when a teacher notices that a learner exhibits a “drunken gait” (falling and stumbling), he will not automatically assume that the learner is showing off or simply clumsy. The possibility of muscular dystrophy will also come to mind.

ACTIVITY

13A.2 PHYSICAL IMPAIRMENT

Physical impairment may occur in various degrees of severity from barely perceptible to profound. It may be congenital (originating prior to birth) or acquired through illness or an accident. It may also be the result of a hereditary syndrome, or damage caused to the foetus before birth through disease or medication taken by the mother.

General characteristics of learners who are physically impaired are that they experience problems in the area of mobility and physical vitality. They may also experience problems with regard to their self-concept which are ascribed to the negative reactions that their bodies evoke from other people due to the conspicuousness of their

impairments. They may be intensely affected by their “being different” from others. Affective and social problems may also be experienced as a result of their inability to control their bodies as they would wish to.

In this chapter a few of the more common physical impairments resulting from neurologically related conditions (excluding epilepsy and cerebral palsy) will be selected and discussed briefly. However there are many other physical impairments of sporadic incidence that will not be mentioned here.

13A.2.1 Neurologically related physical impairments

Neurologically related physical impairments are caused by damage to the nervous system – especially the lower motor neuron (cf. Chapter 12). With some of the neurologically related physical impairments, there is an inability to voluntarily control muscular movements.

13A.2.1.1 Spina bifida

Spina bifida, also called spinal fissure, is a multifactorial genetic abnormality. It is one of the most common abnormalities with which a baby may be born. Spina bifida is a congenital deviation of the neural tube – the spinal cord with the spinal column which normally surrounds and protects it (Culatta et al. 2003: 216). Spina bifida is a neurological abnormality which may permanently affect many other systems of the body. With spina bifi-

da, one or more of the vertebrae of the vertebral column is not completely formed. It is usually the posterior process (back part) which is lacking. Literally, spina bifida means “vertebra in two parts”.

At the opening the membrane may bulge to form a sac containing cerebrospinal fluid and part of the spinal cord. The sac is usually not covered with skin. The degree of severity in spina bifida varies from very mild to irreconcilable with life. The opening may appear at any place on the spinal column – from the head to the coccyx – but it usually occurs in the lower part of the spinal column. The consequences of spina bifida depend on the place in the spinal column at which the opening appears and the organs that are affected. Spina bifida manifests itself in one of three forms, namely spina bifida meningocele, spina bifida myelomeningocele and spina bifida occulta (Batshaw 1997: 529–549; Brett 1997: 477–490, 523–526, 889).

(a) Spina bifida meningocele

Spina bifida meningocele is a less common form. The sac which forms consists only of cerebrospinal fluid and the membranes which cover the spinal cord. (It does not contain part of the spinal cord.)

(b) Spina bifida myelomeningocele

Spina bifida myelomeningocele occurs more often and is of a serious nature. In this case the sac also contains part of the spinal cord but the membrane

You are informed by the school principal that a learner with spina bifida myelomeningocele will join your class shortly. The principal requests you to determine beforehand whether you will be able to accommodate her and to report any potential barrier to learning that may hamper her scholastic progress so that attention can be paid to it before she arrives. How will you react to it?

Perhaps you will feel out of your depth upon hearing the news from your principal, particularly if you are not familiar with the medical term. First of all, you will have to determine what this condition entails. You will find a description of spina bifida myelomeningocele in section 13A.2.1.1(b). But that is not enough. Now you must acquaint yourself with the particular needs that arise from this condition. You will also find the problems that are associated with spina bifida on page 263. After you have determined these, you will have to evaluate your physical environment, teaching methodology, other learners and yourself to identify any possible barriers to learning that the new learner may experience in your class and in the school. What do all these aspects entail? Think about it, because we will return later on in the chapter to this question.

surrounding the sac may be complete or it may be broken or perforated. In this form of spina bifida, the spinal cord is vulnerable to injury, desiccation and infection.

(c) Spina bifida occulta

Spina bifida occulta appears in 5 to 25 per cent of the population. It affects twice as many girls as

boys. No bulge occurs at the opening in the spinal column. Strong membranes usually develop in this area. The opening is only revealed by a dimple or a tuft of hair in the area on the back – usually in the area of the coccyx. Such persons are usually symptom free. Sometimes there is a measure of urinary incontinence and some persons develop back problems years later.

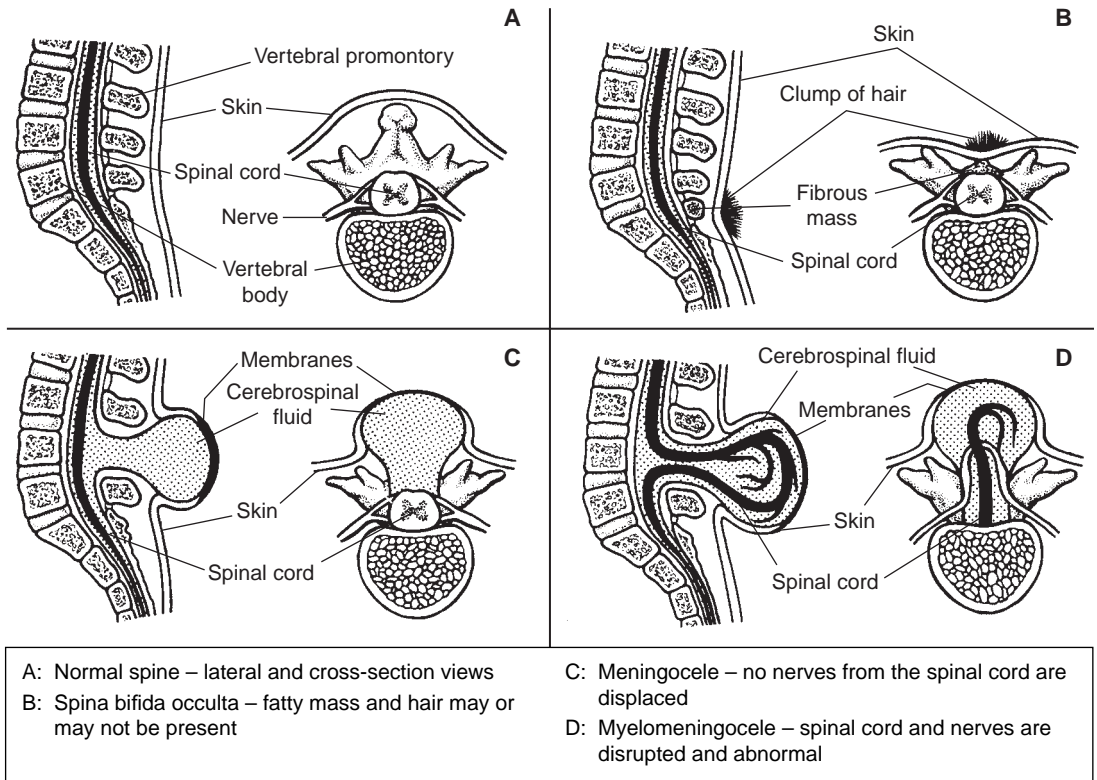


Figure 13A.1 Vertebral column in spina bifida

Source: Kapp 1994: 422

ACTIVITY

An adolescent girl approaches you because a close relationship has been established between the two of you. She entrusts you with her most personal secrets. She suffers from spina bifida occulta, although it is not conspicuous, but she has already told you about the hair – like a “ponytail” – that is growing on her lower back. You know for instance that is why she always wears a T-shirt with her swimming costume. Today she asks your advice because she considers removing the hair on her back in some or other way, because she has become increasingly self-conscious about it. How will you advise her?

You will advise her that she must not remove the hair. Some instances of removing the hair such as plucking it out can have far-reaching consequences. The hair forms part of the abnormalities of the surrounding area of the vertebrae (which is close to the spinal cord) and thus cannot be treated as ordinary hair that can be removed.

The opening in the spinal column and the sac which develops can usually be surgically corrected shortly after birth, although foetal surgery is also possible. In spite of extensive medical treatment, there is little hope for improvement. Deterioration is merely prevented. These children may experience serious neurological problems which may permanently affect other body systems. The symptoms of spina bifida vary according to the position of the opening in the spinal column, the degree of bulging which occurs, and the neurological damage. The following problems are common:

- **Limited mobility** occurs as a result of motor loss and orthopaedic deviations. The extent of the limitation depends on the location of the defect in the spinal cord. The higher the level of the defect, the greater the muscle weakness will be. (Sensory and motor function below that point are affected.) Flaccid paralysis, especially of the lower limbs, occurs. Curvature of the spine, dislocation of the hips and contractures (irreversible shortening of muscle fibres that causes decreased joint mobility) occur at the hips, knees and ankles. Surgery is often necessary, and usually physiotherapy and occupational therapy.
- **Sensory loss** occurs, especially in the feet, the buttocks and between the legs around the anus and genitalia. The loss of sensation is more marked on the back of the legs than on the front. (The loss of motor and sensory function is not always symmetrical, as one side may have better motor function or sensation than the other.) The loss may be for superficial skin sensation and for deep pressure on the area. Pressure sores may develop and such children may suffer from burns, for example from bath water which is too hot and from the sun, because they do not feel the warning pain.
- **Incontinence** of urine and stools almost always occurs. The urine drips at short intervals day and night. Due to the loss of sensation such children do not realise that they are wet. Urinary infections often occur. In younger children the incontinence of stools causes problems only due to their inability to control it. In adolescents constipation often occurs and to such a degree that an obstruction may occur.
- **Hydrocephalus** (water on the brain) occurs in the majority of children with myelomeningocele. A small pump, called a shunt, is used in the treatment of hydrocephalus. A small tube with a one-way valve is implanted in the opening in the brain where the fluid collects. The tube runs under the scalp, under the skin alongside the neck and into the abdominal cavity into which the excess fluid drains and is absorbed by the body. The tube must be replaced when it blocks, if inflammation develops or if it moves out of position. A hard blow to the head may also cause problems. Vomiting, irritability and headaches are indications of a faulty pump.
- **Intellectual impairment** occurs in approximately 10 per cent of children with spina bifida who do not have accompanying hydrocephalus. In children with hydrocephalus the approximately 25 per cent who are intellectually impaired usually have had a complicating brain infection as a result of an infected shunt or prenatal hydrocephalus. Although the majority of learners with spina bifida have normal intelligence, significant impairments regarding their perceptual skills, attention, memory and organisational abilities may be evident, resulting in learning problems.
- **Epileptic seizures** tend to develop in approximately 15 per cent of children with spina bifida myelomeningocele. This is usually successfully controlled with antiepileptic medication (cf. Chapter 13B). If new seizures develop unexpectedly, the possibility of a blocked shunt or a shunt infection should be investigated.
- **Visual impairments** in the form of strabismus (squint eyes) may be present.

Learners with spina bifida can be included in general classrooms. Apart from their learning programme, special attention must be paid to their social development because their self-image may be poor. Brett (1997: 490–491) summarises the problems of a teenager with spina bifida as being “obese, with deformed legs and trunk, totally

dependent and perhaps smelly” and emphasises the importance of their social adjustment and development, in particular “during their second decade”.

We are now returning to the first activity of this chapter where the principal informed you about the learner with spina bifida myelomeningocele joining your class. By now you are familiar with the condition as well as the needs due to associated problems that the learner may exhibit. Now we are briefly going to look at the potential barriers to learning that may hamper her scholastic progress. (You will find more on learning support at the end of this chapter.) With all the information that you have gathered so far, which potential barriers come to mind?

If the following are not accommodated, they can become barriers to learning:

- **Limited mobility** – inaccessible buildings, e.g. the classroom, cloakroom and school hall
- **Appearance** – negative attitudes of teacher and learners as well inappropriate communication, perhaps a total lack of communication, from the teacher’s side to inform the learners about their new classmate’s condition
- **Learning problems** – stereotyping of differences if the assumption is made that she is intellectually impaired or intellectually dull

13A.2.1.2 Traumatic paraplegia and quadriplegia

Paraplegia is the inability to move and an absence of sensation in the lower limbs, while quadriplegia involves all four limbs. Injuries or damage to the spinal column suppresses the transmission of impulses between the brain and the muscles. The suppression does not stop the brain from planning the desired movements. The muscles are also ready and in contact with the “energy source” and await the instructions they never

receive (Batshaw 1997: 306). The level at which the injury to the spinal column occurs determines which muscles are affected – only the legs or both the legs and the arms. The bladder and the muscles of the rectum may also be affected. If the damage is high up in the neck, the respiratory muscles may be affected as well (Culatta et al. 2003: 219).

There are various causes for traumatic paraplegia and quadriplegia such as vehicle accidents, falls from heights, sports injuries and shooting accidents.

Traumatic spinal column injuries cause far-reaching changes in the lives of such children. Particular problems connected with traumatic paraplegia and quadriplegia may include the following:

- **Psychological aspects of the child.** The morale of such children is the main problematic aspect. Prior to the accident these children were all active and mobile. Now their personal goals must be lowered. They often show rebelliousness and a lack of motivation to participate in rehabilitation programmes. They often mourn their loss of body function (Kennedy et al. 2003: 41).
- **Pain.** These children frequently experience pain and surgery is often undertaken. Some also experience the so-called “after pain” in the form of painful spasms in a part of the body.
- **Mobility.** Traumatic paraplegia and quadriplegia cause a loss of mobility and these children have to make use of wheelchairs. They require physiotherapy as well as occupational therapy to assist mobility. With the help of therapy they can often walk with callipers and crutches later on. Propulsion in wheelchairs is often easier for them and more elegant. They are usually unmotivated to try to walk and offer little cooperation.
- **Loss of sensation in the affected limbs.** Pressure sores and burns often occur.
- **Incontinence.** This is common. Reflexive emptying of the bladder occurs when it contains a quantity of urine. Often catheters are used for these children. Bladder infections as well as kidney stones often occur.

13A.2.1.3 Traumatic brain injury

Traumatic brain injury is caused by severe trauma to the head that results in lasting physical and cognitive impairments. Closed head injuries comprise brain damage as a result of the brain bouncing against the skull due to rapid acceleration and deceleration in accidents. Open head injuries

are the result of direct external trauma to the brain. Associated problems with traumatic brain injury might include chronic fatigue, pain, epilepsy, memory impairment, paralysis, poor balance as well as emotional problems. Vision, speech and hearing problems may also occur (Culatta et al. 2003: 217).

You are requested to write an article on recovery after brain damage in your school's newsletter. You are aware of at least one Grade 9 learner who has sustained brain damage after a motor vehicle accident. He has recently returned to school. You are also expected to educate the other learners so that they can understand and accommodate people who are recovering from a traumatic brain injury. How will you write your article?

Perhaps your article can look like this:

Accidents happen so fast and, if you have ever been in an accident yourself, you will know that your life can change completely in an instant. Some people escape with a few light scratches, but others' lives are altered irreversibly. Today we talk to learners who have sustained head injuries and walked the long road to recovery, or who are perhaps still walking that road. Although car and motorbike accidents are responsible for a large percentage of head injuries, assaults, contact sport and freak accidents, among others, also play a role. The extent of the recovery depends on the kind of injury. If the brain itself has been injured, the site of the injury determines the problems encountered afterwards. When you realise that the brain needs a period of about two years to recover, you might find it easier to understand why the recovery process takes so long. Even one's personality can change, depending on the site of the injury, but never be too quick to make judgements about personality changes, because the brain's recovery process can also affect behaviour. Aggression, irritability and tantrums are common in people who have suffered a brain injury and are in the process of recovery.

The long path of recovery referred to above can, for instance, involve speech therapy if the speech has been affected, or if the person has to learn to speak all over again. People say it is extremely frustrating when they recognise an object and even know what it is used for, but cannot remember its name. Memory problems over a short or long period are common. If one has to learn to walk again, or has other problems with movement, physiotherapy and occupational therapy are most beneficial. It takes great effort and determination to make a little progress each day. Someone once said that she had to develop from baby to teenager in one year after a brain injury. Everything that had previously been so easy and automatic was suddenly difficult – even putting on mascara. A boy who was trapped under a tractor during a freak accident says that for him it was most difficult to accept that his intellectual ability was no longer the same as before the accident. Remember that not everyone who has a brain injury experiences the same problems, if any. Some people's hearing or eyesight is partially or totally lost in the accident. Others have problems that are relatively similar to cerebral palsy, which has already been discussed. Epilepsy can also occur.

And for those of you who have suffered a brain injury, don't worry unnecessarily about what other people think about you. Be particularly careful not to think for other people. When people are friendly, don't imagine that they just feel sorry for you. Don't think that people are watching for you to make a mistake so that they can see how bad your brain damage is. When people talk softly, never assume that they are discussing you. It is quite natural to feel very self-conscious and afraid of being forgetful or clumsy. But if you can be open about it (naturally it takes time to reach this point), you will be surprised to find that most people admire rather than criticise you.

And yes, you may recall times before the accident when everything was different. You may grieve over what you have lost. This is all part of the recovery process. You may also be angry or wonder why this should happen to you. Apart from the process of physical recovery, these experiences take a high toll psychologically. However, as you begin to make progress from day to day, later even you will look back on yourself with admiration! (Krüger & Groenewald 2004b: 22–23)

13A.2.1.4 *Post-poliomyelitis*

Poliomyelitis is an acute illness which results in physical impairment. It is a neurotropic viral infection which damages the motor cells (the anterior horn cells – see Chapter 12) of the spinal cord and the brain stem. Muscle contraction is impeded and flaccid paralysis of the muscles follows. Where only swelling of the motor cells occurs, recovery follows gradually within a few months. However, where the cells are damaged, there is no recovery.

The muscles are affected in a great variety of ways. Different groups of cells which control different muscles may be affected. It is often the lower limbs and muscles of the trunk which are affected. The paralysis may be symmetrical or asymmetrical. It is a flaccid paralysis accompanied by atrophy (wasting away) of the muscles. Deformity occurs because the affected limb remains small. Curvature of the spine often occurs because the muscles are weak and there are problems with contractures in the affected muscles. There is no loss of sensation in the affected muscles and consequently pain is often experienced. Pressure sores occur less often because the children can feel pressure and abrasions, and complain. The blood supply is, however, impeded and the affected muscles are cold. These children often have to make use of orthopaedic aids such as callipers and wheelchairs for mobility. The intellect and excretory organs remain unaffected.

It was once a major disease affecting learners, but preventive medical treatment in the form of vaccines has made it rare (Culatta et al. 2003: 219).

13A.2.1.5 *Muscular dystrophy*

Muscular dystrophy – a group of hereditary diseases – is a neuromuscular disease causing the progressive weakening of the muscles. More and more of the muscle tissue is replaced by fat and

fibrous cells. It tends to run in families and is usually transferred from mother to son. The cause of muscular dystrophy is unknown although research has recently begun to elucidate the etiologies. It cannot be cured. Duchenne muscular dystrophy, occurring only in boys and usually between the ages of three to six years, is the most common type (Roberts 1995: 396).

The disease progresses slowly and the initial signs may include an awkward swaying walking pattern as well as difficulty when climbing stairs (gross motor signs). Rising from a sitting position is difficult and the learner may hold on to something for assistance. Eventually getting up after a fall is also difficult (Culatta et al. 2003: 217). Deformities of the back – scoliosis in 95 per cent of cases (Roberts 1995: 396) – as well as a pot belly occur. By the age of ten, children may lose ambulation and depend on a wheelchair. Later on they may become bedridden.

13A.2.1.6 *Multiple sclerosis*

Multiple sclerosis is another example of a progressive illness which causes a neurologically related physical disability. It occurs in the late teens and early adulthood. The cause is unknown. Multiple sclerosis is the progressive hardening and damaging of the protective sheath of the nerve fibres. The myelin sheath around the nerve is destroyed. The symptoms of the illness are divergent and the course of the illness is unpredictable. Intelligence is unaffected, but progressive muscle weakness, spasticity, speech disorders and visual disturbances occur.

Why will the speech of a learner with multiple sclerosis also become affected?

The muscles controlling the articulation of sounds weaken progressively.

13A.2.1.7 Friedreich's ataxia

Friedreich's ataxia is another well-known neurologically related physical impairment. It is a genetic illness where there is progressive degeneration of the nerves of the limbs and trunk. There is a hardening of parts of the spinal cord. With the progress of the illness, deviations of the skeleton often also occur – especially the spinal column and the feet. The illness becomes obvious during the first or second decade of the person's life. The child's balance is poor and he often falls, and walks with an unsteady gait. Clumsiness and trembling occur and can be seen in the child's writing. Feeding is a problem and speech becomes increasingly indistinct.

13A.3 NEEDS ARISING FROM PHYSICAL IMPAIRMENT

Physical impairment is very divergent by nature and it is not always possible to generalise. In this chapter only a few of the more general needs and problems will be noted. The needs discussed are not necessarily manifested by all learners with physical impairment.

13A.3.1 Psychosocial needs

Learners with physical impairment often have a poor self-image which results in the formation of a negative self-concept. They experience being different from other people and they feel inferior. Negative thoughts may lead to poor intrinsic motivation, which also affects the learners' scholastic progress.

Learners with physical impairment may also experience that other people consider them different and conspicuous. This causes a distance between these learners and others. Consequently, learners with a physical impairment may experience socialising problems.

13A.3.2 Mobility

Learners with physical impairment generally experience problems with mobility. Access to buildings and particular areas may cause problems. Where no special provision is made, certain buildings and areas remain inaccessible to them.

In order to move they have to use orthopaedic

aids to a great extent. Such aids are often clumsy and a bother to put on and take off. Orthopaedic aids can include, for example, splints to prevent feet from dropping when they are lifted to move forward or leg braces to stabilise joints, as well as specially designed shoes. Because children grow so fast, the aids may become too small and cause pain. The adjustments or making of new aids often takes time and then the learners are left without the aid for that period of time, which implies either immobility or using a wheelchair.

The learners are thus at times or even permanently dependent on wheelchairs for mobility. The wheelchairs also need care and problems with the wheels, such as a flat tyre, often occur. It is also not always possible to move everywhere with a wheelchair. Some buildings have toilet facilities which make no provision for the entry of wheelchairs. Electric wheelchairs require even more space than ordinary ones to move around in.

13A.3.3 Loss of sensation and pressure sores

With some physical impairment there is a loss of sensation, especially with regard to the lower limbs and the parts between the legs. As a result of the loss of sensation, learners may injure their lower limbs. For instance, the learner may drag his foot on the ground while in the wheelchair without feeling it. Poorly fitting callipers or shoes which pinch may cause pressure sores. The pressure sores heal slowly because the learners who require walking aids usually have poor blood circulation. Pressure sores also occur when the learners sit for too long in one position and the blood circulation is impeded in the particular area.

Learners who have no sensation loss may also develop pressure sores. The difference, however, is that they can feel the pressure points and chafing and complain as pressure sores are very painful.

13A.3.4 Incontinence

Some learners who are physically impaired suffer from incontinence, which has serious implications for them. It is often found that the learner has to wear a diaper even though he is already a teen-

ager. This may contribute to the formation of a negative self-concept. Often the learners have no sensation between the legs (in the area of the genitalia) and do not feel it when they are wet. There is also adaptation to smells: the learners cannot smell when they urinate or defecate – they can smell something for a few moments and then they lose the smell – but it is unfortunately not lost for other people. Incontinence has serious psychosocial implications for the learners. Because they may remain wet for long periods without feeling it and without putting on dry clothes, the skin can become irritated. The urine may burn the skin and a rash and sores may develop which are difficult to heal because of the continual leakage of urine which further damages the skin.

13A.3.5 Other implications

As a result of postural problems or impairment of the upper limbs, they may experience writing problems. Some of these learners tire easily. Problems may arise in accommodating learners with their particular orthopaedic aids in a room. Learn-

ers with physical impairment are often absent from school for long periods because of surgery or other medical treatment, which disrupts their learning programme.

13A.4 SUPPORT TO LEARNERS WITH PHYSICAL IMPAIRMENTS

Support to learners with physical impairments varies according to the specific nature of the impairment.

13A.4.1 Psychosocial support

The formation of a positive but realistic self-concept is of great importance to these learners and they need active support. It is necessary to help such a learner to form a realistic image of his own body and its composition so that he will have an understanding of the possibilities of his body and its limitations. The learner should form a realistic image of himself as a person with an impairment, *but* also as a person of worth and one with potential i.e. a person with abilities.

How will you go about establishing someone's value for himself in the class context?

(Bear in mind that inclusive education requires that all the learners should be equally accommodated, which is not always possible, but the process of including the learner/s with physical impairment may not be at the expense of other learners. Therefore, you must strive to work as inclusively as possible.)

The next activity is merely an example of what can be done. It can help to establish someone's value for himself. It will not take up much teaching time, but will need a little preparation on your part.

- Cut a number of sheets of paper in half.
- Take the class register and write each learner's name on a sheet of paper.
- Before starting the lesson or at the end, hand out the papers in class with the following instruction: *Write something positive about the person whose name appears at the top of the paper.* (There will always be clowns in class, or learners who will not cooperate. Just note the culprits' names.)
- Collect the papers (maybe they will only be handed out again in another period).
- Read the positive characteristics, taking note of them, because this will also help you get to know your own learners better.
- If things do not go according to plan, you can do one of three things:
 - those learners who played the fool or would not cooperate should not get their own papers back (but explain why)
 - if the remark on the paper is unacceptable, you can write something positive about that learner yourself
 - you can talk to the learners individually, pointing out their positive characteristics.

It is actually important that learners are not left out when the papers are handed out (except for the clowns). In every class there are usually one or more “invisible” learners (“insignificant” people) apart from those with physical impairment. They simply disappear in a group and no one really notices them. If you overlook them, it will only reinforce their lack of self-esteem. You will know best how to deal with the situation. And even though you may never be aware of it, one positive remark can mean the world to somebody (Krüger & Groenewald 2004a: 11).

These learners should be actively assisted regarding socialisation should the need arise, and special opportunities should be arranged to this end. Correct behaviour towards others sometimes needs to be taught. Role-play is sometimes of great value in this regard. These learners should also be taught consideration for others.

13A.4.2 Improvement of mobility

Mobility should be improved as far as possible as it contributes to the learner’s independence. The learner should, as far as possible, act independently and move on his own. Wheelchairs need room to manoeuvre – this is a factor, especially inside a building. The furniture should accommodate the learner so that the wheelchair fits under the table and the learner is in the correct position to sit and work at the table. The falling of books and writing materials should be limited by, for

example, a frame around the table and the provision of bags on the sides of the table. Care should be taken to see that learners who cannot sit firmly are strapped securely into their wheelchairs. Also read section 13C.6 in Chapter 13C for more information on learners in wheelchairs.

Learners with callipers need room to move because they are often clumsy and bump against doors and walls. The learners often have to be helped to sit or to stand. The learner’s chair may, for instance, have to be held firmly for him. Furniture should be so arranged that it is as easy as possible for the learner to move.

Learners with callipers and back braces often need help with putting them on and taking them off. This takes time. Note should be taken of unequally worn and broken shoes, and should be reported to the parents. The learners walk slowly and often fall, and care should be taken that the floors are not slippery.

How will you educate your learners to treat people in wheelchairs?

First, we can treat them just as we treat anyone else. Because people in wheelchairs are not at the same eye level as others when they walk or stand, people tend to ignore them by looking over their heads. Sometimes we talk too loudly, as if they have a hearing problem. Even worse is when people talk for them in their presence as if they can’t voice their own opinion. So, try to talk in an ordinary way directly to the person, just as you would with anyone else (Krüger & Groenewald 2004b: 11). Offer your assistance. Pick up things that have fallen to the ground. You can even push the wheelchair provided that you know how to do it. The person in the wheelchair will inform you, for example, when to tilt the wheelchair or turn the wheelchair backwards when going down a steep incline with your back in the direction you plan to go, looking backwards occasionally to avoid collisions. Remember that a motorised wheelchair is a necessary support and not a toy (Smith et al. 2001: 285). If you have the physical strength, you can also assist the person to change position from time to time if he is unable to move himself or needs assistance. Be careful not to hurt your back. Did you know that we are constantly changing our positions, even when we are asleep? It is to ensure good blood circulation, otherwise sores, called pressure sores, will occur. In order to prevent pressure sores, people in wheelchairs constantly have to – say every half-hour – change their position.

13A.4.3 Prevention of pressure sores and injuries

Particular attention should be paid to the prevention of pressure sores. Continual attention should be given to the fitting of shoes and orthopaedic aids, and any red pressure points must be reported. Note should especially be taken of shoes and aids which have become too small. Particular attention should also be given to learners who experience sensation loss.

To improve circulation and to lessen pressure, especially for learners who sit most of the time, they should be encouraged to rise every half-hour. Those who can stand should pull themselves up from their seats. Learners in wheelchairs can raise themselves in their wheelchairs by pushing with their arms on the supports. The learners who cannot raise themselves must be helped to do so. Opportunities should be given for learners to change their positions.

Pressure points that are red should be treated preventatively and the areas may be rubbed to improve circulation. Red pressure points should be reported to the parents.

13A.4.4 Care of learners with incontinence

Learners with incontinence need particular attention and guidance and should be taught to remain as dry as possible. These learners should be checked every two hours. It may have to be done at shorter intervals if they pass urine often.

The learners should not have to wear diapers but special underpants/panties that button on the sides and that are provided with extra layers of the same or more absorbent material between the legs. An extra layer of disposable, absorbent material may be placed inside. If they are attractively made, they can contribute to the child's feeling of self-worth.

There are different ways in which learners' bladders may be emptied of excess urine, for example the credo method where external pressure is applied to the bladder or the learners are catheterised every four hours. The learners should be taught from early on to do this themselves. The method to be followed is the one recommended by the learner's urologist or doctor. Some learners

have a stoma from which the urinary tract dispels urine into a bag. The bag also requires special care as it may leak or smell offensively.

Note should also be regularly taken of the perineum (the area between the legs) to ensure that the skin is not red and irritated. The learners are taught to check this themselves with the use of a mirror.

The learners should also learn to pick up the non-verbal communication of others so that they know when their body odours are offensive. The teachers should also, in a kind way, let the learner know that it is time he attended to himself again.

When the learners' urine has a sharp smell they should be referred to a doctor because this could be an indication of infection.

Particular attention should be paid to the hygiene of the learners in order to improve their socialisation. The other learners in the class should also be educated to give particular support to these learners.

13A.4.5 Improving the teaching situation

Read section 13C.7 in Chapter 13C to find out about learning support. Bear in mind that each particular physical impairment and even every learner with that particular impairment may require adjustments to the general support suggested in Chapter 13C.

13A.5 COLLABORATION

It was noted at the beginning of the chapter that one teacher can hardly possess all the skills required for inclusive education. Welch and Brownell (2002: 133) consider collaboration between all the partners in education as a solution to this problem but mention that teachers have to be trained to deal with all the "complexities and procedures of collaboration". Beliefs about ourselves and others can pose barriers to collaboration. If we view ourselves in one particular narrow and specialised role, for example as a secondary school mathematics teacher, we may resist collaboration. We can hold negative views on other teachers and parents which may also interfere with our ability to collaborate. Some-

times we even isolate ourselves of our colleagues, depriving ourselves of opportunities to enrich our teaching skills. We can assess our own collaboration skills e.g. with the school-based support team or the district-based support team, by asking the following questions:

- How do we operate in groups?
- Are we open-minded about other people's perspectives?
- Do we really try to understand other people's concerns and views without being critical?
- Do we actively listen to other people?
- Do we express our ideas in language that is easily understood by our partners-in-teaching?
- Are we able to compromise in problem-solving situations so that everyone can win? (Bondy & Brownell 1997: 113–114)

Schnorr et al (2000: 13) have learned many “lessons” regarding the inclusion of secondary school learners, one of which is that “general and special educators have complementary areas of expertise and that taking advantage of this expertise can assist each teacher in reaching their goals”.

ACTIVITY

How can we maintain learners as the focus of our collaborative efforts? (Sometimes collaboration can serve as an “ego trip” for the person advising others, in which case the learner is not the focus of the collaborative effort anymore.)

To keep learners at the top of the list, all partners must ask themselves how they can help learners to

- be successful in their learning
- become productive and happy people
- develop the knowledge, skills and attitudes of responsible citizens
- achieve the goals they value (Bondy & Brownell 1997: 114).

13A.6 CONCLUSION

Learners with physical impairments have unique needs and problems, which differ according to the particular nature of the physical impairment. These needs and problems must be accommoda-

ted to prevent barriers to learning. Teachers should collaborate in order to provide the optimal learning environment.

Questions

1. One of your learners had a brain tumour that was surgically removed. After the operation his parents complain to you about their child's behaviour. The child is difficult. He is irritated with everybody, moody and aggressive. How will you explain the child's behaviour to the parents?
2. What types of physical impairment can be prevented? How can they be prevented?

Bibliography

- Batshaw, M.L. (Ed.). 1997. *Children with disabilities*, 4th ed. Baltimore: Paul H. Brookes.
- Bondy, E. & Brownell, M.T. 1997. Overcoming barriers to collaboration among partners-in-teaching. *Intervention in School and Clinic* 33(2): 112–115.
- Brett, E.M. (Ed.). 1997. *Paediatric neurology*, 3rd ed. New York: Churchill Livingstone.
- Culatta, R.A., Tompkins, J.R. & Werts, M.G. 2003. *Fundamentals of special education – what every teacher needs to know*, 2nd ed. New Jersey: Merrill Prentice Hall.
- Donald, D., Lazarus S. & Lolwana, P. 2002. *Educational psychology in social context*, 2nd ed. Cape Town: Oxford University Press.
- Ferguson, D.L. & Ralph, G.R. 1996. The changing role of special educators: a development waiting for a trend. *Contemporary Education* 68(1): 49–51.
- Henning, M.B. & Mitchell, L.C. 2002. Preparing for inclusion. *Child Study Journal* 32(1): 19–29.
- Kapp, J.A. (Ed.). 1994. *Children with problems: an orthopedagogical perspective*. Pretoria: Van Schaik.
- Kennedy, P., Duff, J., Evans, M. & Beedie, A. 2003. Coping effectiveness training reduces depression and anxiety following traumatic spinal cord injuries. *British Journal of Clinical Psychology* 42(1): 41–52.
- Krüger, D. & Groenewald, S. 2004a. *A practical guide for educators to accommodate diversities in inclusive education – secondary schools and colleges*. Bapsfontein: OBE Publishers.
- Krüger, D & Groenewald, S. 2004b. *A practical guide for learners to accommodate diversities in inclusive education – secondary schools and colleges*. Bapsfontein: OBE Publishers.
- Krüger, D. 2002. *Problems to learn*. Workshop for Galaxy Presentations. Pretoria: University of South Africa, April.
- Roberts, M.C. (Ed.). 1995. *Handbook of pediatric psychology*, 2nd ed. New York: The Guilford Press.

Schnorr, R.F., Black, J.W. & Davern, L. 2000. Restructuring high schools to include all students: lessons learned. *The High School Magazine* 7(7): 10–15.

Smith, T.E.C., Polloway, E.A., Patton, J.R. & Dowdy, C.A. 2001. *Teaching students with special needs in inclusive settings*, 3rd ed. Boston: Allyn & Bacon.

Welch, M. & Brownell, K. 2002. Are professionals ready for educational partnerships? The evaluation of a technology-enhanced course to prepare educators for collaboration. *Teacher Education and Special Education* 25(2): 133–144.

EPILEPSY

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Learning outcomes

After reading this chapter you should be able to

- ▶▶ define epilepsy
- ▶▶ explain the nature of epilepsy
- ▶▶ discuss the two broad groupings of epilepsy
- ▶▶ know what unclassified epileptic seizures are
- ▶▶ explain a person's susceptibility or inclination to epilepsy
- ▶▶ point out the causes of epilepsy
- ▶▶ identify epilepsy
- ▶▶ indicate how epilepsy affects learning
- ▶▶ provide learning support to learners with epilepsy.

Key terms

epilepsy ♦ epileptic seizures ♦ seizure threshold ♦ electroencephalograms (EEGs) ♦ general seizure ♦ partial seizure ♦ primary and secondary epilepsy ♦ central nervous system ♦ neuron ♦ centrencephalic structures ♦ focal epilepsy ♦ non-convulsive general seizures ♦ absence ♦ petit mal seizure ♦ convulsive general seizures ♦ myoclonic spasms ♦ tonic convulsions ♦ clonic convulsions ♦ tonic-clonic convulsive seizures ♦ status epilepticus ♦ partial seizures with simple symptoms ♦ epileptic aura ♦ partial seizures with complex symptoms ♦ partial seizures that become secondary generalised seizures ♦ seizure pattern ♦ epilepsy and learning ♦ subclinical seizures ♦ medication ♦ epilepsy and learning support

13B.1 EPILEPSY: A DEFINITION

Epilepsy is a sudden disturbance of or change in brain function as a result of unusual electrical activity in the brain cells. Its characteristics include the following:

- It is temporary, i.e. after the disturbance has passed completely, the person functions in the same way as before the seizure occurred.
- A lowering or loss of consciousness usually, but not always, occurs. Disturbances in move-

ment, sensation, behaviour and perception may take place.

- Seizures can occur repeatedly, but the intervals between them may vary from minutes to years (Appleton et al. 1992: 1).

Physical impairments that are neurologically related indicate impairments resulting from the malfunction of some part of the central nervous system.

A seizure is an “attack” of epilepsy. One manifestation of epilepsy is a convulsion, which is characterised by extensive involuntary muscular contractions mostly occurring rhythmically (clonic contractions). In contrast there are some seizures that do not involve convulsions, e.g. the absence (*petit mal*), which will be explained later.

ACTIVITY

Do we say that a person was attacked by epilepsy? Or had an epilepsy attack?

No, we always refer to a seizure, i.e. the person had an epileptic seizure. People suffer from heart attacks, but they have epileptic seizures (Krüger et al. 2002: 3).

13B.2 THE NATURE OF EPILEPSY

According to the definition above, epilepsy is a condition caused by sudden brain dysrhythmia. The neurons or brain cells may be so excessively excited because of various factors such as irritation through brain lesions, high fever, toxins and external stimuli that epileptic seizures may follow. In fact, any living brain may be brought to the point of epileptic seizure, depending on the intensity of the stimulus and the natural resistance of the person’s brain. In some children external stimuli such as a flickering light, for example when driving through a lane of trees with the sun shining from the side, or a poorly functioning television set, may cause a seizure. Physical indispositions such as teething, fever or fatigue, may precipitate seizures in children, as may emotional stress (Batshaw 1997: 555; Brett 1997: 375).

One can discern a continuum (distribution) among people who have epileptic seizures; experts speak of the seizure threshold of the brain. One person’s seizure threshold may be higher than another’s and he will be able to offer greater resistance to circumstances precipitating epileptic seizures. The typical person with epilepsy obviously has a low seizure threshold.

ACTIVITY

Is it possible that any person at any stage of his life may develop epilepsy?

The answer is an unequivocal “yes”.

Bear in mind that the very nature of epilepsy implies a physical condition and it cannot be described without using terminology from the medical field. This does not, however, imply a medical deficit perspective. Teachers will, for instance, not be able to identify epilepsy without a basic knowledge of the phenomenon, nor will they be able to include a learner with epilepsy successfully in their classes if they are unfamiliar with the condition. We agree with Simpson and Garrison (1995: 252) when they promote moral perception in education that boils down to the “capacity to comprehend the unique needs and aspirations of individual persons and the best possibilities of equally unique social contexts”. This chapter aims to highlight the needs of the learner with epilepsy and to broaden the skills of the teacher to accommodate and appreciate the unique abilities of the learner (Oswald et al. 2000: 315).

13B.3 TWO BROAD GROUPINGS OF EPILEPSY

One should not think of “epilepsy” as a single type of illness, but rather as a group of disturbances called “the epilepsies”. The disturbance of brain functions may occur in various anatomical areas of the brain; it is caused by various factors, and if electroencephalograms (EEGs) of the different seizures were to be done, the EEG would be different for each type. There are different systems of classification for epilepsy, but the one below is a simplified form of that of the International League against Epilepsy (Appleton et al. 1992: 4–5; Bennett 1992: 20; Batshaw 1997: 555).

In identifying the different forms of epilepsy two matters are important, namely

- the nature of the seizure
- the underlying cause of the seizure.

One speaks of a general seizure if the whole brain is involved. In a partial seizure only a specific area of the brain is involved, i.e. the specific spot where the epileptic focus is situated, which is then called focal epilepsy. Hence there are two broad groupings of epilepsy – general seizures and partial seizures.

An aetiological classification of the epilepsies is based on the causes of seizures. In this regard a

distinction is made between *primary* and *secondary* epilepsy. In primary epilepsy there is no evident cause, i.e. the cause is unknown. The condition is also known as *idiopathic* (Greek: a condition unique to the individual), *cryptogenic* (Greek: concealed, hidden) or *essential epilepsy*. Heredity may play a role here.

In the case of secondary epilepsy the cause can be identified. It is usually the result of brain damage, i.e. an injury to the brain, though the cause of the injury may not always be known.

General epilepsy may be primary or secondary, but partial or focal epilepsy can only be secondary (i.e. the cause is known, namely a focal lesion in the brain).

The origin of general seizures is extraordinary electrical discharges in the centrencephalic structures situated in the middle of the brain. They include the thalamus, hypothalamus, basal ganglia and reticular formation. These structures have direct associative neural connections with all other parts of the central nervous system. The whole brain is therefore involved in general seizures.

Partial seizures are, as mentioned, of focal origin. They may extend and become generalised seizures, which are then called secondary general or generalised seizures. This occurs when partial seizures spread to the rest of the central nervous system.

ACTIVITY

From the above explanation it is clear that epilepsy involves an abnormal functioning of the various structures of the brain. Are you aware of the myths that surround epilepsy? How do you think these affect the person who has these seizures? What barrier to learning (BtL), according to the *Education White Paper 6*, applies particularly to this instance?

People are still very ignorant about epilepsy and in some instances word still goes round that such people are bewitched or mad. Some people think that people with epilepsy are dangerous and strong. One of the most common myths is that people with epilepsy are intellectually impaired, but nothing could be further from the truth.

Apart from dealing with the epilepsy, the person also has to deal with the unfair preconceived ideas of uninformed people. Carrying this double burden may contribute to the marginalisation of the person, and it is of paramount importance that the teacher eradicates these perceptions. The barrier to learning will be “stereotyping of differences”.

13B.3.1 General seizures (centrencephalic seizures)

13B.3.1.1 Non-convulsive general seizures

Convulsions are absent in these seizures. Two groups are distinguished as follows:

- **Seizures where only fluctuations in consciousness occur.** These can again be subdivided into the typical absence or *petit mal*, where the person is immobile and/or simply stares only for a few moments; atypical absence (the same symptoms as in typical absence, “with a slight excess of motor accompaniment such as orofacial clonic twitching” (Niedermeyer 1990: 58)); absence status or *petit mal* status (protracted trancelike condition, or consciousness shows more or less continuous fluctuation).
- **Seizures where the fluctuation of consciousness is accompanied by other phenomena.**

Here the disturbance of consciousness is more complex. The following are distinguished: clonic movements (slight, non-jerky movements); tonic absences (increased muscular tension); atonic absences (reduced muscular tension); absences with automatisms (person automatically continues an action, e.g. cycling); absences with autonomic symptoms (e.g. sphincter muscles relax, and bladder and bowels are voided).

Important: Absences may also occur in people who have other types of seizures, but the two types do not occur simultaneously.

13B.3.1.2 Convulsive general seizures

These are seizures where convulsive spasms of the body occur. The following can be distinguished:

- Seizures with myoclonic spasms (one or more isolated but massive spasms involving virtually the entire muscular system)
- Seizures with tonic convulsions (of centrencephalic origin – stiff, tense posture)
- Seizures with clonic convulsions (of centrencephalic origin – the same symptoms as in the phase of tonic-clonic convulsive seizures)
- Tonic-clonic convulsive seizures of centrencephalic origin. Here we find the typical *grand mal* pattern (previously known as “falling sickness”). The seizure begins suddenly, without warning or premonitory symptoms. The seizures are violent and there is immediate loss of consciousness.

Three phases can be identified in tonic-clonic convulsive seizures, according to Wilkinson (1993: 18), Batshaw (1997: 556), Brett (1997: 352) and Krüger et al. (2001: 60):

1. **Tonic phase.** The trunk stiffens, wrists are contracted, breathing stops, air is exhaled from the lungs, eyes are half-open while the eyelids and jaws are stiff. Groaning or grunting sounds may be made or an “epileptic scream” may occur while air is exhaled from the lungs.
2. **Clonic phase.** The clonic phase directly follows the tonic phase. It begins with violent, rapid spasms and ends in irregular, great spasmodic jerks. It is sometimes accompanied by loss of sphincter control. Respiration is resumed slowly and foam may appear at the mouth. The person sometimes tends to bite his tongue and the inside of his mouth during a seizure, consequently the foam may be bloody.
3. **Coma.** The clonic phase is followed by deep unconsciousness or coma. The muscles relax gradually, the limbs relax and the person sometimes goes into an ordinary form of deep sleep.

Seizure patterns differ from person to person. The duration of each phase and the after-effects, such as headaches, listlessness and so on, may also differ from person to person. The whole seizure usually lasts no longer than two or three minutes. If the period between seizures is very

short, it is dangerous and medical assistance should be sought immediately (Batshaw 1997: 571). This condition is known as *status epilepticus*. The seizure manifestations create “a fixed or lasting epileptic condition” (Niedermeyer 1990: 193).

13B.3.2 Partial seizures

Partial seizures are always the result of injury to or a deviation in the functioning of a specific area of the brain, also known as a focal lesion or injury. The following types can be distinguished:

13B.3.2.1 Partial seizures that do not become secondary generalised seizures

(a) Partial seizures with simple symptoms

Symptoms are observed on the side of the body opposite to the side of the brain where the injury is localised, for example:

- **Focal motor symptoms.** These are the clonic movements of a single group of muscles, and the person is fully conscious.
- **Jacksonian seizures.** The symptoms are the same as for focal motor seizures, except that the jerky movements spread to adjacent muscle groups. The person may lose consciousness if a large section of the body is involved in the “march” or if the seizure spreads to the other side of the body.
- **Versive or adversive seizures.** If the focus is situated far to the front of the brain, the person may lose consciousness. The external symptoms are that the eyes and head turn towards one side. According to Brett (1997: 367, 370) similarities can be found between this kind of seizure and postural seizures.
- **Postural seizures.** The learner assumes a typical half-seated position with one arm raised and the head and eyes turned in the direction of the raised arm. If the seizure spreads in the brain, clonic movements of the arm and leg, and sometimes the facial muscles as well, occur on the same side of the body.
- **Seizures with somatic inhibition.** A temporary kind of apraxia (inability to move muscles) occurs for the duration of the seizure.

- **Seizures with speech inhibition or aphasic seizures.** These involve temporary impediment of speech or use of language. Aphasia indicates the loss of or disturbance in the ability to understand spoken language (receptive aphasia) or to voice thoughts by means of spoken language (expressive aphasia) (Krüger et al. 2001: 251).
- **Seizures with vocalisation.** Vocalisation alone occurs infrequently and is usually the initial sign of an oncoming full convulsive seizure. A sound – usually “aaah” – is uttered evenly or quaveringly.
- **Sensory seizures.** These are related to the brain areas controlling somatic, aural, visual, olfactory and gustatory sensations. During sensory seizures the person often experiences these sensations as the initial symptom of a full epileptic seizure. The condition may occur in isolation and is sometimes called the epileptic aura. Autonomous symptoms such as nausea, palpitations, changes in blood pressure and circulation, increase or decrease of body temperature, deviations in glandular functioning, skin reactions and, sometimes, sexual stimulation, may also occur as sensory seizures (Wyllie 1993: 372–375).

ACTIVITY

During a physical education period, one of the learners squats down, lifts her arm pointing to the sky and also looks in that direction. You attend to her and are also looking towards the sky because you think at first that she is trying to show you something. When you look back at the learner, you realise that her face has twitching movements. What has happened and what should you do?

The learner is having a postural seizure. You will stay with her until the seizure stops and observe her closely afterwards for any after-effects. You will then report the seizure to her parents and school authorities. She will most probably be able to continue with her school activities.

(b) Partial seizures with complex symptoms

This type of seizure is caused by lesions in the area of the brain around the temporal lobe. In this area, and particularly in the deeper areas, there are complex anatomical structures, hence the complexity of these seizure patterns. Disturbances of consciousness often occur. During these seizures the following disturbances may occur:

- Fluctuations of consciousness
- Disturbances of memory
- Disturbances of thought
- Disturbances of emotions
- Psychosensory symptoms (e.g. epileptic hallucinations)
- Psychomotor symptoms (this kind of symptom is associated primarily with epilepsy caused by injury or damage to the temporal lobe). The best known symptoms are automatism, i.e. automatic movements, as well as characteristic actions such as chewing and swallowing movements, self-inspection of the body and irrelevant speech often occur.

ACTIVITY

During an examination session, just before you hand out the examination papers, one of the learners jumps up and starts to walk aimlessly around in the class while uttering funny sounds. One of the girls tries to calm him down and direct him to his seat, but he keeps on walking.

- What are you witnessing?
- What would you say brought on this behaviour?
- Will you let this learner write the examination paper?
- How will you deal with the rest of the class?
- Which barriers to learning (BtL), according to the *Education White Paper 6*, will apply if the learner is not accommodated?

You are witnessing a partial seizure with complex symptoms and, in particular, psychomotor symptoms which include automatic movements (walking) with one of the characteristic actions, namely irrelevant speech. (BtL: “stereotyping of differences” if the teacher assumes that the learner is merely displaying awkward behaviour to avoid writing the examination paper.) His seizure was most likely brought on by the tension of the examination, although there may also be other reasons. Perhaps he forgot to take his medication. This learner should be examined on another (seizure-free) day. (BtL: “an inflexible curriculum” if the learner has to write the examination after his seizure.) Before the rest of the class starts with the examination, the event should be discussed and his behaviour explained on a level that the learners can comprehend. (BtL: “inappropriate communication” if the teacher does not communicate the event to the learners to address the consternation the learner’s behaviour has caused.) The teacher must see to it that all the learners are calm before handing out the papers and most probably the examination session will be extended to allow for lost time. (BtL: “inadequately trained educator” if the teacher has no knowledge of epilepsy.)

13B.3.2.2 Partial seizures that become secondary generalised seizures

Any of the above partial seizures may develop into generalised seizures; they are then called secondary generalised seizures. They follow the spreading of the epileptic process from a confined brain area to the central area of the brain (the centrencephalic areas) and are *grand mal* seizures which follow the full clonic-tonic seizure sequence.

13B.3.3 Unclassified epileptic seizures

The international committee that compiled the classification of epilepsy did not describe this category of epileptic seizures in detail. The incidence of epileptic seizures in babies that do not yet follow a fixed seizure pattern may, for example, be regarded as “unclassified”. Researchers have found that, in some types of seizure, epileptic discharges take place fairly low down in the central nervous system. The resultant symptoms are characteristic of the disruption in the connection between the lower and higher centres of the central nervous system. Yet the seizures (according to the symptoms) do not fit in with the previously mentioned types of seizure and they are included under the term “unclassified” seizures.

13B.4 SUSCEPTIBILITY OR INCLINATION TO EPILEPSY

Some persons are more susceptible to epilepsy than others, especially in cases where the causes are unknown, which strengthens the assumption

that genetic factors play a role. This means that epilepsy may also be linked to an inherited disposition. Such an increased tendency towards epilepsy may be induced by a weakened natural ability of the brain cells to successfully control electrical discharges. Epilepsy can thus be linked to a weakened convulsive or seizure threshold which to all appearances is determined by heredity.

13B.5 FACTORS THAT MAY CAUSE EPILEPSY

It appears as if the possibility for the development of epileptogenic injuries (injuries that “generate” epilepsy) exists in all types of injury or damage to brain tissue. Different factors may contribute to brain damage and the resultant development of epileptogenic injury. These factors include metabolic disturbances, blood vessel abnormalities, cerebral bleeding, biochemical disturbances, blood vessel abnormalities, toxæmia, lack of oxygen to the brain, cerebral infections, brain tumours, head injuries, etc. (Batshaw 1997: 555). Although brain injuries of some type or other can, in the majority of cases, indicate the cause of epilepsy, there are also cases where no specific cause or causes are evident, which indicates the possibility of a genetic factor (Hauser & Hesdorfer 1990: 93–108).

13B.6 IDENTIFICATION OF EPILEPSY

Identification does not mean to diagnose epilepsy. This is the task of the medical specialist, main-

ly the neurologist. Teachers, especially early childhood practitioners and foundation phase teachers, can make an important contribution to the early identification of epilepsy. When the teacher suspects that a learner may be suffering from epilepsy, there are several signs that may indicate that a referral to a neurologist is required. Apart from the obvious signs or manifestations of seizures that are described above, the following may also provide direction to the teacher's identification, according to Krüger (1992):

- General motor clumsiness
- Sudden disturbed muscular control, awkwardness, clumsiness and a lack of coordination, which do not correlate with his usual actions. He stumbles or bumps into things or drops them. If the teacher suddenly talks to him, he is astounded.
- Involuntary flexing and shaking movements of the hands
- Poor sense of direction
- Signs that the learner inexplicably feels strange in an environment which should be familiar to him; e.g. he cannot open a door which he is usually able to open (he turns the handle the wrong way, or is unable to open the latch); he is suddenly unable to climb down from a jungle gym; or he will appear at the tap with his pencil and paper instead of with his little bucket.
- Slow speech and language development
- Specific visual and auditory perceptual deficiencies
- Disturbed laterality (left/right discrimination)
- Hypokinesia (underactivity)
- Hyperactivity
- Inability to discriminate between simultaneous tactual stimulations
- Inability to copy simple geometrical shapes
- Untidy handwriting
- Nystagmus (involuntary turning of the eyeballs, also known as eye dancing)
- Strabismus (squinting of the eyes)
- Tremors
- Cross-dominance
- Associated movements (movements carried out by limbs which are not involved in the action)
- Dysidiadochokinesis (problems with rhythm)
- Learning problems
- Concentration problems
- Fluctuation of achievements – apparently inexplicable disturbances of the memory, especially an inconsistent memory. What the learner knows one day, he forgets the next, and the day after he suddenly remembers it again; for example, he cannot remember the names of his siblings. If he knows his surname he sometimes cannot remember it. He forgets instructions or carries them out partially or incorrectly (keep in mind, however, whether the instruction is within his ability and whether he usually remembers it and carries it out correctly).
- Signs of confusion without other symptoms and without any reasonable cause. The learner suddenly appears disorientated; it seems, for example, as if the familiar environment of the class or playground is strange to him.
- Sudden and unexpected temper tantrums and anger, without any evident cause or disproportionate to the apparent cause
- Frequent fighting with friends
- Distress when routine is changed
- Destructive behaviour
- Evading cuddling
- Inappropriate emotions (social imperception)
- Impulsive behaviour
- Clinging to one thought for a long period of time
- Difficult to discipline
- Crying for no obvious reason
- Looking weary at times
- Sudden emotional disturbances, also disproportionate to the circumstances, e.g. a hypochondriac obsession with the way he feels; signs of anxiety and fear
- Occasional “difficult” behaviour which a person close to him is unaccustomed to, or which periodically occurs while he is otherwise totally compliant
- Sudden onset of bedwetting and incontinence, although these may have other causes besides epilepsy

The occurrence of these signs does not automatically imply that the learner has epilepsy, but it should raise the teacher's awareness that a referral is required. In addition, it is well known that people may exhibit one or more of these signs without impairment to their general functioning. In such cases the presence of these signs is not significant. If the signs appear in a cluster, i.e. many are present, it becomes significant. Some of the signs are also significant

- if there is a fairly regular repetition of the behaviour and it does not occur only a few times
- if it occurs suddenly, unexpectedly and apparently without provocation
- if there is a degree of stereotyping, i.e. the episodes always occur more or less in the same manner
- if it looks as if the learner loses contact with his environment during such an episode, or is not completely aware of what is happening around him and his behaviour is also apparently out of place under the circumstances i.e. it is evident that the child is not absent-minded or preoccupied without reason.

What if you as a teacher identify possible epilepsy in a learner, and after you have raised your concern to the parent, the parent decides to take the learner to a traditional healer?

The parent remains the legal guardian of the child and, apart from voicing your opinion to the parent, there is nothing you can do. It is, however, essential to maintain a good relationship with the parent and communicate the learner's progress or lack thereof to the parent. The parent may perhaps later be persuaded to take the child to a medical practitioner.

ACTIVITY

13B.7 EPILEPSY AND LEARNING

A great many learners with epilepsy experience learning problems. Many learners with epilepsy do not achieve according to their learning potential. Reading problems, spelling problems and

problems with calculations are generally associated with epilepsy.

In the case of epilepsy, learning problems are also mainly concentrated around the following aspects:

- Intellectual functioning
- Type of seizure
- Relationship problems in school
- Behaviour and emotional problems
- The use of medication and its possible effects

13B.7.1 *Epilepsy and intellectual functioning*

13B.7.1.1 *Intellectual ability and epilepsy*

Contrary to some beliefs, epilepsy in itself does not automatically lower intellectual ability. People with epilepsy have the same intellectual abilities across the broad spectrum that ordinary people without epilepsy have (Hauser & Hesdorffer 1990: 260).

13B.7.1.2 *Intellectual deterioration and epilepsy*

Epilepsy may lead to a deterioration of intellectual functioning, particularly where the seizures are frequent, severe and uncontrollable by medication. Intellectual deterioration is attributed to a variety of factors, including the damaging or destruction of the nerve cells (Appleton et al. 1992: 86) as a result of seizures that occur repeatedly, and are long lasting and intense.

13B.7.2 *Types of seizure and learning*

13B.7.2.1 *Non-convulsive general seizures and learning*

The typical absence or *petit mal* seizure is accompanied by short spells of unconsciousness, sometimes just for a few seconds. Absences may be sporadic in certain learners, while in others they may occur as often as a hundred times a day. Absences occur suddenly without any prior signal or warning and immediately involve both sides of the brain. During the seizure the learner has an empty, glazed expression in his eyes, sometimes turning them upwards, and makes a sharp sound with his mouth. However, an absence may also occur without any motor symptoms, so that the

sudden disruption of the activity with which the learner is involved (reading, writing, speaking, etc.) is the only outwardly observable symptom of the seizure.

ACTIVITY

A learner in your class is daydreaming excessively. Sometimes he stops in the middle of a sentence while speaking and continues talking after a while; other times he stops while writing and his writing continues after he has drawn a straight line in a very small font and then continues in his usual style. You ask him about this phenomenon, but he is unable to explain it. How will you explain this?

The learner is most probably suffering from a typical absence or *petit mal* seizure that has not yet been diagnosed.

Absences disturb the child's continuity of consciousness and thus disrupt his ability to attend properly. In this way gaps in knowledge may occur, which makes conceptual thinking difficult. Refer to learning support that is discussed later in this chapter.

The time which immediately precedes and follows the absence is also disturbing to the child's learning. His thought processing may be slowed, distorted or tenuous.

13B.7.2.2 Convulsive general seizures and learning

This refers to sudden seizures involving the entire brain and convulsions of the whole body. Convulsive general seizures, especially those of a clonic nature, usually exhaust the learner to such an extent that for some time after the seizure he finds it difficult to think clearly and logically. A severe seizure may have different after-effects, including confusion, headache, restlessness, disturbed speech, temporary paralysis, etc.

A characteristic phenomenon in some learners with convulsive general seizures is the inconsistency of their thoughts and their achievements. Things they know well and can do one day, they cannot get right later or they may know nothing about something on one day only to remember it

all the following day – the phenomenon of fluctuating achievements that were discussed as part of the identification of epilepsy above.

Some learners with epilepsy experience a period of progressive build-up to the seizure. During this period the learner's behaviour is inexplicable and he is often irritable and aggressive, his attitude to learning is poor and he appears to be apathetic towards it.

13B.7.2.3 Subclinical seizures and learning

Epileptic discharges sometimes occur without the learner showing the acknowledged symptoms of an epileptic seizure. Such a discharge in one of the brain areas whose function is directly connected with the child's learning activity can be just as detrimental as a total seizure. This is especially the case where the discharge occurs in the temporal lobe.

13B.7.2.4 Partial seizures and learning

These are seizures caused by a focus in a certain area of the brain and which is always the result of an injury or a deviation in the functioning of the specific area. The manifestations of this type of seizure will have a bearing on the normal functions of the specific area in the brain which is affected.

Focal epileptic conditions, whether they become secondary generalised seizures or not, become involved with learning problems. Learning problems manifest themselves in the learner with focal epilepsy in the same way as in the learner without epilepsy, i.e. in deviations of sensory integration, conceptualisation, memory, control over attention, the development and the use of spoken and written language, the understanding of numbers, and the control of motor functions (with deviations in coordination and motor skills).

The most common localisations for a focus associated with learning problems are centred in the left and the right temporal lobes, as well as in the left and the right frontal lobes of the brain.

(a) Lesions in the frontal lobes

Seizures resulting from a focus in the frontal lobes also have a temporary effect on the learner's ability to think and work independently. If the

focus is seated in the left temporal lobe, speech problems may be expected.

(b) Left temporal lobe focus

Speech and language disturbances may occur briefly owing to the seizure and its consequences, for instance during a period of recovery. However, there are language and speech disturbances that are more chronic and that are the result of left hemispheric disturbances, especially of the left temporal lobe. In the case of chronic language and speech disturbances, there is a weakness in the smooth flow and clarity of speech. This is accompanied by word choice problems, poor comprehension of word meaning, word order and pronunciation. The learner's speech is often also slow and jerky, difficult to understand and frequently full of unusual word choices which, although they almost convey the right meanings, are not quite correct.

Language and speech problems eventually lead to reading, spelling and even writing and mathematical problems.

(c) Right temporal lobe focus

If epileptic seizures are the result of a focus in the right temporal lobe, the learner will probably experience problems with the following:

- The recognition of form, form–spatial relationships and the attribution of meaning to general non-verbal spatial information
- The meaningful interpretation of people's overt behaviour
- The recognition and synthesis of musical perception and rhythmic activities

Perceptual problems such as these have a detrimental effect on the child's learning. Among other things, the learner finds it difficult to distinguish between shapes such as rectangles and squares, which makes mathematical operations difficult. The learner may also experience reading problems because he perceives the form of letters and/or figures, especially *t*, *f*, *b* and *d*, incorrectly. Such a learner may also find it difficult to copy correctly from the chalkboard. An inability to differentiate spontaneously between left and right can, for example, lead to the reversal of letters.

ACTIVITY

What are the implications of the above-mentioned learning problems with regard to learning support?

Try to make your own list of aspects that require learning support before you refer to the section of learning support that is discussed later in this chapter.

13B.7.3 Relationship problems at school and learning

Teachers' attitudes towards learners determine, to a great extent, their attitude towards their schoolwork. The teachers' educational approach may lead either to feelings of security or of insecurity, tension and anxiety in the learners. Through their attitudes and behaviour, teachers can stimulate or inhibit learners' learning initiative.

The relationship between the teacher and the learner is also reflected in the educational relationship of authority. The balance between freedom and authority creates order in the learner's mind as well as in the classroom, and this enhances learning. Both learner and teacher must become reciprocally involved with each other if the learner is to accept the teacher's authority. This involvement serves as a basis for the identification relationship between the teacher and the learner. Identification is not possible without mutual acceptance. The learner who identifies with the teacher usually accepts the study matter offered. Any relationship problems between teacher and learner will therefore harm the child's learning. In such a case the learner dissociates himself not only from the teacher, but from the study matter which is offered.

All teachers are not familiar with epilepsy and the implications it has for learners and their learning. It is therefore imperative that the teacher acquires the knowledge to note subtle epileptic manifestations (lapses of consciousness); associates poor school achievement with sub-clinical discharges; becomes familiar with the possible effects of medication on a learner; and knows that irritability and aggression may sometimes be the forerunners of a seizure, and that this makes it difficult for the learner to concentrate on his schoolwork. He must also be sure of the demands

which he may place on the learner, etc.

The learner with epilepsy can make high demands on his teacher and it is understandable that some teachers are not equal to the task and become irritated with the learner. In such a case the learner quickly becomes aware of it and may

gradually begin to efface himself in class. As a result such a learner often becomes lonely. By effacing himself, he also withdraws from his duty to learn. He may show a superficial willingness to learn and to achieve, and begins to develop learning problems.

ACTIVITY

Sometimes teachers are confronted with huge classes and it is simply not possible to pay individual attention to all the learners. How will you then ensure that the learner with epilepsy does not feel left out? What about your own reserves as a teacher? How will your attitude towards this learner influence the rest of the class?

First of all, the importance of knowledge about epilepsy is already creating a better understanding of the learner and the learner ought to sense this. In a big class there are a variety of things that a teacher can do to ensure that the learner with epilepsy does not feel left behind. The teacher can touch the learner's shoulder while walking through the class; the learner can be seated close to the teacher so that behaviour changes can be noticed; a simple question from the teacher about how the learner is feeling on the day can work wonders; the learner may perform special chores from time to time such as cleaning the chalkboard, etc.

It is also important that the teacher has a support group when his reserves are running low. The teacher must have colleagues or friends that are willing to serve as a sounding board.

If the teacher has a negative attitude towards the learner, he will most probably convey this attitude to the other learners (D'Alonzo et al. 1996: 309). The learner will thus remain marginalised in spite of inclusive education, which is actually supposed to contribute to the exact opposite. Apart from knowledge that is of utmost importance to change attitudes from negative to positive, the teacher must also strive to discover, appreciate and acknowledge the strong points of the learner and share them with the other learners in class.

The relationships between learners are important for successful learning. The learner's feelings can be hurt in many ways within the classroom. There is competition between learners, differences of opinion, jealousy and labelling as "stupid" or even "different". Any of these factors may arouse emotions that can be detrimental to the learner's motivation to learn.

13B.7.4 Behaviour and emotional problems and learning

Behaviour and emotional problems are common among learners with epilepsy (Hauser & Hesdorfer 1990: 257). As a person who needs support, this learner is dependent on his educators (parents and teachers) and their conduct and attitude towards him influence his personality development to a large extent. His growing up is also influenced greatly by the attitude and behaviour of friends and others in society with whom he has contact.

Within the social context, epileptic seizures also create problems for the learner. The typical absence temporarily but unexpectedly cuts him off from his world and this arouses a feeling of estrangement in both learner and bystander. After a tonic-clonic seizure the learner is often confused, partially paralysed, displays speech disturbances and understands others with difficulty. He sometimes wets and soils himself. In the bystander it usually arouses fear and even repugnance, while the learner himself is usually embarrassed and feels hurt, inadequate, inferior and even different from others. To such a learner his relationship with other people takes on a negative connotation.

Epileptic seizures fill the learner, particularly the young learner, with fear. He is often afraid that he will die. The older learner regards seizures more as an embarrassment and sometimes tries to disguise his condition. He can conceal the use of medication, but not the seizures. This frustrates

the learner and he may portray the presence of his frustration and inability to control the situation properly by cantankerousness, depression, rebelliousness, aloofness, etc. Epilepsy therefore affects the learner's self-concept formation.

The condition of the learner with epilepsy permeates his whole existence. His life may revolve around it. There are the numerous admonitions and prohibitions, the continual use of medication and visits to doctors, as well as the attitude of others in this regard.

All this is not easy for the parent, and educational errors such as overprotection, pampering and rejection often occur with unique complications for the development of the learner's independence.

In the case of focal epilepsy with learning problems as a result, behavioural manifestations such as fluctuation of attention, hyperactivity, perseveration (the inability to control a certain verbal or motor impulse), aggressiveness, etc. that impede successful learning, are manifested.

Learning is an all-encompassing event. The learner as a whole is involved in his learning – physically, emotionally and cognitively. A stable emotional life is essential to successful learning. In everything a person undertakes there is always an underlying feeling evident. The learner displays a certain attitude towards every learning task he undertakes. He either likes it or not; he either shows interest or not; he has the self-confidence to work or he fears he cannot do it. Emotionality is therefore a matter which has a bearing on the learner's feeling of safety, self-confidence, risk-taking, etc. Tension, anxiety, aggression, uncertainty, a feeling of inferiority, etc., are forms of experience that restrict the learner's ability to perceive, pay attention, think and learn.

13B.7.5 The use of medication and its possible effects on the learner and learning

The successful control of epileptic seizures requires the regular use of medication. In the majority of cases medication has to be used for life. It does not guarantee control of seizures (Brett 1997: 395–396). Medication, however, sometimes has harmful side effects. Some medi-

cines make the learner drowsy and may, to the unenlightened, create the impression that the child is “lazy” or even “stupid”. In other cases it may lead to restlessness, irritability, agitation and even, although in the minority of cases, to totally deviant behaviour.

The use of medication, especially prolonged use, sometimes also affects the learner's general health. The learner who does not feel well is often unmotivated in the teaching–learning situation, is slow to compete and to achieve, and even offers resistance (Bennett 1992: 91).

13B.8 LEARNING SUPPORT TO THE LEARNER WITH EPILEPSY

13B.8.1 General support to learners with epilepsy

Epilepsy makes a learner more vulnerable to frustrations and tension and he needs more purposeful guidance to adjust to and accept his condition in order to live in peace. His learning and progress are in no uncertain measure influenced by his teacher's attitude towards him, and to see him and reach him as an individual within the larger class context. This means that the teacher should be on the lookout for the subtle and indirect manifestations of epilepsy. Being mindful of the possible detrimental effects that the use, or irregular use, of prescribed medication may have, and systematic yet unobtrusive observation of the learner is of particular importance. By carefully observing not only this learner but all learners in the class, the teacher can also identify the learner who tries to conceal his problems or is even unaware of them. This requires a knowledge of epilepsy and its manifestations.

The regular use of medication is essential and provision should be made for the learner to take medication during school hours. Someone at school should supervise the learner's taking of medication according to the doctor's prescription and not at a time that suits the teacher the best.

The teacher should avoid granting the learner with epilepsy a special position in the class. The teacher should not be overprotective or too lenient concerning scholastic expectations and discipline. It is essential that realistic expectations be set and good discipline maintained. Unneces-

sary tension and frustration should, however, be avoided as far as possible, or be limited to a minimum.

The learner with epilepsy should become involved in school activities as much as possible. Although limitations will have to be placed on his

participating in potentially high-risk or dangerous activities (e.g. swimming without supervision), the teacher should do this with circumspection. Restrictions should be realistic and not simply because the learner has epilepsy (Smith 1990: 187).

ACTIVITY

How will you deal with a tonic-clonic convulsive seizure in class? Before you proceed to the answer, access the knowledge that you have gained thus far in this chapter and decide how you will deal with this seizure. This will be a much more valuable learning experience than simply reading the answer. And you may even come up with strategies that are mentioned in the answer below!

Your answer must cover the following:

Remember to time the seizure; in the case of prolonged seizures, medical assistance is required. What will you do with the rest of the class? What about desks and chairs close to the learner? Say something about your observation of the symptoms of the learner so that you can recount them in a short report to the neurologist. Are you going to suppress any of the movements of the learner? What will you do with tight clothing or a belt? It is a good idea to “talk” the other learners “through” the seizure and prevent them from standing too close to the learner. How will you deal with the cleaning up of the learner? How must the learner be turned in the coma phase? Open airways are extremely important. How will you deal with the learner when the seizure is over? What will you do with other learners who are upset? Remember to inform the learner’s parents.

It is usually also advisable for the teacher to inform classmates and other learners in the school regarding the problems of the learner with epilepsy – but only with the consent of the learner and/or his parents – as well as of the importance of unconditionally accepting such a learner as equal to his peers and to help him to reach his potential.

13B.8.2 Specific learning support to learners with epilepsy

Learners with epilepsy may require the following learning support:

- Adjusting the curriculum
- Multi-sensory stimulation (involving as many senses as possible) except when learners are overwhelmed by all the stimuli; guard against overstimulating hyperactive learners
- Restricting external influences that could absorb the attention of learners who find it difficult to focus their attention
- Repeating the work, particularly after a seizure
- Taking the recuperative period, following a seizure, into account when continuing with a lesson; the learner may appear to have recovered fully while in reality the brain is not yet functioning sufficiently
- Photocopying work if the learner falls behind or is a slow worker
- Appointing a buddy that can act as a mentor and confidant to the learner
- Assisting them with planning of their work; breaking instructions down into simple tasks
- Structuring the learning environment according to a set routine
- Working from the concrete to the abstract
- Linking previous work to current work
- Revising frequently, in particular after a school holiday
- Allowing extra time to finish work
- Reading work (tests or examination papers) to them
- Using typewriters or notebooks when handwriting is very poor or slow
- Allowing tests or examination papers to be done through amanuensis – an independent third party writing their answers down

- Using oral tests or examination papers
- Ignoring serious spelling mistakes for test or examination purposes
- Reading work on a tape recorder for learners with reading problems
- Redoing the previous work if gaps occur in their learning

13B.9 SAFETY MEASURES IN AND OUT OF CLASS

ACTIVITY

Let us start with the following activity. See if you can think of safety precautions in and around your class that you will put in place when a learner in your class is suffering from epilepsy. Once again, try to apply the knowledge that you have gained thus far, because the answer below does not provide all the information.

Your answer must cover the following:

Why should they never be left alone? They must always be accompanied on errands. How will you explain to them that they are not allowed to chew gum? Will you allow them to lock the door of the toilet? What about their medication and dosages? A *Medic Alert* bracelet is a good idea. Sometimes epilepsy is caused by the flickering of light and shadow, the so-called photogenic epilepsy. Will you allow learners with this problem to work on a computer or watch television? Limit excessive excitement because it may cause hyperventilation that could bring on a seizure. Will you allow the learner to sit close to a window? Think of the consequences if he falls against the window during a seizure.

Basic safety precautions will comprise the following:

- Learners with epilepsy may never be left be alone, because they may have an epileptic seizure while alone with detrimental effects. For the same reason, a buddy must always accompany them on errands.
- They are not allowed to chew gum, because they might choke on it during a seizure.
- They may not lock any doors behind them in a general school setting because people will not be able to render support in the event of a seizure. They will most probably not be in any position to unlock the door themselves. (They may even fall against the unlocked door, in which case the door must be gently pushed open in order to reach them.) When they are home, the front and back doors *must* be locked to ensure their safety in our crime-ridden country.
- Learners are not allowed to keep the medication. An overdose can be fatal. If teachers administer the medication they must ensure that the tablet is actually swallowed. Teachers may never alter a dosage. If a learner displays abnormal behaviour such as disorientation, incoherence and motor problems, the possibility of toxicity should be kept in mind. A blood test will confirm whether the level of medication has reached a toxic point, whereupon the medical practitioner will alter the dosage.
- Learners with photogenic or light sensitivity epilepsy (also known as “television epilepsy” – Brett 1997: 375) will not be allowed to work on computers, or watch videos and DVDs, etc.
- Pay attention to potential dangers such as woodwork machinery, windows and jungle gyms that can pose a threat during a seizure.

ACTIVITY

What safety measures would you employ when taking a learner with epilepsy on a class or sports tour or camping trip?

Your answer must cover the following:

You must have the learner’s medication and the exact dosages. Will you allow the learner to keep all the medication in his possession? The learner must be attended to at all times. What about open fires and the learner standing too close to the fire? Say something about mountain climbing (precipices) and the learner with psychomotor seizures. The learner

should shower instead of taking a bath, because of the danger of drowning during a seizure. (If there are no showers, the learner must be attended to while taking a bath.) How will you monitor a learner with heavy seizures during night-time? Remember that the learner can suffocate in a pillow. You will have to take colleagues along to assist you with supervision. The teachers can take turns to monitor a learner with night seizures. A baby monitor that can be switched on at certain times at night may also provide a solution, because any grunts and groans will be heard on the monitor, provided that the teacher is a light sleeper. (The other learners may, however, consider the baby monitor an intrusion on their late-night private conversations.) What about the top bed of a bunk bed? Will you allow the learner to swim and if you do, how will you supervise him? You must also see to it that learners with epilepsy do not stand too close to the edge of a swimming pool.

13B.10 CONCLUSION

Epilepsy is a sudden disturbance or change of brain function owing to extraordinary electrical activity in the brain cells. It is usually the result of brain damage – although the cause of the lesion is not always known – while heredity may also play a role.

There are learners with epilepsy who experience problems with intellectual functioning and behaviour disturbances and who are in need of extensive learning support. On the other hand, there are also some learners whose epilepsy is of such a slight nature or severity, or is under control to such an extent that they can successfully progress. Because the learner can never dissoci-

ate himself from or deny his epilepsy, the teacher can make an important contribution by making the learner to feel at home.

Questions

1. Does the impact of partial and generalised epileptic seizures on schoolwork differ? Motivate your answer.
2. Why is the cortex important in the study of epilepsy?
3. Anti-convulsive or anti-epileptic medication may be beneficial to the learner but it may also be harmful or even detrimental. Discuss all three aspects.

Bibliography

- Appleton, R., Baker, G., Chadwick, D. & Smith, D. 1992. *Epilepsy*, 2nd ed. London: Martin Dunitz.
- Batshaw, M.L. (Ed.). 1997. *Children with disabilities*, 4th ed. Baltimore: Paul H. Brookes.
- Bennett, T.H. (Ed.). 1992. *The neuropsychology of epilepsy*. New York: Plenum.
- Brett, E.M. (Ed.). 1997. *Paediatric neurology*, 3rd ed. New York: Churchill Livingstone.
- D'Alonzo, B.J., Giordano, G. & Cross, T.L. 1996. Improving teachers' attitudes through teacher education toward the inclusion of students with disabilities into their classrooms. *Teacher-Educator*, 31(4): 304–312.
- Hauser, W.A. & Hesdorffer, D.C. 1990. *Epilepsy: frequency, causes, and consequences*. Epilepsy Foundation of America, New York, NY: Demos.
- Kapp, J.A. (Ed.). 2002. *Children with problems – an orthopedagogical perspective*. Pretoria: JL van Schaik.
- Krüger, D. 1992. *Identifisering van sagte neurologiese uitvalle deur die opvoedkundige sielkundige*. Unpublished MEd dissertation. Pretoria: Unisa.
- Krüger, D., Burden, A., Bornman, G.M., Landsberg, E., Dednam, A. & Burger, S. 2001. *Spesiale onderwysbehoefte* (only study guide for OSN 431-S). Pretoria: Unisa.
- Krüger, D., Burden, A., Dednam, A., Levitz, A. & Landsberg, E. 2002. *Leerders met spesiale onderwysbehoefte* (only study guide for FDES3-T). Pretoria: Unisa.
- Niedermeyer, E. 1990. *The epilepsies – diagnosis and management*. Baltimore: Urban & Schwarzenberg.
- Oswald, M., Ackermann, C.J. & Engelbrecht, P. 2000. Onderwysers in hoofstroomskole se houdings teenoor inklusiewe onderwys. *Tydskrif vir Geesteswetenskappe*, 40(4): 306–317.
- Simpson, P.J. & Garrison, J. 1995. Teaching and moral perception. *Teachers College Record*, 97(2): 252–278.
- Smith, D.B. (Ed.). 1990. *Epilepsy: current approaches to diagnosis and treatment*. New York: Raven Press.
- Wilkinson, I.M.S. 1993. *Essential neurology*, 2nd ed. London: Blackwell Scientific Publications.
- Wyllie, E. (Ed.). 1993. *The treatment of epilepsy: principles and practice*. Philadelphia: Lea & Febiger.

CEREBRAL PALSY

Written by **PAUL BOTHA**
Revised by **DEIRDRE KRÜGER**

Learning outcomes

After reading this chapter you should be able to

- ▶ define cerebral palsy and indicate causes
- ▶ explain the neurological levels of cerebral palsy
- ▶ understand the classifications of cerebral palsy
- ▶ display insight regarding assessment of intelligence of learners with cerebral palsy
- ▶ collaborate with the medical and paramedical teams
- ▶ understand the importance of assistive devices
- ▶ support learners with cerebral palsy in the classroom.

Key terms

cerebral palsy ♦ *physical impairments that are neurologically related* ♦ *brain damage* ♦ *paralysis* ♦ *weakness* ♦ *incoordination* ♦ *functional deviation of the motor system* ♦ *lesion to or inadequate development of a section of the brain* ♦ *neurological levels of cerebral palsy* ♦ *spasticity* ♦ *athetosis* ♦ *ataxia* ♦ *dyskinesia* ♦ *hypotonia* ♦ *assistive devices*

13C.1 INTRODUCTION

Cerebral palsy is one of the most common forms of physical impairments that is neurologically related and its incidence is about 1,5 to 3 births per thousand. Brett (1997: 291–292) is of the opinion that, until recently, the incidence was decreasing in view of the improved perinatal care in developed countries. According to Gupta (1999: 96) the increase nowadays is due to the improved survival of very low birth weight infants in industrialised countries. The prevalence of cerebral palsy in these infants is very high, and the

incidence of 2,2 per thousand births seems to be more accurate. There is no geographical or ethnic gradient. Physical impairments that are neurologically related indicate impairments resulting from the malfunction of some part of the central nervous system.

When looking at cerebral palsy, you may very well think that we are reverting to the medical deficit model. The medical terms that follow may create the impression that we are concentrating on disabilities instead of abilities.

On the other hand, if you are of the opinion that learners with cerebral palsy belong in a special school, then we should point out that you are in fact reverting to the medical deficit model, because learners with cerebral palsy can be included in general education. Teachers, however, need to be empowered to accommodate cerebral palsy successfully in their classrooms or learning sites. We are aware of the challenges that inclusive education poses to teachers and we agree with Wolford et al. (2001: 161) who claim that “the inclusion movement has greatly

increased another important type of diversity in the classroom – skill diversity”. The “skills diversity” refers to the skills of teachers. Becoming acquainted with the medical terms related to cerebral palsy will enhance your repertoire of skills, as better understanding will facilitate accommodation of learners with cerebral palsy in ordinary classrooms.

It is essential to acknowledge that the learners who are most vulnerable to barriers to learning and exclusion in South Africa are those who have historically been termed “learners with special educational needs”, i.e. learners with disabilities and impairments (Department of Education 2001: 18).

13C.2 DEFINITION AND CAUSES OF CEREBRAL PALSY

According to Lewis and Doorlag (1995: 74, 388), cerebral palsy is essentially a physical impairment. It is caused by factors which affect the not yet fully grown brain prior to or during birth, or during the early postnatal period. The impairment comprises one or more of the following characteristics: paralysis, weakness, incoordination and functional deviation of the motor system. Associated impairments – intellectual, convulsive, sensory, perceptual and affective – are common. Cerebral palsy may occur on a continuum from mild to severe. Cerebral palsy is permanent and the respected author of 35 publications, Glees (1988: 37), says that a spastic child (a form of cerebral palsy) with injuries suffered at birth will not regrow his cortico-spinal connections. In fact, the Christopher Reeve Paralysis Foundation (a merger between the Christopher Reeve Foundation and the American Paralysis Association in 1999) is currently engaged in exciting ground-breaking research that may change long-standing scientific findings.

The most workable definition (Brett 1997: 291) of cerebral palsy is “a persistent, but not necessarily unchanging, disorder of movement and posture due to non-progressive disorder of the immature brain”. The motor function is not only delayed, it is also deviant and follows a pattern that is not found among normally developing children. Definitions attributing an age limit to cerebral palsy,

such as the first two or three years, are outdated, since the complete clinical picture may manifest only after the age of three years.

It has already become apparent that there is more than one definition but a suitable definition should comprise the following three core aspects:

- A lesion to or inadequate development of a section of the brain before the brain is fully grown
- Perceptible signs of the motor system being affected owing to the lesion or to inadequate development
- Varying degrees of severity (from mild to profound) in the manifestation of the impairment

Since the brain is the centre of control, not only of the motor system but of many other functions such as intelligence, behaviour and personality, and since brain damage may also result in epilepsy, blindness, deafness, intellectual impairment and learning impairment, one would expect to find that multiple impairments are often associated with cerebral palsy. The learner who is *primarily* cerebral palsied may have any number of secondary impairments, such as being hard of hearing, blind, etc.

Batshaw (1997: 499) indicates several factors causing cerebral palsy, such as genetic abnormalities contributing to brain malformation in the early stages of embryonic development, intrauterine infections damaging the developing nervous system of the foetus, pregnancy-related abnormalities that may lead to preterm delivery and related complications, adverse conditions during labour and delivery that deprive the vulnerable areas of the immature brain of oxygen and blood, as well as traumatic brain injury in a car accident. Near-drownings that are common in South Africa due to our sunny climate and abundance of swimming pools and open dams also contribute to cerebral palsy.

One finds learners who have sustained brain damage due to trauma such as a motor vehicle accident or a viral infection of the brain such as encephalitis or meningitis, who have been diagnosed as cerebral palsied. Some such learners may be past the stage of “the not-fully-grown brain”; for instance some of them may already be ten years old or more when the brain is damaged

and they develop symptoms normally associated with cerebral palsy. As is the case with most learners who become impaired at a later stage (i.e. after having acquired language and the brain being fully grown), the pattern of problems in these learners differs somewhat and the chances of recovery – especially in the first two years following the trauma – are also much more favourable. They, however, will not be discussed as a separate group in this chapter.

Although the word “palsy” signifies some form of paralysis, this is not, strictly speaking, true in the case of children with cerebral palsy. The cause of cerebral palsy does not lie in spinal damage or in damage to a specific muscle group, but in a lesion or mal-development of the motor control system of the brain.

Additionally one finds manifestations of the condition in areas which are not related to motor activities, such as language development, perception, memory, thought and the emotions. These manifestations are also caused by the dysfunction of parts of the central nervous system.

Can you still remember which lobe of the brain is involved with motor functions? (Refer to Chapter 12 if you have forgotten.) Are there other structures in the brain that are also involved with motor functions? Can you name these structures and their functions?

The frontal lobe is primarily involved with motor functioning and one can expect that damage to the cortex of the frontal lobe may result in a form of cerebral palsy. Other structures that are also involved with motor functioning comprise the basal ganglia and the cerebellum. Although this is an oversimplification of the various forms of cerebral palsy, you have already some background knowledge for the following section.

ACTIVITY

13C.3 THE NEUROLOGICAL LEVELS OF CEREBRAL PALSY

Figure 13C.1 represents, diagrammatically, the three functional levels of the brain that are fairly generally accepted as being involved in the three

main types of cerebral palsy: spasticity, athetosis and ataxia. These three levels are respectively the cortex (cerebral cortex), the basal ganglia and the cerebellum. In spasticity the parts of the cortex involved (the pyramidal system) are often associated in particular with the various motor areas. Athetosis is shown as the result of injuries in the extrapyramidal system, especially damage to the basal ganglia and their connections; and ataxia as the result of injuries to the cerebellum.

It is incorrect to ascribe spasticity to injuries to the pyramidal system alone, for spasticity cannot occur without involvement of the extrapyramidal system. In fact, it is the very involvement of the extrapyramidal system, together with cortical damage, that results in the typical symptoms of spasticity. The above-named “levels” are thus highly simplified, but they serve a purpose in that they help us to distinguish more easily between the three types of cerebral palsy.

13C.4 CLASSIFICATIONS OF CEREBRAL PALSY

There are various classifications of the symptoms of cerebral palsy, but only two will be discussed here, namely the *physiological* (according to the motor symptoms that are present) and the *topographical* (according to the parts of the body motorially affected).

13C.4.1 The topographical classification system

Before the physiological classification is discussed in more detail, a few remarks will be made on the topographical classification (according to the parts affected). This is necessary as a combination of the two systems is often used in practice, e.g. by referring to spastic hemiplegia.

The following types are distinguished here:

- **Monoplegia.** One limb is affected – the left or right arm or leg. Care must be taken to ascertain whether it is not perhaps a hemiplegia where the other limb concerned has only been slightly affected. A pure monoplegia is rare.
- **Hemiplegia.** The left or the right side of the body (arm, leg and face) is affected. This usually occurs in spasticity, which we refer to as left-

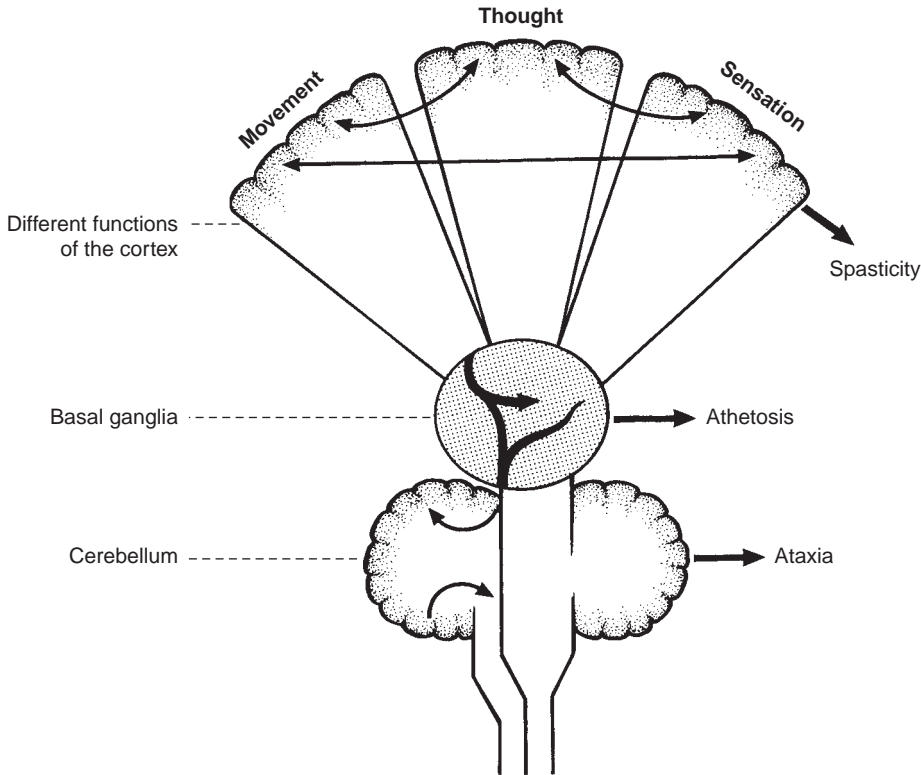


Figure 13C.1 Diagram showing the three functional levels of the brain and the types of cerebral palsy caused by damage to each of these three levels

Source: Kapp 1994: 272

- or right-sided hemiplegia. In such cases, the arm is usually affected more than the leg.
- **Triplegia.** Three limbs are affected – usually both legs and one arm. This occurs mainly in spasticity. It can be a combination of hemiplegia and “paraplegia”, or an incomplete quadriplegia. (It would have been more correct, however, to say a combination of diplegia and hemiplegia.)
 - **Quadriplegia.** All four limbs are affected (this is also known as tetraplegia). In cases of severe involvement, one often finds spasticity in the lower and athetosis in the upper limbs.
 - **Diplegia.** Usually all four limbs are affected, with the worst involvement being in the lower limbs. This term is used quite often. A similar type is double or bilateral hemiplegia, which is also a form of spasticity, but the upper limbs are worse than the lower.

- **Paraplegia.** Both the lower limbs (legs) are affected, but not the upper limbs.

Note: Some of the above forms of impairment are also found in people who are not cerebral palsied, for instance those with injuries to the spinal cord or neck. It is therefore better in the case of those with cerebral palsy to refer instead to spastic paraplegics, spastic quadriplegics and so forth, to avoid confusion.

ACTIVITY

The *Education White Paper 6* (Department of Education 2001: 18) indicates that different learning needs arise from a range of factors, including physical impairments, of which cerebral palsy forms part. Other learning needs may also arise because of certain factors. Simply by looking at the various descriptions of cerebral palsy men-

tioned above, what factor can cause a barrier to learning? If you do not know all the factors, just use your common sense and formulate your answer.

We think that the most obvious barrier is buildings that are inaccessible and unsafe. There are a variety of assistive devices for learners whose movements are impaired that will be discussed later in this chapter. A wheelchair will most probably come to your mind. Stairs and a wheelchair, of course, do not go together.

13C.4.2 The physiological classification system

The physiological classification system is also referred to as the motoric classification. The following types are distinguished:

13C.4.2.1 Spasticity

Spasticity is a condition of disharmonic muscle activity caused by damage to the motor areas of the brain – involving the pyramidal and extrapyramidal systems. The clinical picture is mainly one of stiffness. This is the result of impairment of the normal muscle tone of the person who is spastic. Spasticity is a form of hyper tonus resulting from the exaggeration of the normal stretch reflex. This refers to exaggerated muscular contraction when a muscle is stretched. Consequently an increased resistance to passive movement – mainly to movement in one direction – is characteristic of spasticity. There is increased muscle tone in the spastic muscles, accompanied by weakness in the muscles that act in opposition to them. The hyperactive stretch reflex is particularly noticeable in the muscles working against the force of gravity in maintaining normal body posture.

Spasticity can be regarded as the main form of cerebral palsy. It is the most common type and it usually assumes the form of hemiplegia, either right-sided or left-sided, according to whether the left or right side of the brain is affected. (The motor manifestations are on the side of the body opposite to the damaged side of the brain.)

Voluntary muscle control, especially in the more delicate and selective movements, is seriously impaired, and movements that can still be made are clumsy. The hyperactive stretch reflex and reduced contraction speed impede coordinated movements. Some muscles show a tendency to contract more than others, and because the antagonistic muscles have often been weakened, the spastic muscles (agonistic) are permanently shortened, resulting in contractures. The resulting physical defects are a typical flexive deformity, particularly involving the big joints.

Typical characteristics of a spastic person include flexion in the wrist and elbow so that the lower arm is bent up stiffly against the upper arm (like a chicken wing); adduction (turning inward) of the arm at the shoulder; adduction and flexion of the hip; flexion of the knee and equinus (raised heel) in the foot. The limbs in which the muscles are shortened are consequently shorter than the others, e.g. in stretching the arms above the head, the arm of the affected side is found to be shorter than the other. In the identification of a mild case of spasticity this can be used as a test. An arm stiffly drawn up can be straightened if someone else pulls on it, but it returns to its flexed position soon after it has been released. A very typical phenomenon is the “cerebral thumb”: the thumb is folded into the palm (i.e. “thumb in palm”) with the other fingers clasped over it (see Figure 13C.2). Another typical symptom that may be found is the scissors gait owing to adduction of the hips and flexion of the knees, particularly in diplegia.

Why would you say a spastic learner sometimes exhibits speech problems? What barrier to learning according to the *Education White Paper 6* will apply in this instance if the speech problems are not accommodated?

Speech involves muscles that coordinate the articulation of sounds. (Chapter 9 on augmentative and alternative communication provides information on speech problems.)

The barrier will be “inappropriate communication” if the learner is not accommodated by means of augmentative and alternative communication.

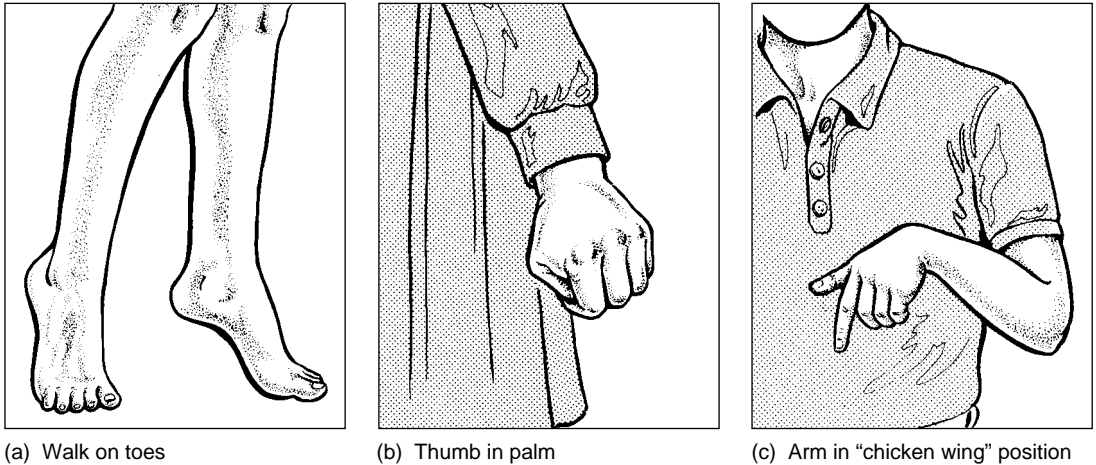


Figure 13C.2 Typical manifestations of spasticity

Source: Kapp 1994: 275

Primitive and pathological reflexes are very common in spasticity. These deviant reflexes are not discussed further. Their presence, however, is often a clear indication to the medical practitioner that a child has neural damage (Pellegrino in Batshaw 1997: 504–508).

13C.4.2.2 Dyskinesia

Dyskinesia is marked by any of the following abnormal movements:

Athetosis

Athetosis is the form of dyskinesia most often seen, hence the use of the term “athetoid CP” as an alternative to the more general expression “dyskinetic” (Brett 1997: 307). It is marked by excessive involuntary movements following no fixed pattern and described as irregular, arrhythmic wriggling and writhing. These movements are usually slow. As a rule the condition affects the movements of the body as a whole but is more pronounced at the extremities. The deliberate use of the limbs, especially of the hands, is seriously impaired or even impossible because of the unceasing involuntary and uncontrollable movements, which are further aggravated when the person tries to perform voluntary movements.

The muscles of the face are usually distorted. Involuntary movements of the face, tongue and

throat often impede speech, as do chewing and swallowing movements, which make feeding difficult. Speech is usually impaired to some extent. The postural problems caused by the uncontrolled movements in athetosis hamper sitting and walking. During sleep, when there is complete relaxation, the involuntary movements subside and may even stop altogether. In contrast, tension and emotional conditions aggravate the symptoms while the learner is awake.

In pure athetosis the muscles themselves are usually normal, with no spasticity or weakness. Pure athetosis is found very infrequently, however. In most cases the muscles are continually extremely hypertonic. This is called tension athetosis, which is often difficult to distinguish from spasticity. Sometimes the tension is so bad that the person is completely incapable of movement. Athetosis is therefore divided into two broad categories: cases with and cases without muscle tension. Some writers classify it into two types according to the nature of the movements: tremor and rotatory athetosis. The latter exhibits turning movements and the former jerky or to-and-fro movements.

Choreiform movements

Sudden jerking movements are most marked in the proximal (closer to the body) parts of the limbs. (“Chorea” means a dance.)

Dystonia

The term “dystonia” is sometimes used for slow movements with extension of the trunk and limbs, and sometimes for abnormal postures which are maintained briefly (Brett 1997: 307). This basal ganglia disorder is usually associated with contorted body positioning.

Choreo-athetosis

Athetosis (slow and purposeless movements mainly in the distal part – closer to the end – of the limbs) is mixed with choreoid movements (which are quicker and more jerky). In nearly all cases of choreo-athetosis the cause is to be found in hyperbilirubinemia¹ (although the highest levels can nowadays usually be prevented – Brett 1997: 306) or in anoxia at birth in which Rh-incompatibility is the main feature. Athetosis resulting from this is usually accompanied by a high-frequency hearing loss and a defect of upward gaze.

13C.4.2.3 Hypotonia

Hypotonia refers to a decrease in muscle tone and is characterised by decreased resistance to passive movement. The joints offer decreased resistance when they are flexed and abnormal movements are possible.

13C.4.2.4 Ataxia

Ataxia is characterised by poor coordination, usually attributed to disturbances of balance, body posture and kinaesthetic feedback processes. It is accompanied by an inability to maintain balance, associated with lack of gross and/or fine motor coordination or clumsiness. The muscles of the person with ataxia are normal, though the muscle tone may be lowered, but there is no spasticity or involuntary movements, and reflexes are normal. This makes the disorder very difficult to diagnose in a baby before he begins to walk (bears weight).

The main symptom, however, remains lack of coordination. The coordinated smooth performance of voluntary movements is dependent on the intact operation of the cerebellum. Thus in ataxia one may find all the signs of cerebellar disturbance: dysmetria, adiadochokinesis, etc.

Impaired coordination causes clumsiness in the

learner when he plays or tries to do anything. Imbalance of the eye muscles which makes reading difficult often occurs and typically slurred speech is possible. Intention tremor is also common. His high-stepping gait is often compared to that of a drunken person.

The condition of some learners with ataxia improves spontaneously and some of them may later even be able to develop normal neuromuscular functions. Fortunately severe cases of ataxia are rare.

13C.4.2.5 Mixed types

Certain learners with cerebral palsy display symptoms of more than one type of this condition. The term “mixed types” is used when more than one type of motor pattern is present and should be used only when one pattern does not clearly predominate (Batshaw 1997: 503).

13C.4.2.6 Summary of barriers arising from cerebral palsy

Impeded motor function in the learners has severe implications for their education: for writing (hence for written communication) if the arms and hand muscles are affected; for speech, if the mouth, chewing and swallowing muscles, and also control of exhalation are affected; and for vision, if affected eye muscles impede focusing or eye movement. Affected facial muscles causing constant grimacing have severe implications for socialisation. When muscles are affected which control posture, sitting and gait, the condition impedes effective performance of daily activities such as self-care, e.g. independent eating, washing, bathing, dressing and using the toilet. Persons who are clumsy, inept and untidy are unacceptable to others. As a result their self-concept suffers and eventually this also affects their acceptability both as an employee and by society in general. According to Brett (1997: 308) these implications culminate in the “stereotyped image which most members of the public have of the ‘spastic’ and retarded child. Thus feelings of repugnance and rejection are generated in those on whose tolerance and acceptance these very handicapped children depend in all aspects of living.”

Which barrier to learning according to the *Education White Paper 6* will apply to Brett's remark?

The barrier is "negative attitudes to and stereotyping of differences".

13C.5 CEREBRAL PALSY AND ASSESSMENT OF INTELLIGENCE

Although there is the common misconception that people who suffer from cerebral palsy automatically have a lowered intellect, as pointed out above, this is not true. Murphy et al. (1995: 1075–1084) indicate that about 40 per cent of the individuals who have cerebral palsy have typical intelligence just like people without cerebral palsy.

Various authors have serious concerns about intelligence tests (or IQ tests) as a means of determining the intelligence of people with cerebral palsy (Roberts 1995: 377–379; Brett 1997: 308; Culatta et al. 2003: 339). Problems with, *inter alia*, speech, coordination, speed and perception influence test results negatively. "Given these difficulties, it is not surprising that systematic neuropsychological studies have generally not been done" (Roberts 1995: 378).

Therefore assessment in the classroom to determine the learner's academic abilities by a teacher who knows the learner may be of great value both to him and to the teacher.

13C.6 MEDICAL AND PARAMEDICAL TREATMENT

The medical programme in question includes surgical, paediatric and neurological treatment such as orthopaedic operations (for shortening, length-

ening or replacing muscles, as the case may be); supplying prosthetic aids (crutches, callipers, walkers, splints, built-up shoes, etc.); administering sedatives or stimulants, anticonvulsive drugs, etc. In addition, medical personnel carry out a detailed diagnosis of the type of cerebral palsy involved, examine the functioning of the nervous system and investigate the presence or effect of any associated impairments or likely genetic factors.

The teacher should become at least broadly acquainted with the medical programmes of the learner/s under his care. Teachers play an indirect part in that they prepare and support the learners who need to undergo operations, and visit them in hospital or at home; they also observe the learner's behaviour after medication has been administered or changed, etc.

Teachers are not always directly involved in the paramedical (therapeutic) programme but here, too, it is strongly recommended that they take a more active interest and cooperate more fully. They could then implement the speech therapy programme in the classroom, encourage the learner to use his affected limbs in a supportive role and to use hand splints to improve pencil control. They could see to the correct positioning of the learner in the classroom; help the learner to use head pointers in painting or typing; ensure regular use of prescribed prostheses in the classroom or on the playground; encourage relaxation of an arm in a state of flexion, etc. The committed teacher will constantly be aware of the therapy administered by the physiotherapist, speech therapist and occupational therapist – not merely in order to show his involvement in the learner's welfare, but to ensure that the therapeutic programme is carried over into the classroom.

See if you can list all the assistive devices that are available for learners with cerebral palsy.

There are various aids available for the learner with cerebral palsy which, *inter alia*, include

- walking frames (which today have wheels and brakes)
- crutches (which can also be specially adapted to meet the person's needs)
- walking sticks
- wheelchairs – ordinary as well as motorised
- head pointers, particularly for quadriplegics, which can perform the function of hands
- splints and braces (day and night braces can differ) which support limbs and facilitate functions (a wide variety of splints and braces can include thumb and wrist braces, as well as knee-positioning splints and braces for back support)

- adapted computer, mouse and keyboard
- voice- or eye-activated computer programs – technology has a lot more to offer
- diapers for incontinence
- boots (sometimes also worn at night) and other orthopaedic footwear
- specially designed crockery and cutlery
- a variety of specially designed pillows, e.g. an abduction pillow for hip abduction
- adapted toilets and bathrooms with enough space and levers or clips that are easy to operate
- commodes
- working dogs (although not yet common in South Africa)
- communication boards (for those who cannot speak or who speak with difficulty) (Consult Chapter 9 for an extensive discussion on augmentative and alternative communication which applies to this section.)
- non-slippery floors, rails and ramps.

Take note that you can improvise various types of assistive devices, e.g. a piece of Velcro to hold something, e.g. a book, in place.

How can you as a teacher help to make life easier for learners in wheelchairs?

- Make sure that the entrance to your classroom is wheelchair-friendly. If necessary, a ramp should be built. The same applies to bathroom facilities and other places that learners use frequently, such as the school hall.
- Make sure there is enough room for the wheelchair to move in the area between desks. Remind other learners to keep their bags out of the way.
- Position the learner at the front of the class (closest to the door) to save time.
- Provide washing facilities if the learner's hands get dirty from the wheelchair wheels – a container with water, soap and a towel if there is no basin.
- Appoint a buddy (or more than one) to help the learner, e.g. by carrying his schoolbag or getting out books for class.
- Include the learner in activities. Use his strong points. If, for instance, the learner is a good reader, he can read aloud in class.
- Make sure that the learner is comfortable in the wheelchair and if he has any orthopaedic aids such as braces, he should also be comfortable with them. Pinching braces can cause severe pain. The school desk should be the correct height, or perhaps you should have a bookstand made. The technical design teacher could help with this.
- If the wheelchair is not in a good working order, discuss this with the parents or maybe try to get help from the community.
- With the learner's permission, explain to the class why he is in a wheelchair; this can be a good learning exercise for you and the other learners, and can also help the learner to fit in and be accepted in the classroom.
- See that the learner is assisted to and from his point of transport. This applies before and after school.
- Since learners in wheelchairs often feel excluded and different, it is important to make sure that they have a positive self-image. A sympathetic teacher can play a big role in their socialisation.

It is impossible to include all requirements in one list, and you as the teacher will become aware of the individual learner's changing needs and provide for them accordingly (Krüger & Groenewald 2004a: 10). Collaboration with the school-based support team and the district-based support team as discussed in Chapter 4 may also be valuable.

13C.7 CLASSROOM SUPPORT FOR LEARNERS WITH CEREBRAL PALSY

Krüger and Groenewald (2004a: 13–14) suggest the following support:

- Firstly, it is essential to adjust the curriculum regarding the volume of work. If learners write slowly they should not have to do all the written homework, as long as they can prove that they have mastered the work.
- Use alternative methods. If the learner writes very untidily, a typewriter or, ideally, a notebook (computer) could be used. If there is no way to avoid writing, the writer who is untidy or makes a lot of mistakes could use a pencil so that it can be erased.
- If the learner has difficulty moving the computer mouse, a mouthpiece can be used for this purpose. Nowadays a foot mouse or even a head movement image-controlled computer mouse is also available.
- If the learner has special aids such as hand braces (to improve fine motor coordination) or head pointers (for typing), the teacher should also be familiar with them and comfortable with using them. If you have worn a brace after an injury, you will know that, although it might look odd to others, it plays a very useful role. It is also important that the rest of the class should be informed about these aids and that they understand what they are for.
- If learners have occupational therapy, physiotherapy and/or speech therapy, you are welcome to cooperate with these professionals and find out to what extent you can meet the learner's needs in your classroom. Even for something as simple as posture, the physiotherapist or occupational therapist can give you advice and guidance.
- You can also help learners to relax the spastic limb by teaching them to massage it. When you walk round the class, for example, you can rub or stroke the learner's spastic hand. (Male teachers should use discretion with female adolescents.)
- Make sure that the learner can move around the class and reach his desk easily. If necessary he can sit at the front of the class, near the door.
- Plan the learner's workstation so that it is functional. If possible, the learner should have a special table equipped for his needs. If the learner does not have the luxury of a special workstation, the other learners can help to set up the table quickly for that learner, for example by unpacking books and pens and turning to the right place, as well as setting up any aids e.g. bookstands.
- The other learners should also be taught to help these learners on the playground. If a learner has difficulty getting his food out of his lunch box or opening a can of cold drink, they should help. At the same time they should also use discretion and not take away the learner's autonomy. It could be embarrassing if they do things that he could do quite easily without help.
- Try to help the learner to think practically and to get things done as quickly as possible. For example, show him short cuts to get to places more quickly, or point out where there are handrails for support. You might, for instance, put a piece of rubber under a textbook so that it does not move around if the affected arm cannot hold it properly.
- There is a lot more support that you can provide to be found elsewhere in the other chapters, such as the use of a cassette tape or the allocation of extra time for written work.

ACTIVITY

How will you explain the concept of cerebral palsy to adolescent learners? This is an important aspect of educating the rest of the learners to include their classmate with cerebral palsy in their circle of friends. It is so much easier if they have the basic knowledge underlying the condition.

Try to find something that relates to their world, such as the following:

When some people have had too much alcohol, they no longer walk normally. They lift their feet too high. Others have difficulty talking properly – for example, they slur their words and cannot pronounce things correctly. Sometimes they slam things down, because they

have trouble judging distance – the table top, for instance, is closer than it seems, so they put down the glass too heavily. These symptoms are temporary and disappear when that person sobers up. If you think we're going to talk about the abuse of alcohol, however, you're wrong. But we are going to talk about something that has to do with the brain. In the same way that alcohol impairs the way our brain functions temporarily, so cerebral palsy can permanently impair people's brain functions. (The brain is also known as the *cerebrum*, which is where we get the term *cerebral*.) Just as someone who has been drinking has trouble keeping his balance, this is equally difficult for some people with cerebral palsy.

There are different kinds of cerebral palsy and you will recognise the forms when we discuss them. The first common kind is spasticity. Many people are either born with brain damage which is associated with spasticity, or it can emerge after a car accident. One obvious characteristic of spasticity is increased muscle tone (the muscles are taut), which is particularly obvious at the elbow – the so-called chicken-wing arm. The thumb is also often folded into the palm of the hand and the wrist bends towards the body. The heel muscles may also be shortened and the person consequently walks on his toes. The knee could also be bent. Spasticity is a very common form of cerebral palsy and it often occurs on one side of the body only. This is known as hemiplegia. If the left side is affected, it is known as left hemiplegia and if the person's right side is affected we refer to them as a right hemiplegic. The degree of spasticity can also range from mild to severe.

We often make the mistake of thinking that people who are spastic are also less intelligent. It all depends on the extent of the brain damage. It is important to remember that someone's appearance does not reflect his intelligence. A person who dresses in the latest fashions and is very well groomed is not necessarily intelligent. Similarly, someone who looks different physically is not necessarily unintelligent.

But we have not yet discussed the kind of cerebral palsy that corresponds to the temporary malfunctioning of the brain when someone has had too much to drink. A person who drinks too much alcohol can show temporary symptoms that correspond to ataxia, a form of cerebral palsy. Just as alcohol affects brain functions temporarily, so people who are ataxic have problems with certain brain functions. They have most difficulty with balance, poor coordination and clumsiness. They also have difficulty gauging the dimension of their movements and experience problems with tasks of a rhythmic nature. Imbalance of the eye muscles can make reading difficult and speech is often slurred. Sometimes they tremble, especially when they are concentrating hard on a task. When they write this trembling will be reflected in their writing (Krüger & Groenewald 2004b: 14–15).

How will you address learners to educate them to support their fellow learners with cerebral palsy?

Now what can you do for someone with cerebral palsy? In the first place, you can be sympathetic. If you want, you can help him with written work because such people usually write more slowly and not always very neatly. For example, you could simply use carbon paper in your book and share your class notes with him. Or you could take on responsibility for at least one subject and see that all written work is copied. (Many schools have photostat machines.) Otherwise you could carry his school bag or help to unpack books and open them at the right place. Even turning pages can be difficult and time-consuming for someone who has trouble with coordination. There are many ways to make life easier for such a person. Even if you just help to open a can of cold drink or unwrap a chocolate. But most important of all is that you accept the person. There is no greater gift that you can give someone than to accept him for what he is. You would like to be accepted for who and what you are. So would other people (Krüger & Groenewald 2004b: 15).

13C.8 CONCLUSION

The teacher forms part of a team which assists in executing and applying a trans-disciplinary individualised educational programme. Owing to the individualised and complex problems of some of the learners with cerebral palsy, the teacher has to rely on inputs from a wide range of other disciplines. The expert contributions of such people are indispensable to the teacher who intends to execute his task with any significance.

Questions

1. Discuss the “neurological levels” of cerebral palsy. You must also indicate the symptoms of the various types of cerebral palsy that are associated with each level.
2. You receive a report from a local psychologist and she indicates the learner’s IQ score as low-average on an IQ test that is not adapted for the needs of learners with cerebral palsy. What will your reaction be?

Bibliography

- Batshaw, M.L. (Ed.). 1997. *Children with disabilities*, 4th ed. Baltimore: Paul H. Brookes.
- Brett, E.M. (Ed.). 1997. *Paediatric neurology*, 3rd ed. New York: Churchill Livingstone.
- Christopher Reeve Paralysis Foundation. Available at: <http://www.apacure.com> (accessed on May 2003)
- Culatta, R.A., Tompkins, J.R. & Werts, M.G. 2003. *Funda-*

mentals of special education – what every teacher needs to know, 2nd ed. New Jersey: Merrill Prentice Hall.

Department of Education. 2001. *Education White Paper 6. Special Needs Education: building an inclusive education and training system*. Pretoria: Government Printer.

Glees, P. 1988. *The human brain*. Cambridge: Cambridge University Press.

Gupta, V.B. 1999. *Manual of developmental and behavioral problems in children*. New York: Marcel Dekker.

Kapp, J.A. (Ed.). 1994. *Children with problems: an orthopedagogical perspective*. Pretoria: J.L. van Schaik.

Krüger, D. & Groenewald, S. 2004a. *A practical guide for educators to accommodate diversities in inclusive education – secondary schools and colleges*. Bapsfontein: OBE Publishers.

Krüger, D. & Groenewald, S. 2004b. *A practical guide for learners to accommodate diversities in inclusive education – secondary schools and colleges*. Bapsfontein: OBE Publishers.

Lewis, R.B. & Doorlag, D.H. 1995. *Teaching special students in the mainstream*, 4th ed. Upper Saddle River, NJ: Prentice Hall.

Murphy, K.P., Molnar, G.E. & Lankasky, K. 1995. Medical and functional status of adults with cerebral palsy. *Developmental Medicine and Child Neurology*, 37: 1075–1084.

Roberts, M.C. (Ed.). 1995. *Handbook of pediatric psychology*, 2nd ed. New York: The Guilford Press.

Wolford, P.L., Heward, W.L. & Alber, S.R. 2001. Teaching middle school students with learning disabilities to recruit peer assistance during cooperative learning group activities. *Learning Disabilities Research and Practice*, 16(3): 161–173.

Notes

- 1 Hyperbilirubinemia: excess accumulation of bilirubin in the blood

SKELETAL AND MUSCULAR IMPAIRMENT

13^D

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Learning outcomes

After reading this chapter you should be able to

- ▶ relate the impairments in this chapter to physical impairments of the skeleton and muscles as opposed to physical impairments that are neurologically related
- ▶ accommodate needs of learners with amputations
- ▶ understand agenesis, deformed limbs and arthrogyposis
- ▶ know what the condition “osteogenesis imperfecta” comprises
- ▶ deal with the needs arising from burn lesions
- ▶ know that various illnesses may also cause physical impairment
- ▶ support learners with physical impairment.

Key terms

amputations ♦ *prostheses* ♦ *agenesis* ♦ *deformed limbs* ♦ *arthrogryposis* ♦ *osteogenesis imperfecta* ♦ *burn lesions* ♦ *Marfan syndrome* ♦ *Perthe's disease* ♦ *Scheuermann's disease*

13D.1 INTRODUCTION

Physical impairments of the skeleton and muscle systems imply that the muscles and skeleton are affected. It is usually the limb or limbs, the spinal column or specific muscles which are damaged. Learners with a physical impairment of the skeleton and muscular system may experience problems in walking, standing, sitting or using their hands. The causes of physical impairment of the skeleton and muscle systems are divergent. They may be the result of genetic factors, developmental problems, illnesses or accidents.

Do you think that the learning support for learners with physical impairments that affect the skeleton and muscles will differ from those with physical impairments that are neurologically related? Keep the following sentence from the introduction in mind: *These learners may experience problems in walking, standing, sitting or using their hands.* Motivate your answer.

Bear in mind that the various sub-chapters of Chapter 13, i.e. Chapters 13A to 13E, form a whole. Therefore one will find much overlapping with regard to general learning support which will not be repeated in this chapter. However, each particular physical impairment and perhaps every learner with that particular impairment may require adjustments to the general support.

ACTIVITY

13D.2 AMPUTATIONS

The amputation or partial amputation of a limb is brought about either by an accident, or by surgery necessitated by a serious illness such as cancer or an infectious condition.

The amputation causes serious physical problems. If the legs are amputated it holds implications for the learner's mobility. If the arms are amputated, problems occur with activities involving hand skills. If the dominant arm is amputated, problems with the learner's writing as well as with other fine motor skills occur.

ACTIVITY

A toe or a finger is such a small part of the body. Do you think that the amputation of a big toe or a thumb can cause serious problems?

Although they are small parts of the body, they fulfil most valuable functions. The big toe is, *inter alia*, involved with balancing the body, and the thumb ensures the ability to hold things as it forms a vital part of the grip. Any amputation may also have a serious impact on the learner's psychological functioning.

These learners must often make use of prostheses. Prostheses are not immediately available because they must be designed for a specific person. Exhausting fittings are often involved. The stump onto which the prosthesis must fit also changes considerably due to shrinkage or the formation of connective tissue over the lesion. Consequently adjustments have constantly to be made to the prosthesis. A poorly fitting prosthesis may cause severe pressure sores. Because children are still growing, the prostheses must often be replaced or altered. A prosthesis is a particularly expensive apparatus. It is not easy to manage and long training sessions are often required. Especially with the upper limbs, learners must first learn by practising with an apparatus which resembles a hook and which opens and closes like

a pair of pliers. Thereafter, these movements are refined and only later will the learner get a prosthesis which resembles a hand. For most learners it is disappointingly difficult to handle the prosthesis. They may accept it with difficulty, especially the one they practise with, and may even reject it. On the other hand, a person like the swimmer Natalie du Toit, who lost part of one leg when she was involved in a scooter accident on the way to school, has overcome great obstacles.

Together with the technological knowledge explosion, prostheses have also improved. Biomedical prosthetic devices are artificial replacements that are used in the human body to function as original parts. Materials used for such prosthetic aids must be non-toxic, biologically and chemically stable, and have sufficient mechanical integrity and strength to withstand physiological loads. The rehabilitation industry is moving towards composite materials, as they are lighter in weight, easier to work with and more durable. As a lighter prosthesis requires less energy expenditure during walking, running and other activities, weight is extremely important in an artificial leg. A lighter prosthesis also reduces the shear forces and pistoning motion about the residual limb/stump. The reduction of weight results in a more comfortably fitting prosthesis. In addition, the reduction of weight eliminates the need for auxiliary suspension straps and waist belts. Over the past 20 years, with the rapid development of new plastics and metal alloys such as copolymer, titanium etc., there have been significant efforts to make lighter and stronger products (Mittal et al. 2001).

Amputations have serious psychosocial implications for children. They must learn to live with and accept the disfigurement of their bodies. There are also many problems relating to the acceptance and use of a prosthesis which they must deal with. Furthermore, they must realise that there are many things they can no longer do. They also lose much of their independence (to a greater or lesser degree) and they have to adjust to living with others as one who is impaired.

A learner with a hand injury – sustained after a mud wall collapsed, partly crushing her hand – returns to your class. She wears an elaborate splint with small trellises to which rubber bands are attached in order to stretch the remaining fingers (two fingers were amputated). Your Grade 7 learners try to be polite and pretend that they do not notice it because the

learner is self-conscious about the splint and wraps her school jersey around the contraption. How will you deal with it?

You can leave the learner for a day or two with the jersey wrapped around the splint, so that she can orientate herself in her school environment. You have already taken care of her needs on the first day, i.e. welcomed her back to the class, arranged for extra tuition time so that she can catch up on her work, appointed her best friend as buddy to assist her (she only has the use of one hand), ensured that she is comfortably seated so that she does not bump the hand unnecessarily (hand injuries are extremely painful because of all the nerve endings) and informed her that she may work at a pace suitable for her (she may tire easily at first, and the use of only one hand may also slow her down) as well as devised a weight to hold her book in place while she is writing. Although you have also encouraged her to elevate the hand because it eases the pain, you notice that she does not follow your advice, most probably for fear of drawing attention to it.

When you feel that the time is right, speak to the learner in private. Ask her how she is fitting in in class after her return. Tell her that you have noticed the jersey around the splint and ask if there is a particular reason for it. Ask her if you may discuss her injury in class and if she will perhaps be willing to show the splint to the class. (She may cover it afterwards again with the jersey.) Reassure her that you and the other learners in class think highly of her, and that all of you feel awkward in a way because you want to make things easier for her, but you do not really know how to deal with it. Perhaps she can share some of her needs, either in person with the class or through you, if she consents. Mention that it is also a learning experience for you and the class and that you want to make the most of it. If she hesitates, grant her time to think about your suggestion. (Remember that she is in a sensitive early adolescent phase.) Enquire about the extent of recovery to her hand, whether it is still swollen (which will most probably be the case) or bruised. Acknowledge that it does take time to get used to an altered limb and that you can imagine that she may have questions about her hand's future functionality.

If she does not consent to sharing her injury with the class, you have to respect her wishes and continue to render support as usual. If she is cooperative and if she has uncertainties, for instance about the mechanism of the splint – perhaps time was not taken to explain that the stretching (extension) of the fingers is to avoid contractures – you can contact the occupational therapist to find answers which you will then share with her. People in the medical profession sometimes forget how important it is to keep their patients informed about what is happening to their bodies, or sometimes they use medical terms which ordinary members of the public cannot understand. (Remember that you must also keep your explanation simple, because you are also now becoming familiar with medical terms. You will, for instance, not use the word “contractures” but explain it as the shortening of muscle fibres at the joints of her fingers that will decrease the mobility of the joints.)

13D.3 AGENESIS AND DEFORMED LIMBS

Children may also be born without a limb or a part of a limb. This is called agenesis or sometimes congenital amputation. The part of a limb which is present may also be deformed. It is assumed that the loss of the limb is the result of a problem which originated during the first three months of pregnancy.

Two types of agenesis occur. One type resembles a traumatic amputation where, for example, the whole arm may be missing, or the section

from the elbow downwards or only the hand (there may, however, be a rudimentary finger or toe on the stump). In the other type, a midsection of the limb may be missing. The hand, for example, appears on the shoulder or the elbow. This type is also called “flipping” because it is reminiscent of the flippers of a seal.

These learners often require prostheses, especially when the condition resembles a traumatic amputation. Where a prosthesis is necessary it is

advisable to attach an appendage to the stump shortly after birth so that the child learns to live with the weight on the limb and learns to accept it as part of himself. This makes using and accepting the prosthesis so much easier. Sometimes it is also necessary to amputate a malformed, useless part of a limb in order to put the child in a position to work with a prosthesis. As in the case of traumatic amputations, there are many problems regarding the use of a prosthesis. Sometimes the children have learned to cope without it so well that they use and accept it only with great difficulty. The older they get, however, the more they are able to do if they use the prosthesis.

These learners experience many problems with mobility if the agenesis is in the lower limbs, and with manual skills and writing if the agenesis is in the upper limbs. Their intelligence is usually normal. Teaching and therapy are aimed at guiding these learners to grow up as independently as possible and to take their place in society and in the labour market.

13D.4 ARTHROGRYPOSIS

Arthrogryposis, also called congenital multiple contractures, is an abnormality where a child is born with stiff joints and weak muscles. Typical of the deformity is that the joints are curved. Arthrogryposis appears sporadically and the cause of the impairment is unknown. It occurs early on in the foetal stage, and stiffness and malformation of the joints are observable from birth (Batshaw 1997: 815).

The affected child often has the appearance of a wooden marionette. The shoulders are curved forward, the elbows are straight and the forearms are turned with the palms of the hands facing inwards. The wrists are curved and turned to the inside. The hips curve upwards and turn outwards. Dislocation of the hip is common. The knees are either bent or straight, and the feet are usually turned inwards and downwards. The spinal column is usually also curved and scoliosis occurs. The limbs are thin and the joints become large with loss of movement. The skin over the joints is usually wrinkled.

Various other congenital deformities appear together with arthrogryposis, such as heart

abnormalities, respiratory problems and hernias.

The learner's movement at the joints is restricted and causes problems regarding mobility. Intelligence is, however, usually normal. The learner will have difficulty in writing, but with sufficient motivation can progress academically and attain independence. Surgery, plaster casts and braces are often required to improve the impairment.

13D.5 OSTEOGENESIS IMPERFECTA

Osteogenesis imperfecta is a dominant genetic illness. Sometimes it appears with no prior family history, apparently as the result of a mutation. Literally, osteogenesis imperfecta means "incomplete bone formation". The collagen fibres of the bone are defective. In various respects the bones are immature or incompletely formed and are comparable with the bones of a developing foetus. The bones of the body are weak and there is more elasticity of the surrounding tissue such as in the joints, ligaments and skin. The bones are soft and fracture easily and thus the abnormality is often known as "brittle bone". There are two kinds of osteogenesis imperfecta, namely *osteogenesis imperfecta congenita*, which is present from birth and the baby is born with fractures already present; and *osteogenesis imperfecta tarda* where fractures appear later. The latter is less severe and the child develops numerous fractures in his first few years of life, but these decrease later on.

Initially the skull is soft with the result that the forehead is broad and the skull bulges at the temples. The face takes on a characteristic triangular form. The limbs are small and bowed and are often malformed due to many fractures. The chest is rounded and the breastbone is prominent. The spinal column is curved and scoliosis often occurs. The joints are slack and bend further than normal. The learner is usually very short in stature. The whites of the eyes show a characteristic bluish colour, due to a large amount of collagen. The skin also often appears transparent. Auditory abnormalities often occur as a result of the bone deformities of the inner ear. Osteogenesis imperfecta often stabilises later on, and fractures lessen after puberty.

Learners with osteogenesis imperfecta experi-

ence mobility problems. Their limbs cannot easily support their body mass and are short and bent. Learners must often use supports to move and fractures often occur. A light blow may cause a fracture and it sometimes seems as if the fracture occurs spontaneously. The fracture heals easily and the bone does not break again in the same place. The learners often experience pain with all these fractures and the plaster casts are uncomfortable and further restrict their movements.

Children who have osteogenesis imperfecta are intellectually normal. They are usually verbally fluent, learn easily and are pleasant to have in the class.

13D.6 BURN LESIONS

The skin is the largest and one of the most important organs of the human body. Heat and chemicals may burn the skin and parts of the skin may be destroyed. The majority of injuries due to burning are caused by exposure to flames. Burns may be so severe that parts of the skin are destroyed and the person becomes physically impaired. Learners experience continuous and extremely intense pain from burns. The loss of skin, coupled with the loss of fluids and the stress of the injury may actually affect every organ of the body. Extensive burns cause damage to the kid-

neys, lungs, liver and the brain as a result of the loss of tissue and tissue damage.

Serious burns cause skin injuries which may result in deformities. Around the lesions the skin is inclined to contract. Contractures may develop, especially in the joints and also the neck. Deformation may occur around the mouth as a result of the contraction of the skin and visual problems may develop. Where there are serious burn lesions, the learner may even appear monstrous. Surgery has to be performed repeatedly in the form of skin grafts to lessen contractures.

Burn lesions appear in various areas and may affect learners in many ways. The following problems, however, are common:

- **A low tolerance for heat and gruelling exercise.** The skin grafts and the lesions do not contain sweat glands and consequently the functioning of the body's cooling mechanism is restricted.
- **Restricted mobility.** The mobility of these learners is restricted by the burn lesions and the resultant contractures. If the burn lesions are very extensive the learner may even have to use a wheelchair. Such learners require physiotherapy to improve mobility, prevent contractures and constriction of the skin around the lesions, and stretch the skin.

A learner in your class sustained serious burn injuries after a fire spread through the squatter camp where he lives. He is currently still in hospital, but he will soon be returning to your class after many months in hospital. His face is deformed. How will you prepare your Grade 8 learners?

Hopefully you kept contact with the learner during all his months in hospital, not only for the sake of his schoolwork, but also for his emotional recovery (of which your contact forms an important part). Hopefully you have also encouraged contact between your other learners and this learner, even if it was only through short letters and cards. If you have kept your learners informed about his recovery, they will most probably be aware of his facial deformity. Prior to his return to class you will have to discuss their reaction to his deformity in detail in order to prepare them. If you are aware of the extent of the deformity, you can share it with the class if you have not already done so. Tell them that people usually experience discomfort when confronted for the first time with somebody's disfiguration. That is normal, but they must not avoid or ignore him because of their discomfort as he may experience it as rejection. Rather overcome personal feelings and concentrate on this learner. Each learner can choose how he or she will reach out to this learner. These learners also have another responsibility and that is to explain to the other learners in the school that their classmate's face is deformed as a result of a fire, but the changes are only on the outside and as time goes by they will notice it less and less.

- **Affective problems.** These can prevail even long after the burn injuries have been sustained.
- **Guilt feelings.** Generally these learners feel responsible for the accident. The circumstances which led to it and the parents' reaction to the accident may contribute to a learner's guilt feelings. Many of these learners consider the suffering and injuries as punishment for previous misdemeanours – this is especially evident in abused learners. The parents' guilt feelings about the event may also increase the guilt feelings of the learner.
- **Pain.** After the injury these learners live through very intense and persistent pain, and even high doses of painkillers do not totally alleviate it. Movement and even simply eating causes the intensity of the pain to flare up. The learners lose their trust in adults and often believe that they do not want to give them relief. The experience of pain adds to the affective problems. As a result of pain, confusion, regression, depression, aggression, withdrawal and general negativism may occur, which add to the challenge of supporting these learners.
- **Deformity.** The burn lesions may cause deformity. When they are on or near the face, learners may appear monstrous. They experience problems with socialisation because they find it difficult to mix with other learners and they must often endure embarrassing questions and ridicule from other learners (Roberts 1995: 446–459).

13D.7 OTHER PHYSICAL IMPAIRMENTS OF THE SKELETON AND MUSCLE SYSTEMS

There are some other physical impairments of the skeleton and muscles which will not be discussed here in detail because their incidence is low, they are temporary, or they are the result of a chronic illness.

Those which occur less often include dwarfism, where the learners are particularly small. This may appear on its own or coupled with other impairments or chronic illnesses. Another example is Marfan syndrome, where the limbs appear abnor-

mally long – especially the fingers and toes. The skull is also elongated and narrow and various eye defects may occur. Abnormalities of the vertebral column and the internal organs may also occur, most critical of which are typical heart problems which can lead to heart failure and death. Limited physical exercise is usually indicated (Culatta et al. 2003: 218).

A physical impairment which is temporary is that of broken bones which result from an accident. The learners may be in plaster casts or braces for long periods or have to use orthopaedic aids.

Various illnesses may also cause physical impairment. Chronic illnesses such as rheumatoid arthritis, Scheuermann's disease and Perthe's disease cause physical impairments that may be of a permanent nature. Perthe's disease occurs between the ages of three and ten years and usually affects boys. It is a type of arthritis of the hip. The head and neck of the femur and the hip joint are affected. There is a degeneration of the bone and cartilage. The illness lasts two to four years and the child remains in bed for months in traction or in plaster casts. The child usually recovers on his own but one of his legs may be shortened and he walks with a limp. Scheuermann's disease usually occurs in teenagers, and more often in boys. It attacks the vertebral column and causes curvature of the top part of the vertebral column, resulting in bent shoulders. This is compensated for by a hollow back, low down. The back and shoulders gradually become more bent. It may be associated with pain. Such learners usually wear a back brace during the day, and at night splints are used. Recovery usually occurs later but the back may remain curved and the learner may have a hunched back.

13D.8 SUPPORT TO LEARNERS WITH PHYSICAL IMPAIRMENT

For support to learners with physical impairment, consult the relevant sections in Chapter 13A, section 13A.4, and Chapter 13C, section 13C.7.

13D.9 CONCLUSION

The four subchapters (13A–13D) deal with various forms of physical impairment. Chapter 13A pro-

vides for physical impairments that are neurologically related. Two such impairments, epilepsy and cerebral palsy, are dealt with separately and extensively in Chapters 13B and 13C respectively. Chapter 13D deals with physical impairments that relate to the skeleton and muscles. The discussion on physical impairment in the various subchapters focuses on the causes and identification of the conditions, as well as support to learners.

Questions

1. How will you deal with a learner with serious burn lesions on an exceptionally hot day in your class?
2. You have a learner with osteogenesis imperfecta (brittle bone disease) in your Grade 3 class. What precautions will you put in place during breaks?
3. There is one aspect of the abovementioned learner regarding a particular barrier that may impede learning. What is it and how will you deal with it?

Bibliography

- Batshaw, M.L. (Ed.). 1997. *Children with disabilities*, 4th ed. Baltimore: Paul H. Brookes.
- Culatta, R.A., Tompkins, J.R. & Werts, M.G. 2003. *Fundamentals of special education – what every teacher needs to know*, 2nd ed. New Jersey: Merrill Prentice Hall.
- Mittal, A., Srikanth, G. & Biswas, S. 2001. *Composite materials for orthopaedic aids*. Available at: <<http://www.tifac.org.in/news/isc.htm>> (accessed on 16 April 2004)
- Roberts, M.C. (Ed.). 1995. *Handbook of pediatric psychology*, 2nd ed. New York: The Guilford Press.

AUTISM AND RELATED DISORDERS (PDD)

13^E

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Learning outcomes

After reading this chapter you should be able to

- ▶ understand the nature of autism as well as the reasons why most learners with autistic spectrum disorder experience extraordinary barriers to learning from early childhood onwards
- ▶ identify the subtle though fundamental differences between learners with autism and those with Asperger syndrome
- ▶ provide the kind and level of support each group will need to access learning programmes
- ▶ develop appropriate skills and knowledge within an inclusive learning environment
- ▶ understand the role of the teacher, the principles of intervention strategies and possible approaches to be followed in an attempt to ameliorate the barriers this group of learners experiences.

Key terms

autistic spectrum disorder ♦ *Asperger syndrome* ♦ *triad of impairments* ♦ *pervasive developmental disorders* ♦ *alternative communication systems* ♦ *TEACCH*

13E.1 INTRODUCTION: THE NATURE OF AUTISM

Autism is defined as a complex, variable, biologically based, pervasive developmental disorder which influences both the development as well as the functioning of the brain. Typically related characteristics are present which support the identification of this impairment.

The umbrella term “pervasive developmental disorders” (PDD), demonstrated in Figure 13E.1, includes a variety of related impairments, namely Rett syndrome, childhood disintegrative disorder,

autism, Asperger syndrome and pervasive developmental disorders not otherwise specified (PDD nos). The intention of this chapter is to concentrate mainly on autistic spectrum disorders (DSM-IV-TR in APA 2000: 59–64).

Autism and Asperger syndrome represent the main impairments of pervasive developmental disorders, and although indicated as separate from each other, they share most of the core characteristics. Autism and Asperger syndrome as well as other autistic-like conditions are presently referred to as autistic spectrum disorders (ASD). The latter description offers a more encompassing account of autism and indicates that there is a broader conceptualisation of autism, and that typical features of autism may manifest differently in different learners. Not to exclude any of these impairments, we shall, when using the term “autism”, refer to autistic spectrum disorders (ASD), or learners with ASD (see Figure 13E.1).

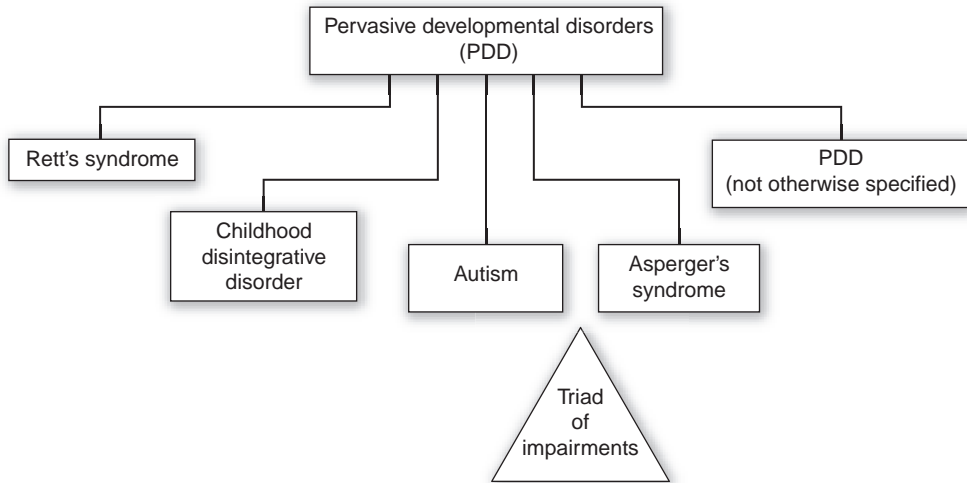


Figure 13E.1 Pervasive developmental disorders

The presence of a developmental disorder, especially if it originates early in life (before three years of age), may cause severe barriers to learning right from the beginning and onwards. Compared to neuro-typical or ordinary learners, the development of skills and abilities of learners with ASD is uneven, takes a different route, and does not always develop spontaneously even when using models for the purpose of imitation. As opposed to learners with Down syndrome, or with physical or sensory impairments, there are no visible external features present which indicate ASD. The barriers to learning this group of learners experiences are mainly due to intrinsic factors, which usually manifest in characteristic patterns of behaviour. Knowing that a learner has autism will tell the teacher that the behaviour and other observed features are mainly due to a specific developmental and not because of a behavioural impairment.

Misinterpretations whereby learners are described and assessed on only a behavioural level – e.g. challenging, stubborn, undisciplined, unmotivated, emotionally impaired, severely or intellectually impaired – is a particular pitfall. Concentration on behaviour alone may often lead to misinterpretations and subsequently to inappropriate intervention strategies and support systems (Jordan 1997: 9). Although behaviour is essential in our recognition of autism, it should

rather be interpreted as a consequence of how and what the learner experiences or understands during class and teaching activities.

13E.2 CHARACTERISTIC FEATURES OF AUTISTIC SPECTRUM DISORDER

Descriptions of first accounts of autism by Leo Kanner in 1943 and Asperger syndrome by Hans Asperger in 1944 created a wealth of information on which our current understanding of autism is still firmly based. Presently, international classification systems such as the *Diagnostic and Statistical Manual of Mental Disorders* of the American Psychiatric Association, and the World Health Organization's *International Classification of Diseases and Disorders* are used to capture and identify the essential features and characteristics of autism. For educational purposes we will discuss the features according to Lorna Wing's "triad of impairments" (Jordan 1997: 10; 2000: 13–15).

13E.2.1 The triad of impairments

Lorna Wing identified a "triad of impairments" which refers to three important aspects or dimensions common in all learners with autism and Asperger syndrome (Figure 13E.2). The onset of autistic spectrum disorders is usually before 36 months, but in extreme cases it may be later. The

following difficulties in areas of development were identified and manifest as follows:

- Impairment of reciprocal social interaction
- Impairment of language and reciprocal communication
- Impairment of imagination and social understanding (flexible thinking)

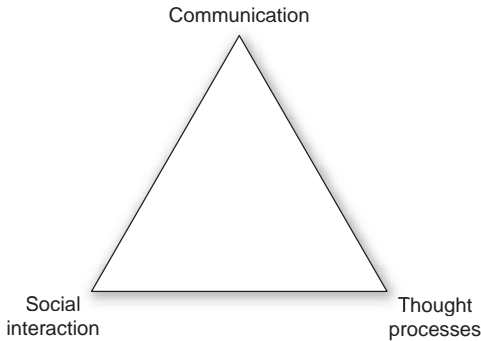


Figure 13E.2 Wing's triad of impairments

Teachers are often confused by the differences they observe in learners with ASD, and the fact that they do not succeed in obtaining planned outcomes after they have spent more than reason-

able time on specific activities. It is thus necessary to realise that the triad of impairments may manifest to different degrees, and also interact with each other in different ways. When a learner experiences difficulties with regard to the development of appropriate social skills, it will be equally difficult for the learner to initiate spontaneous interaction with his peers while playing in the sandpit. Furthermore, effective communication as well as the development of flexible, creative imaginary thinking skills will be influenced by the limitations of the learner's social developmental levels. Therefore, as can be seen in Figure 13E.3, the dimensions of the triad should not be seen as separate developmental entities, but rather as having continuous interaction with each other.

Some of the learners on the autistic spectrum seem to be more severely affected than those with Asperger syndrome. Here the difference lies in the variation of manifestations of each dimension of the triad; the degree and presence of secondary impairments, e.g. epilepsy; and degrees of intellectual impairment. Asperger syndrome, on the other hand, seems to project no significant language or developmental delays (Jordan & Powell 1995: 4–5).

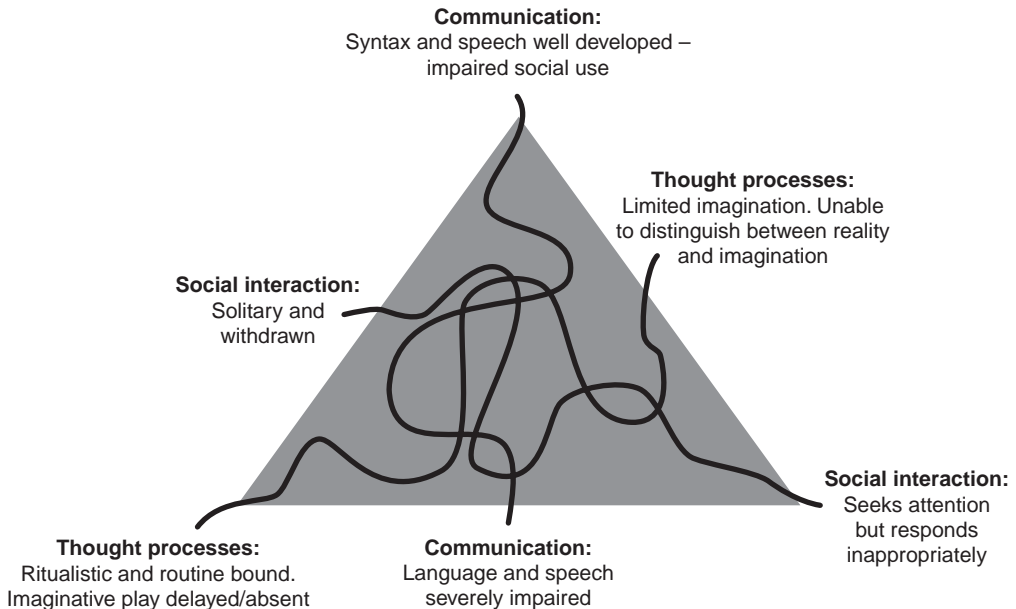


Figure 13E.3 The interrelatedness and complexity of the different dimensions concerning the triad of impairments

Although the presence of the full triad of impairments applies to both autism and Asperger syndrome, it is probably easier to include the latter group in mainstream classes. This does not exclude the fact that both groups, compared to their neuro-typical peers, will need high levels of consistent support, structure and an adapted curriculum or programmes, to prevent and address learning breakdown.

13E.2.1.1 Impairment of social interaction

Learners with autistic spectrum disorders experience difficulties relating to others or in initiating interaction in an ordinary and socially acceptable way. When they respond to non-autistic people, the timing or contents of their responses seem to be inappropriate and odd. By studying Joe's profile below, the impact of difficulties on a social level may be understood.

CASE STUDY

Although Joe knows the names of his peers and is able to read them, he does not relate to them at all and makes no attempt to interact with them. When friends interfere with his play he can become quite aggressive by biting and pinching. He ignores staff and when approached will attempt to push them away. Yet he "uses" people to guide them by the hand if he needs something. He does not seek comfort when upset or hurt, and seldom shows that he has enjoyed an activity.

Three typical manifestations of inappropriate social interaction were identified by Wing (1995: 4):

- Aloof and indifferent behaviour
- Passive behaviour
- Active but odd behaviour

On the social continuum, as illustrated in Figure 13E.4, the behaviour we observe in learners with autism may range from being withdrawn, aloof or indifferent towards people, through responding in a passive way when approached, to appearing "active but odd". Learners want to interact, want attention but do not understand how to initiate or to respond appropriately in these situations. Young learners may at first be extremely withdrawn, and in later years become "active but odd". Thus it is possible, as a result of development or teaching strategies, to move on this continuum from one end towards the other (Jordan & Powell 1995: 4–5).

ACTIVITY

With reference to your experience and knowledge of autism, can you mention types of inappropriate behaviour in learners with ASD? Read the following to find out whether you were on the right track.

Aloof and indifferent behaviour

- At the severe end of the spectrum or continuum, the learner appears to be indifferent to and unaware of others, especially peers. Some of them are often aware of their parents, siblings or primary caregiver and are able to form simple egocentric attachments. The overall picture is that of being solitary and withdrawn.
- Many learners may regard and treat people as objects, will move around them as if they are not present, move them physically out of their way, climb on or over them without any purpose, e.g. when seeking physical contact, playing a game, etc.
- Learners are also inclined to use people in a mechanical manner exclusively to meet their own needs. They will take or pull a hand, pull

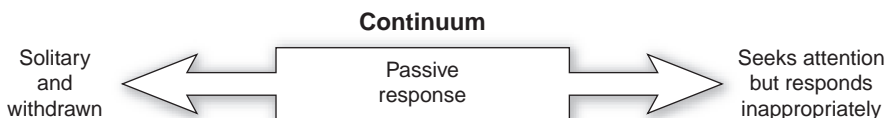


Figure 13E.4 The continuum of social interaction dimensions

or push any person to the desired object or preferred environment. If they are self-sufficient they will not seek help or permission, and will help themselves to whatever they want or desire, e.g. finding another learner's lunch box and eating only the special snacks and not the sandwiches.

Passive behaviour

- These learners passively accept social contact, show some pleasure, but do not initiate spontaneous approaches.
- They may attend to a wide range of activities (not spontaneously), without showing resistance or complaining.
- Some will participate in activities only when assisted or cued to do so, and when the activity has stopped and the others have lost interest, the learner with autistic spectrum disorder will seldom attempt to keep the activity going.
- These learners find it difficult to occupy themselves meaningfully, and in extreme cases they will remain passive most of the time especially during unstructured times, or will become engaged in repetitive stereotyped behaviour, e.g. spinning objects; rocking themselves; lining up, tapping or throwing objects.

Active but odd behaviour

- Learners approach others spontaneously but in an odd, one-sided, bizarre or repetitive way.
- Conversations are usually one-sided, and inappropriate questions are asked repetitively while paying little attention or showing no interest in the reply of the listener.
- In its most subtle form, social difficulties are manifested by an over-formal, stilted, mechanical way of interacting. Social rules and over-polite behaviour are usually learned by rote and applied without regard to the situation or the person involved (Wing 1991: 4). For example the president of the country and the person delivering the daily newspaper will be addressed in the same stilted and over-formal manner.

- One of the reasons why learners with ASD interact differently on a social level is because they experience severe problems in understanding the mental states of others e.g. how other people think and feel. By observing outward appearances, non-autistic people are usually able to “read” others’ behaviour, which is followed by predictions based on their own understanding and assumptions of what others are thinking, feeling or planning. Frith coined the term “theory of mind” to explain this phenomenon (Frith 1989: 156–174). Thus learners with autism may seem to be “mind blind” and “socially blind”, because their framework of knowledge and understanding develops differently. The failure to understand how others think and feel usually leads to the following:
 - Having difficulty in predicting the behaviour and intentions of others. Being able to interpret these intentions and being familiar with the social context leads us to function more successfully within ever-changing environments. Because it is difficult for learners with autism to predict behaviour, they become stressed, confused and anxious, which may be observed in the particular behaviour displayed.
 - Finding it difficult to show empathy and to express themselves emotionally, e.g. when someone is crying because their pet has died or a friendship has ended, or laughing when jokes are told.
 - Not realising that they may affect how others think and feel. This is the reason why they are seldom motivated to please, do not project communication intent, lack spontaneity in social interactions and do not show a conscience.
 - Experiencing difficulties to share attention in social contexts, leading to their own idiosyncratic references, such as preferred and narrow topics of high interest.
 - Lacking an understanding of social rules especially during conversations, which leads to poor interaction, poor turn-taking and topic maintenance (Frith 1989: 156–174; Jordan & Powell 1995: ix–xii).

13E2.1.2 Impairments of communication and language

As with social development, language and communication as well as the development of imagination, thinking and behaviour can be observed according to a continuum of needs.

In addition to the difficulties they experience on a social level, both the ability to understand and use language to communicate intent is impaired and follows rather deviant developmental patterns. Joe's profile indicates unusual communication development.

CASE STUDY

Joe's eye contact is poor and fleeting. His ability to express himself or indicate his needs is limited. Although he does not communicate in a meaningful way, he is able to count to 20 and sings the national anthem. Immediate and delayed echolalia is present and sometimes he repeats words appropriately and in context. He talks to himself and sometimes sings on his own. He is able to follow simple verbal instructions, but shows resistance when faced with more formal demands. He often ignores human and environmental sounds when he is preoccupied with his own activities. Although he has limited speech, he is able to read words in three different languages.

As indicated in Figure 13E.5, learners with autism experience – from an early age and in different degrees – difficulties with all aspects of communication. Non-verbal, pre-verbal, and verbal communication as well as aspects of comprehension are severely impaired. Many will have to be introduced to and taught to use alternative communication systems. Features include a lack of joint attention, poor understanding of reciprocity, low frequency of initiating communication and impaired ability to understand the meaning of lan-

guage and communication, namely to transfer messages from one person to another and to control situations or experiences. Sometimes single words are better understood than phrases or sentences, and when one is unable to transfer information about one's own beliefs, thoughts and feelings, the best one can achieve is to repeat in a stereotyped, repetitive manner statements, questions and whole conversations (Peeters & Gillberg 2003).

The following aspects may be present in different combinations and on different levels:

- At the severe end of the continuum, the ability or desire to communicate may be absent. Understanding of language is usually severely affected and the learner finds it difficult to understand or use any form of communication, including facial expressions, gestures, body postures, pictures and words.
- On the next level, needs will be expressed by pulling the person to the desired object and the utterance of a few simple words. Most of the time words will be echoed in a parrot-like fashion (echolalia), while understanding of language is equally limited. On both this and the previous level, the learner will benefit if introduced to augmentative and alternative communication systems (AAC).

Higher up on the continuum more words and sentences are used, although in a one-sided and repetitive fashion. Speech may often be echolalic, for example the immediate repetition of sentences or phrases they have heard, or repetition of phrases that they have heard in the past (delayed echolalia). Although the general impression is of being very expressive, the understanding of language is remarkably limited.

Pronouns are often reversed, using "you" for "I", "she" for "he", "we" for "you". This is usually a function of echolalia and of phrases heard,

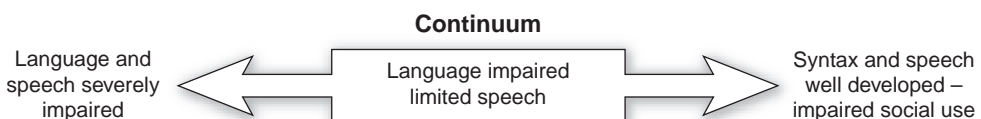


Figure 13E.5 The continuum of language and communication

e.g. the teacher asks: “Do you want a snack?” and the learner replies: “You want a snack, yes”.

Some show little interest in using their language and communication skills until an event takes place that affects them directly (“emergency action”).

Factual comments irrelevant to the situation are often made in an attempt to initiate or participate in a conversation. They often have severe difficulty in selecting, initiating and maintaining contextually appropriate topics of conversation.

The establishment of eye contact, which represents a form of non-verbal communication, is also unusual. Characteristics of eye contact vary along the continuum from being absent, fleeting or peripheral, and when eye contact is present, it may be too intense or give the impression of looking past one. The ability to apply this skill appropriately, for the purposes of either seeking attention or approval, is usually severely impaired. This can be ascribed to finding it difficult to pay attention to both “looking” and “listening” at the same time.

- At the upper end of the continuum would be those who use language in an over-formal, precise and adult-like manner. The extensive vocabulary and advanced grammatical structures used may seem too advanced and formal for the age. Understanding of language is usually of a very literal and concrete nature which contributes to varying levels of confusion, misunderstanding and anxiety, especially if expressions such as “shake a leg”, “it is raining cats and dogs” and “wait a minute” are used. One-sided incessant talking, usually about their narrow interests and regardless of the response of others, often occurs. The impression is that they want to participate in conversations, they want to share information, but fail to recognise the rules of reciprocity pertaining to social conversations, e.g. first to listen and then to respond appropriately to what has been said.
- Vocal intonations may be odd and monotonous, while inflections appear to be unrelated to the content of speech, and speech delivery may be slow, fast or jerky (Peeters 2001: 47–70).

13E.2.1.3 Impairments of imagination and social understanding (flexible thinking behaviour)

Like social and communication development, imagination and thinking skills develop differently in that they manifest in an impaired way, as indicated by Figure 13E.6 and Joe’s profile.

CASE STUDY

Joe seldom laughs or shows any pleasure. He presents with some inappropriate emotional responses – e.g. crying spells and aggression – for no apparent reason. Appropriate responses to heat, pain and cold are absent. No imaginative play is present. His activities consist of self-stimulating behaviour, e.g. spinning himself, stereotyped hand movements, licking his hands, banging on walls with toys. He becomes mesmerised with falling objects, e.g. he holds toys, cars or blocks in front of himself and then drops them. A ritual of clapping his hands and pressing them against each other follows this obsessive playing. He finds it difficult to focus on other meaningful activities although he is able to play appropriately when in a structured situation and supported. He is visually inclined and prefers activities involving shapes, colour sorting puzzles and mechanical objects. He has severe “food fads” and eats only oats porridge or scrambled egg, and drinks water.

Impoverished, restricted imaginative and inflexible thinking skills are demonstrated by their resistance to accept changes in any context. When changes happen unexpectedly, and they do not understand the reason, various degrees of repetitive stereotyped activities and behaviour are reflected, e.g. they become preoccupied with unusual rituals, objects or narrow interests.

Because changes are resisted, it is also difficult to anticipate future events. They perform poorly when they need to plan something or to organise themselves. For them there is only a here, now and immediate world. This leads to a rigid dependence on routines, because they prefer sameness, predictability and order with no or very few changes or deviations. Should changes occur unexpectedly, they might revert to fearing what might happen next. An impairment of “executive

control functions” (Jordan 2000: 97–101), might shed some light on our understanding of the different and sometimes deviant ways in which learners with autism respond. Control of executive functions enables one to maintain and apply problem-solving strategies to attain future goals. It includes the ability to plan, control impulses, inhibit incorrect responses, organise, search, and apply flexible thinking and action strategies. The most important implication concerning a weak control of executive functions is behaviour control and management. This theory explains why learners find it difficult to control their own behaviour, by being unable to inhibit inappropriate responses which are triggered by the environment (Jordan 2000: 97–101).

Notwithstanding the fact that learners with autism may be able to perform rote memory tasks extremely well, they seem to be unaware or able to remember that anything is happening to them. They may be active participants in an activity but “detached from any sense of self” that they are doing it (Powell & Jordan 2000: 6–8). Consequently they are unable to reflect on or recall what they have learned or experienced. These aspects are important when we want learning to be a meaningful experience, recognising at the same time that understanding and success of future experiences are linked to past ones. Being unable to recall personal involvement in events prevents them from applying their thinking skills and utilising their knowledge as a point of departure, not only to solve similar though slightly different problems in the future, but also to generalise or transfer previously gained knowledge or skills to a variety of other situations. To develop a “sense of self”, the use of photographs, videos or verbal comments while learners are involved in activities may serve as evidence of their participation and successes (Powell & Jordan 2000: 6–8).

Irrespective of the kind of rule or custom, it is

seldom understood and is therefore applied in an inflexible fashion. They find it difficult either to obey or break the rules e.g. school closes at 13:30 daily but at 12:00 the day before a holiday, or learners are supposed to be quiet in the dining room every day, but when social dances are held there, they are allowed to party with accompanying loud music!

Some learners are able to memorise and copy in an exact fashion what they see other people do. They are able to enact scenes of lengthy stories, films or advertisements repetitively, e.g. *The Lion King*, which will be copied perfectly, but not always with much understanding of what they are doing or why they are doing it. Others are seldom involved, unless they are prepared to accept the learner with autism as the main “actor” as well as his rules or commands.

Play behaviour is affected on all levels. Lack of imaginative play may indicate difficulty in understanding the symbolic value of toys. Imaginative and pretend play seldom develops spontaneously. Therefore it is important to guide and teach them to play. When they play the overall nature is restricted to repetitiveness and usually lacks the development of more complex pretence levels. They prefer to play on their own and to be occupied with one or more stereotyped and restricted patterns of interest. This is usually inappropriate with regard to the frequency, intensity and focus of the chosen activities. Some show a preoccupation with unusual objects such as string, sticks, bottle tops and elastic bands, or when they play, objects will be arranged in exact lines, or according to shapes, colours or sizes. In the case of learners with Asperger syndrome, instead of playing they are more able to memorise information pertaining to their special interests. At the lower end of the continuum, learners with ASD prefer sameness and may adhere to non-threatening routines or rituals – stereotyped and repetitive motor man-

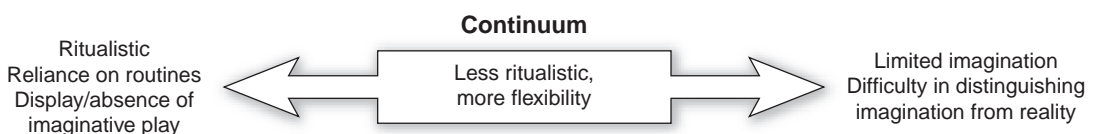


Figure 13E.6 The continuum of imagination and understanding

nerisms, such as hand or finger flapping, or whole body movements may be practised because it ensures predictability, order and security.

In most cases learners over-select or focus more on the details of objects than on the total object. They tend to be persistently preoccupied with parts of objects. This may also be present when talking about a topic of high interest (De Clercq 2003: 37–60, Jordan 2000: 114–125; Jordan & Powell 1995: 1–3; Wing 1991: 1–6).

Happé (in Richer & Coates 2001: 71–72) refers to the normal tendency to process and integrate information as a whole as having a good “central coherence” ability. Because learners with autism display extreme difficulties, they may have a weak ability of “central coherence”. Another attempt to explain the learner with ASD’s preoccupation with details is, according to Peeters, caused by a tendency of “over- or under-selectivity” of information and “detailed thinking” processes (De Clercq 2003: 9–17). To them, concrete or literal details are much more important than the general impressions or meanings attached to concepts as a whole. Therefore when the details differ, the ability to transfer or generalise knowledge of previous perceptions from one situation to another becomes problematic (i.e. the inability to generalise). Moreover, if the details are different, the meaning also changes. Thus the search for detailed similarities outweighs their ability to simultaneously attach meaning linked to function, for example:

- The word “dog” can only be understood by selecting the differences between cats and dogs. In the case of dogs, their noses are similar, different from cats. So if it is not a nose of a cat, it must be a dog.
- “How do you know it is a bird?” I try to see if it is a person or an animal. If it has four legs, it is an animal, but if it has two legs it is a person. If it has two legs and is an animal, it is a bird (De Clercq 2003: 17, 33).

13E.2.2 Commonly associated features

Many associated features are evident and seem to be extended manifestations of the main areas of the triad.

13E.2.2.1 Sensorimotor development

The ability of learners with ASD to integrate and process sensory, motor and perceptual experiences is different from non-autistic learners. The way in which they register, modulate and integrate environmental stimuli by means of seeing, hearing, smelling, tasting, moving around or touching may be affected. Some learners with ASD have little control over the amount of environmental stimuli they absorb. This usually results in unexpected, negative behaviour. Many are either hyper- or hypo-sensitive to stimuli and will, for instance, close their ears and/or eyes with their hands when certain frequencies are heard. In extreme cases they will either move away from the source, resist participating or start crying. Over-sensitivity to sound is particularly common during early childhood. A girl at one school could hear water running in recessed pipes in the wall once a tap was opened. This influenced her ability to focus on tasks at hand. Many learners also respond indifferently to pain, heat and cold. It is also common that they give the impression of “acting as if deaf”. Speech may be perceived as background noise or as fading away, e.g. words and sentences are recognisable at first and then become distorted for no apparent reason. On the other hand, information received verbally might be perceived as less significant because their preferred cultural style of learning is more visually orientated.

13E.2.2.2 Odd movements

Walking on tiptoe, flapping of limbs, jumping up and down, rocking and poor motor coordination are often observed. Poor muscle tone usually affects body posture negatively.

13E.2.2.3 Sleeping and eating disturbances

Disturbances of all kinds often occur. They may be quite happy and content with only a few hours sleep. Extreme food fads restrict the diets of some, while others will compulsively eat anything (food, Prestik, paper, play-dough, etc.).

13E.2.2.4 Mood

Mood swings are common. This can be attributed to over-excitement, anxiety, or unexpected

changes to routines or schedules. Laughing and crying spells may occur often without any apparent reason. During adolescence and early adult life, episodes of depression as well as high levels of agitation, anxiety or over-excitement may become more pronounced.

13E.2.2.5 Attention and concentration

Learners with ASD find it difficult to attend to more than one thing at a time, but are able to focus much longer than expected on their preferred activities of high interest compared to other learning tasks. The presence of attention deficit/hyperactivity disorder (AD/HD) will create additional barriers to learning for learners with ASD.

13E.2.2.6 Behaviour

Undesirable and challenging behaviour of learners with ASD must be judged as a secondary consequence rather than a feature of autism. Difficult behaviour such as socially embarrassing actions, temper tantrums, aggression, destructiveness, screaming, running away and self-injury are often associated with autism. This is usually a result of how the learner reacts to the environment. Epilepsy may cause irritability and confusion, while perceptual difficulties may result in overreacting. Sensory deprivation or high levels of frustration may cause self-injurious behaviour. The observed behaviour may be a result of unidentifiable pain.

In the majority of cases, challenging behaviour is a direct result of a lack of understanding. It is difficult for learners with ASD to make sense of the world, or to understand other people's intentions and a whole range of different social rules pertaining to specific situations.

Their lack of effective language and communication skills will usually lead to undesirable behaviour. This inability to influence the world and to make their needs known is restricting and consequently causes frustration. Instead of labelling the behaviour, it should rather be viewed as a desperate form of communication.

Interference with their activities or routines is a potent cause of undesired behaviour. They resist changes because "sameness" provides security,

order and predictability. Problems with waiting also arise from these difficulties.

13E.2.2.7 Special skills

Many learners, especially those with Asperger syndrome, may display extremely well-developed skills which usually do not involve language pragmatics but rather music, art, dismantling and assembling of objects, and computer and visual-spatial skills. Exact information is sometimes memorised, e.g. first-time experiences, phrases, whole conversations, lists, routes, visual patterns and numbers in an exact order (Wing 1991: 8–12).

13E.2.3 Autism and secondary impairments

Autism seldom occurs on its own. The complexity of autism increases when additional or secondary impairments have been identified. It is possible that autism may occur with any other diagnosable physical, sensory or psychological impairment.

The most frequent impairments which are often associated with autism are intellectual impairments and epilepsy. While these conditions can be viewed as separate entities from autism, their presence may aggravate the features characteristic of autistic spectrum disorders. Autism, by itself, does not cause either epilepsy or intellectual impairments.

13E.2.3.1 Intellectual impairment

It is difficult to separate learners diagnosed with profound or severe intellectual impairment from learners with severe forms of autism. Both groups will depend on high levels of support.

Learners with intellectual impairments usually project general delays in most areas of development. A typical autistic profile would reflect relatively better developed motor skills as opposed to poorly developed language and social abilities. In autism, the nature of overall development is not so much delayed but different and uneven when compared with learners with an intellectual impairment. In autism, it is not only the timing, rate and sequence of development that are affected, but also the qualitative aspects of development which are also affected and impaired at the same time. The majority of learners on the autis-

tic spectrum display different degrees of intellectual impairments – 55 per cent are severely and 25 per cent mildly affected, with only 20 per cent falling within the normal range of ability. Learners with Asperger syndrome do not experience clinically significant developmental delays. However, barriers to learning as a result of the triad of impairments may influence the learners' level of performance negatively.

Learners who are profoundly intellectually impaired on the triad of restricted social, communication and imaginative features are represented on the lowest portion of the continuum (Peeters & Gillberg 2003: 41). The middle section of the continuum represents those with mild to moderate degrees of intellectual impairment (Kanner's variant of autism) and the upper section by learners with Asperger syndrome (normal or even superior intellectual functioning).

13E.2.3.2 Epilepsy

Many people with autism also suffer from epilepsy. Often the first seizure occurs in pre-adolescence or adolescence. By adulthood 30 to 40 per cent have had at least one seizure. The occurrence of epilepsy in somebody with autism is aggravated by having to separate the symptoms of epilepsy from the characteristic features of autism (Peeters & Gillberg 2003: 41).

ACTIVITY

Please read Chapters 13B and 17 on epilepsy and intellectual impairment.

13E.2.3.3 Other overlapping conditions

High levels of anxiety are common. Affective disorders like depression, especially during adolescence and adult life, may occur in association with the triad of impairments and Asperger syndrome. Conditions such as obsessive-compulsive disorder, semantic-pragmatic disorder, attention deficit hyperactivity disorder, schizoid personality disorder and non-verbal learning disability as well as Tourette syndrome are sometimes confused with autistic spectrum disorders. In spite of the many similarities between the abovementioned

conditions and autism, the underlying difficulties are different (Mesibov & Howley 2003: 3).

13E.2.4 Possible causal factors

Despite ongoing research, uncertainty still remains about the exact causes of autism. There seems to be no single cause, thus at present a multifactorial aetiology should be considered. There may be several different biological causes that all lead to autism by affecting the same area of brain functioning. Research for a biological, organic causative mechanism continues internationally. The following possible causal factors are still being investigated:

- According to scientific evidence, complex neurological functions of the central nervous system are affected by impaired neuro-development which results in possible brain dysfunction. Lesions of the temporal lobes, frontal lobes, cerebellum and brainstem are suggested and continue to be investigated.
- Although there is no conclusive evidence, environmental factors such as toxins and viral infections, e.g. rubella (before birth), or postnatal herpes encephalitis appears to put children at risk for the development of autism.
- Autism is frequently associated with other medical conditions such as fragile-X syndrome, tuberous sclerosis, Ito's hypomelanosis, Angelman's syndrome and metabolic disorders. Research done by Shattock and Whiteley (Shattock & Whiteley s.a.) indicates possible food metabolic disturbances or irregularities to be indicative of autism, for example toxic responses to specific proteins such as gluten in wheat and casein in dairy products. Much higher-than-normal levels of peptides are sometimes present in the gastrointestinal tract (gut). If these peptides cross the blood brain barrier and enter the central nervous system, many aspects of normal functioning and development are affected.
- Genetic factors have a prominent role, although no "autism specific" genes or chromosomes have yet been identified. However, autism is 50 times more frequent in siblings of learners with autism. There is also an increase of other con-

ditions in siblings, especially language and social difficulties.

- Studies of brain chemicals and neurotransmitters in autism have produced inconsistent results (Peeters & Gillberg 2003: 43–47; Jordan 2000: 50–57).
- There is nothing linking autism to parental attitudes or the manner in which they nurture their children (psychogenic theory), although this was the initial theory when the term “autism” was first coined by Kanner in 1943.

13E.2.5 Prevalence of autism

There appears to be no difference concerning the prevalence of autism with regard to social classes or different cultures. Unfortunately no official figures are available for South Africa. Internationally the incidence of autistic spectrum disorders is 0,6 to 1 per cent of the general population of school-age learners (Peeters & Gillberg 2003: 39).

A disparity between sexes indicates that males are affected far more than females. In autism it is 4:1 while in Asperger syndrome it increases to 9:1 (Waterhouse 2000: 19). In the past it was believed that autistic spectrum disorder affected only a minority. It seems to be now more common than previously estimated. The problem is, however, that the identification and diagnosis of learners under-presents the prevalence (Peeters & Gillberg 2003: 40).

13E.2.6 Long-term outcomes

Autistic spectrum disorder is a lifelong impairment. However, the severity and intensity of the barriers to learning for learners may change over time.

The overall outcome of learners with autistic spectrum disorder is variable, ranging from poor to excellent. While a third of the population with autism may be able to work in the open market and live independently, the rest will depend on lifelong support programmes according to their needs. Some learners belonging to the Asperger group achieve superior academic functioning, and although rare, may get married and have children of their own. The role and the effects of education, combined with the learners’ personality,

ability to compensate for the barriers they experience, as well as the availability and access to early autism-specific learning-supportive approaches will have an increasing role in determining the final outcomes of learners projecting high needs of support.

13E.3 EDUCATIONAL INTERVENTION

13E.3.1 Principles of intervention

Education plays a major role in meeting the diverse needs of learners with autistic spectrum disorder. It is well known that since educationally based intervention programmes were introduced, learners and parents alike have benefited greatly. It is important to realise that, in an educational setting, autism demands flexible solutions. A range of provisions is necessary if we want to address the learners with ASD’s exceptional barriers to learning. If possible, they need to receive education in close proximity to non-autistic learners or peers. This will create a valuable opportunity to introduce reversed inclusion when learners are unable to access ordinary classes full-time. In addition, learners with ASD may benefit from exposure to a socially appropriate peer group.

ACTIVITY

Think back to your teaching career. Were there any learners who showed deviant behaviour that can be related to autistic spectrum disorder in your classes? What did you do to support them?

When learners with ASD are accommodated at a school the following principles should be considered:

- The entire staff should have a sound knowledge and understanding of autism, firstly as a neuro-developmental disorder, and secondly as a spectrum disorder which is reflected on a continuum of needs.
- Parents should be seen as partners and included to help the teacher understand the learner better. In the case of younger learners the following questions may be asked:

- How does your child occupy him/herself at home?
- What type of activity does your child prefer and enjoy?
- How does your child communicate with you and others at home?
- What is the best way of helping your child to understand what you want him to do?
- What appears to upset your child?
- What is the best way to calm your child when he/she is upset?
- How do you motivate your child to do something you want him/her to do?
- What kind of foods does he/she prefer/dislike?
- To what extent is your child independent and how do you want us to support him/her?
- Do you need information on the school, on autism or on Asperger syndrome?
- Is there anything else you want me or the school to know?

- Teachers should be skilled in identifying and recognising not only the learner's individual and exceptional needs, but also possible emerging skills, areas of strength and special interests in particular contexts.
- Opportunities should be created to enhance the development of sound and objective observation skills which are needed on a daily basis to adapt and develop meaningful and optimal learning environments in an attempt to promote learning at all times.
- If we accept the challenges of teaching, then learners with autism often require a rethinking of our own beliefs and attitudes. What is needed is a truly reflective model of teaching – one in which teachers engage in a process of reflection on their own learning and reactions as part of their analysis of what the learning situation is like for the child, and subsequently what they need to do to make that situation more effective for the learner (Powell & Jordan 2000: 2).
- The teacher should respect, understand and identify the different ways in which learners

with autistic spectrum disorder project their thinking and learning styles which should be incorporated and addressed during teaching and learning sessions.

- To ensure that learners with autism have access to the curriculum and learning programmes, both the school and teacher will have to adapt these to reflect a more compensatory and connective curriculum. The aim should be to accommodate the individual and exceptional needs of learners expressed by the triad of impairments and interrelated, connected key areas of difficulties. These curriculum requirements will also change traditional teaching approaches.
- It should be understood that in some learners with ASD the impairments occur in different degrees of severity, complicated by varying levels of cognitive and language ability. Thus, individualised programmes are needed for each learner to accommodate their diverse needs.
- Although autism cannot be “cured”, the teacher plays an important role in ameliorating the constraints which will enable learners with autism to reach their full potential. “Good teaching can make a difference, and high expectations (as long as they accept the child's difficulties) are as important in the education of those with autism as for any other group” (Powell & Jordan 2000: 2).

Peeters and Gillberg (2003: 83–84) offer the following guidelines:

The teacher of ASD learners should

- be attracted to differences
- have a vivid imagination
- be able to give without getting a “thank-you”
- be able to adapt his natural style of communication and social interaction
- have the courage to work in unknown territory
- never be satisfied with how much he or she knows
- accept that each bit of progress brings new problems
- have extraordinary pedagogical and analytical capacities
- be prepared to work in a team
- be humble
- be professional.

13E.3.2 Support and intervention strategies

The learning style and graded levels of support needed to ameliorate the difficulties learners with autistic spectrum disorder experience will be determined by

- the impact of the triad of impairments
- the presence of secondary impairments
- the social environment (living, learning and teaching)
- individual differences in the manifestation of the features
- the interrelatedness and interaction of the discussed dimensions on each other.

This will not only challenge our knowledge and understanding of the condition (as being more than a set of features), but also our ability to adapt our own teaching approaches to accommodate the idiosyncratic neuro-developmental difficulties and cognitive profiles.

13E.3.2.1 Aspects influencing learning styles

Reference is often made to the different manifestations of the learning and thinking styles of learners with autistic spectrum disorder. The following aspects will influence learning and teaching:

- The degree of social impairment present
- The development of language and communication skills
- Flexibility of imagination and thinking skills
- Intellectual and cognitive abilities, e.g. problem solving
- The presence of additional impairments e.g. learning problems, epilepsy
- The ability to process sensory stimuli and integrate skills
- The ability to copy and imitate
- Motivation and anxiety levels
- Difficulty with sequencing
- Levels of independence
- Abilities of organisation, attention and concentration
- General tolerance levels and the presence of disruptive behaviour (Mesibov & Howley 2003: 6)

13E.3.2.2 Baseline assessment

Before compensatory learning programmes can be developed, it is advisable to determine the following:

- Emerging skills
- Individual strengths (e.g. visual-spatial, auditory, numeracy, memory, motor and perceptual skills)
- Special interests (e.g. computers, puzzles, food, music, art, etc.)
- Work habits (e.g. attention span, independence, level of distractibility, motivation, perfection, timing)
- Areas that need special attention

13E.3.2.3 A range of different approaches

As in the case of other impairments, a wide range of intervention programmes has been developed over the past decades.

At present the following programmes or approaches are best known and have gained interest and support from parents, especially in the UK and the USA. Some are included and practised in South Africa, either privately or at facilities catering for the needs of learners with autism. It is also possible to follow and implement a combination of approaches in an effort to address the specific barriers to learning.

- **Interactive approaches**
 - singing, music and music therapy
- **Approaches to communication**
 - semantic-pragmatic approaches
 - augmentative and alternative communication systems: (high and low, e.g. the Makaton multimodel communication system (which includes gestures and signing), the Picture Communication System (PICS) and the Picture Exchange Communication System (PECS)
 - the Hahnen Programme
 - Carol Gray's Social Stories
- **Educational approaches**
 - Treatment and Education of Autistic and Communication Handicapped Children (TEACCH)

- Higashi: Daily Life Therapy (which includes physical exercises)
- **Diet interventions and supplements**
- **Behaviour approaches**
 - Lovaas: Applied Behaviour Analysis (ABA) through discrete trial methodology
- **Sensory approaches**
 - neuro-sensory motor integration therapy
 - movement therapy e.g. Sherborne development movement, massage, yoga exercises, rhythmic dancing and drama
 - aromatherapy and reflexology
 - auditory integration therapy (Berard)
 - audio psychophonology (Tomatis)
- **Art therapy**
- **The development of play**
- **The use of computers as a visual learning tool**
- **Medical interventions:** medication may decrease some of the behaviour manifestations, e.g. confusion, anxiety, depression, levels of activity, etc.

Although most programmes have merit, no single approach or strategy has been found to be the best. “Within child” factors need to be taken into account.

ACTIVITY

Combine a few of these approaches which you think would cater for the total development of the learner. Then read further to make sure that these approaches cover all the key elements for effective intervention.

13E.3.2.4 Key elements of effective intervention

The following key elements should be taken into account when teaching learners with ASD:

- Any activity should be appropriate to the level of understanding and development of the learners.
- Activities should be meaningful and functional.
- Teachers should focus on the development of independent work skills, application and generalisation of skills learned.
- Learning programmes of young learners should be planned in collaboration with parents or other primary caregivers. These should include their priorities of needs, practices and effective styles of management of learners in the home environment.

When designing learning programmes, keep in mind that learners, especially young ones, may be affected in the following ways:

- Lack understanding of spoken language
- Have the ability to understand some words but not the complex meanings behind them
- May be frequently distracted from the purpose of the activity
- Have poor listening and attention skills
- Are determined to do what they want to do and not what they are asked to do
- Find it difficult to share, wanting things their way
- Project an inability to play meaningfully or to understand the rules, or rules are followed rigidly
- Have excellent rote memory but do not understand what has been learned
- Have an erratic (or graded) awareness of others and how they may be affected by their actions, e.g. stepping on others’ things without noticing, eating others’ food without asking, closing doors in others’ faces, intruding on others’ games
- Develop difficult behaviour because of anxiety
- Shout or call out during lessons for no apparent reason
- Have little or no concern for others, e.g. throwing of sand, stones, toys
- Hold obsessive conversations with regard to certain topics and talk at people rather than with them
- Find it difficult to generalise skills they have learned with regard to other situations
- Develop dependence on particular adults or routines
- Insist on sitting where they want and not where they are supposed to sit
- Show distress when an error is made by themselves or someone else

- Have difficulty making choices
- Have difficulty talking about something that has happened in the past, or putting themselves in an imaginary situation
- Resist changes of routines, environments or activities
- Find it difficult to work or function in groups
- Find it difficult to understand cause and effect
- Run away easily and often, without realising where they are going (Hannah 2001: 12)

It is a most challenging task for teachers to facilitate learning for those who face diverse barriers to learning. We have learned that the majority of learners on the autistic spectrum display high needs of support. They are unable to learn or work independently. Being included in a group will also not compensate for or stimulate learning. Furthermore the traditional auditory model of teaching seems to increase the learning barriers and limits the learners' learning potential. They need individualised autism-specific learning programmes and approaches. These are not always available to learners or teachers. Like the learners, teachers become disempowered or de-skilled when essential support materials and mechanisms are not in place, or their needs are not attended to. This may in turn cause barriers to teaching! To overcome this, teachers will need additional human resources in the classroom, in the same way that they would require assistive devices to help learners with other types of impairment. To accommodate the needs of both learner and teacher as far as sound models of education are concerned, the following teaching and learning approach may be applied.

13E.3.2.5 The TEACCH approach

One of the best-researched educational approaches to address the specific barriers to learning that learners with autism experience is the TEACCH approach. This was developed by the Division: Treatment and Education of Autistic and Related Communications Handicapped Children (TEACCH) of the University of North Carolina. This approach has been implemented in schools worldwide as well as in South Africa. The TEACCH approach is

based on visual presentation. The impact the triad of impairments and additional barriers has on facilitating teaching and learning and gaining access to a broad-based curriculum is addressed by the TEACCH approach. Following this approach benefits not only young learners, but can be applied lifelong on different levels of intensity and in different settings. An important priority of this programme is to "enable learners with an autistic spectrum disorder to function meaningfully, productively and as independently as possible" (Mesiobov & Howley 2003: 6). This approach will also benefit learners at home and in inclusive environments.

TEACCH is a system which advocates organising the learning environment and producing autism-friendly processes and styles. It accommodates and utilises the learner's strengths, abilities, interests and deficits. Visually clear instructions are provided according to the learner's learning style, development of thinking and understanding. It has been proven that in contrast to receiving information verbally, visual information provides more meaning and clarity of what the outcome of an activity is meant to be, and at the same time learning and working more independently is enhanced. This approach also addresses management of difficult behaviour by considering the cognitive skills, needs and interests of the learner, and adjusting or adapting the environment. By providing a predictable routine, anxiety levels may be reduced.

The four components of structured teaching can be incorporated into any learning and teaching programme and consist of the following:

- **Physical structure.** Environments are adapted to suit learning needs and style.
- **Daily schedules.** General and personalised schedules are developed according to the learner's level of understanding to provide clarity, order, predictability and "what is happening when". Provision must be made to provide information on different levels of understanding. Schedules may be presented in an object, a photo, picture, symbol or written format (see Figure 13E.7).
- **Work systems.** These help learners to organise each specific activity, to learn and work

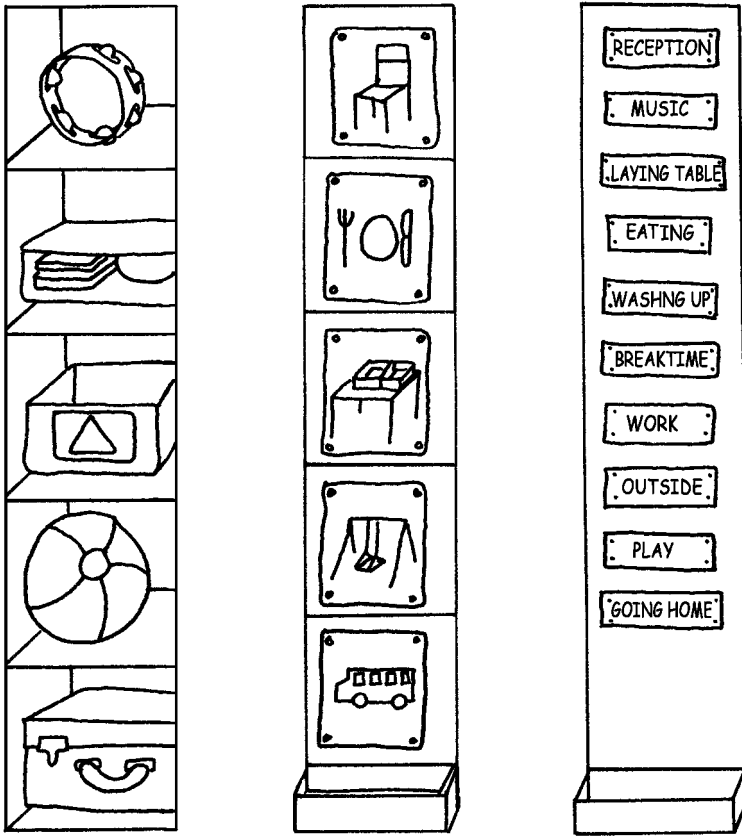


Figure 13E.7 Examples of individualised and visually clear daily schedules

independently, and also to work in pairs and small groups. Individualised work systems provide four aspects of visually clear information to learners, namely

- what work they are supposed to do
- how much work (how many tasks) they will have to complete in a specific time
- how they know they are making progress and when they have finished
- what happens after the work is completed.

Most of the time a reward will be added, linked to the learner's special interest. The opportunity is used to instil a form of motivation. The learner will eventually have to do three tasks in sequence – indicated by a circle, triangle and rectangle – but these can be introduced gradually. After the completion of tasks, the learner is rewarded with his special interest (e.g. listening to music) indicated by an object – in this case, earphones (see Figure 13E.8).

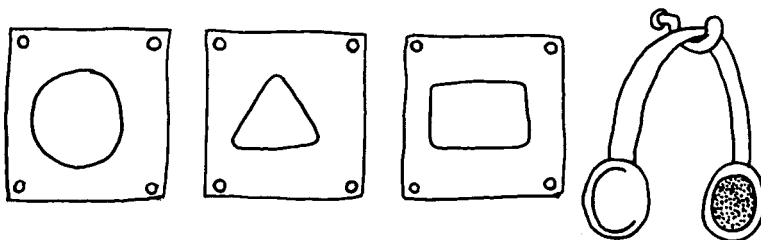


Figure 13E.8 Example of a simplified visually clear work system

- **Visual structure and information.** Each task or activity should be visually organised and structured to minimise anxiety and possible failure. Clarity, understanding and the interest level of the task are maximised by providing
 - visual clarity
 - visual organisation of the learning materials
 - visual instructions of what is required to complete the task, e.g. provide either a jig, a visual representation (e.g. a photograph) or written instructions of how a task is to be carried out (see Figure 13E.9). (Mesibov & Howley 2003: 1–13E5; Peeters & Gillberg 2003: 59–116).
- The different manifestations of behaviour we observe in learners with autistic spectrum disorder are not part of the disorder but rather a response or reaction to how they experience and understand the world. It should be remembered that they only have a limited range of skills available to make others aware of their needs, frustrations and wishes, or to control other people.
- Education programmes at schools should support and facilitate positive learning experiences, and not only normal developmental or non-functional skills-based training programmes. The final outcome of the activity should lead to functional skills which can be applied to daily life experiences, for example sorting of socks instead of blocks. It should be about education and not containment of a learner.
- Currently most learners with Asperger syndrome attend either ordinary public or private schools, or special schools for learners with learning impairment (disability). Although receiving education full-time in a mainstream setting, their ability to function is influenced by

13E.3.3 Placement of learners

The following are important aspects to keep in mind for the placement of the learners:

- The majority of learners will need to be placed at a facility which is able to develop and provide compensatory learning programmes. The “ideal” placement for a particular learner may, however, change over time.

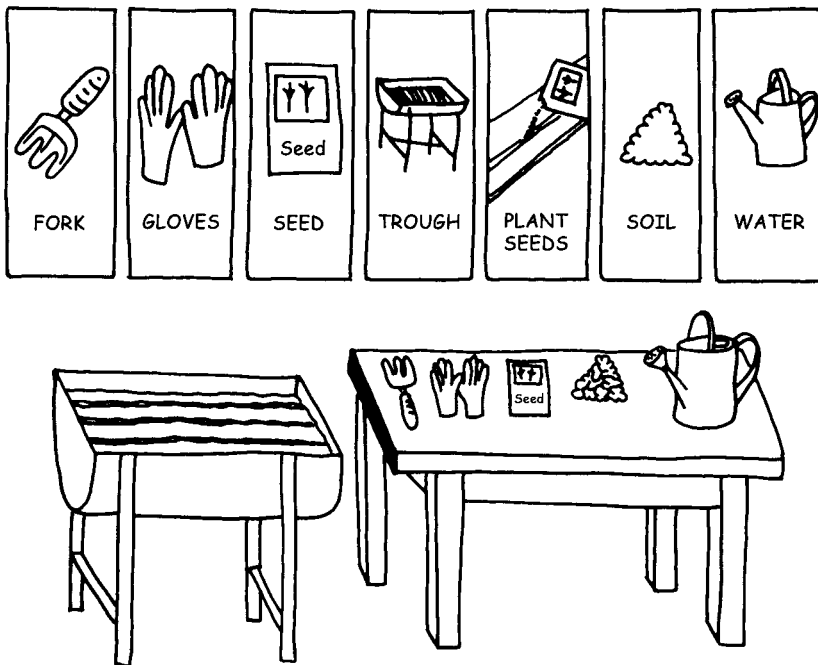


Figure 13E.9 Visual organisation of the learning materials and how a task is to be carried out

the triad of impairments. The difference lies in that the degree of severity – some are able to compensate in a cognitive way for their constraints by being intellectually more able to cope with the learning matter and contents. They are able to apply their strengths, well-developed language ability and areas of special interest more appropriately.

- Although the difficulties of learners with Asperger syndrome might be more subtle in nature, such learners may also experience additional learning difficulties (e.g. dyslexia, semantic-pragmatic disorder). The key areas which need to be addressed at school level are the development of social skills – especially the development of friendships – predictability of situations concerning any form of change, the influence of sensory information pertaining to the environment, and transition to adolescence and adult life.

13E.4 CONCLUSION

Leo Kanner and Hans Asperger have changed the history of autism from being defined as a psychiatric condition to a pervasive developmental disorder. Currently standardised international classification systems are used to identify and diagnose autism. Lorna Wing's formulation of the core criteria, known as the triad of impairments, is perhaps the best suited and most well-known approach for educational purposes. The terms "autistic spectrum disorder" and "autistic continuum" are both derived from her extensive research in the field.

The core criteria of both autism and Asperger syndrome indicate similarities, but at the same time subtle differences. The real nature of autism should be fully understood – especially the differences in the ability to learn, think and understand – when intervention strategies are planned.

Information contained in this chapter deals with the basic, general manifestations of the condition as well as intervention strategies, learning, teaching and team approaches, and the importance of a close partnership with parents.

To conclude, a few words from Donna Williams, an adult with autism (Williams 1994: 223–224).

Autism is something I cannot see. It stops me from finding and using my own words when I want to. Or makes me use all the words and silly things I do not want to say.

Autism makes me feel everything at once without knowing what I am feeling. Or it cuts me off from feeling anything at all.

Autism makes me hear other people's words but be unable to know what the words mean. Or autism lets me speak my own words without knowing what I am saying or even thinking.

Autism cuts me off from thoughts and curiosity, and so I believe I think nothing or am interested in nothing. Or autism makes my mind almost explode with the need to reach out and say what I think or show what I am interested in ... but nothing comes out ... not even on my face, in my eyes, or from my words.

Autism cuts me off from my own body, and so I feel nothing. Autism also can make me so aware of what I feel that it is painful.

Autism makes me feel sometimes that I have no self at all, and I feel so overwhelmed by the presence of other people that I cannot find myself. Autism can also make me so totally aware of myself that it is like the whole world around me becomes irrelevant and disappears.

Autism is like a seesaw. When it is up or down I cannot see a whole life. When it is passing through in the middle I get to see a glimpse of the life I would have if I were not autistic.

The most important thing I have learned is that AUTISM IS NOT ME.

Autism is just an information-processing problem that controls who I appear to be. Autism tries to stop me from being free to be myself. Autism tries to rob me of a life, of friendship, of caring, of sharing, of showing interest, of using my intelligence, of being affected ... it tries to bury me alive.

The second most important thing I have learned is I CAN FIGHT AUTISM ... I WILL CONTROL IT ... IT WILL NOT CONTROL ME.

Questions

1. The principal of your school informs you that an eight-year-old learner with ASD will be admitted to your class. He previously attended a special school and made fairly good progress. The parents therefore requested that he attend a mainstream school. Discuss the relevant principles and support strategies a teacher needs to consider to ensure a learner with autism is included in a mainstream school and the broader community (e.g. educational visits to other places).
2. Teachers doing playtime duties complain about Joe's observed unusual behaviour. His one-sided interactions, incessant talking about chess or binoculars, and insistence that the rules of any game are followed according to his level of understanding is irritating the other learners. Most of the time he wants to play chess, and although he is one of the best chess players, he always threatens not to appear for competitions if they take place at another school. Learners start to avoid him while others tease him. He seems to be unaware of these issues. Discuss the possible underlying reasons for this behaviour, and how it could be rectified.
3. Study the following two learner profiles and answer the questions.

LEARNER PROFILE ONE

John is in a special school for learners with speech and language difficulties.

- The unwritten rules are a closed book to John. He would call to his teacher across the classroom, "She's got no idea" – referring to a peer.
- In group activities, he ignores his partner's attempts to work with him, sometimes pushing him away.
- He is very sensitive to name-calling, and is seen as eccentric by the other boys who have made up a nickname from his surname.
- He has language difficulties, especially with comprehension, and he questions and interrupts inappropriately.
- He speaks in a monotonous voice.

- He enjoys talking about himself and his interests, but his ability to think imaginatively is impaired, leading to problems with creative writing.
- He is quite skilled at reading – he can decode any word but does not fully understand the meaning of what he has read.
- He has an obsession with looking at and drawing maps.
- He has tremendous ability in mathematics and was able to calculate three-figure multiplication in his head at the age of nine. However, when his teacher gave the class a test involving different presentations of sums (e.g. word problems), John became angry and anxious, crying, "You didn't teach me these, I can't do them".
- He finds problem solving difficult because he cannot detect what strategy to apply.
- His body language is gauche: his gestures lack spontaneity and his range of facial expressions is limited.

Questions

- (a) Identify the different features and interpret them according to the triad of impairments, and additional impairments where appropriate.
- (b) Develop intervention and support strategies to address the barriers this learner experiences.

LEARNER PROFILE TWO

Jonathan is a three-year-old boy. He was born at full term with no pre- or postnatal difficulties. His Apgar scores were 9/10 and 10/10.

Physical milestones were reached at the appropriate ages and no feeding problems were reported. The parents describe him as having been a placid, quiet baby who was content to be left on his own. The mother stayed at home with him and planned to return to work after two years. Between 18 and 20 months Jonathan started to use a few words. "Mama", "Dada" and "bye-bye".

When Jonathan was 24 months old, his mother started to work full-time and he was enrolled in an early childhood development (ECD) centre.

Jonathan was admitted to a class of 20 with toddlers ranging from 18 to 24 months.

Around this time, his parents noticed that Jonathan stopped using his previously acquired words, but ascribed this to the fact that he was adapting to the new environment. However, after two weeks in the ECD centre, the principal contacted Jonathan's parents and scheduled an urgent meeting. The ECD practitioner reported that Jonathan was prone to temper tantrums when confronted with formal requests. He isolated himself from the group and insisted on holding two red blocks in his hands at all times.

On the positive side, Jonathan enjoyed puzzles and seemed quite adept at building a specific 30-piece puzzle. Although his parents still hoped that Jonathan was only struggling to adapt to his new school, they started to observe some other disconcerting behaviour at home. Jonathan used few words and would pull his parents by the hand to make his needs known. He repeated some words used by his parents in a parrot-like manner. He refrained from playing with any of his toys with the exception of two red blocks and a specific 30-piece puzzle, exactly like the one at school.

Eye contact was fleeting and Jonathan would allow physical contact only on his terms. One day his parents saw that Jonathan would sit and stare at the tumble-drier going round and round for hours on end.

Questions

- Compare and discuss the differences between learner profiles one and two in respect of the displayed behaviour.
- Discuss different placement opportunities for both learners, as well as why and how learning programmes and assessment standards would be adapted to ensure the learners' access to learning material and activities.

Abbreviations

AAC	Augmentative and alternative communication systems
ABA	Applied Behaviour Analysis
ASD	Autistic Spectrum Disorder

DSM	Diagnostic and Statistical Manual of Mental Disorders
ICD	International Classification of Diseases
PDD	Pervasive Developmental Disorders
PDD (nos)	Pervasive Developmental Disorders – not otherwise specified
PECS	Picture Exchange Communication System
TEACCH	Treatment and Education of Autistic and Communication Handicapped Children

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Bibliography

- American Psychiatric Association (APA). 2000. *Diagnostic and statistical manual of mental disorders: Text revision (DSM-IV-TR)*, 4th ed. Washington, DC: APA.
- Attwood, T. 2001. *Asperger syndrome: a guide for parents and professionals*. London: Jessica Kingsley.
- Beyer, J. & Grammeltoft, L. 2002. *Autism and play*. London: Jessica Kingsley.
- De Clercq, H. 2003. *Mum, is that a human being or an animal? A book on autism*. Bristol: Lucky Duck.
- Frith, U. 1989. *Autism: explaining the enigma*. Oxford: Blackwell.
- Frith, U. 1992. *Autism and Asperger syndrome*. Cambridge: Cambridge University Press.
- Gillberg, C. 2003. *A guide to Asperger syndrome*. Cambridge: The Press Syndicate.
- Grandin, T. 1995. *Thinking in pictures*. New York: Doubleday.
- Grové, T. 1988. Barnaby Rudge: a case study in autism. *Communication*, 22(1).
- Hannah, L. 2001. *Teaching young children with autistic spectrum disorders to learn: a practical guide for parents and staff in mainstream schools and nurseries*. London: The National Autistic Society.
- Jordan, R.R. & Powell, S.D. 1995. *Understanding and teaching children with autism*. Chichester: Wiley.
- Jordan, R.R. 1997. *Education of children and young people with autism: Guides for special education no. 10*. Paris: Unesco.
- Jordan, R.R. 2000. *Autistic spectrum disorder: an introductory handbook for practitioners*. London: David Fulton.

- Jordan, R.R. & Jones, G. 1999. *Meeting the needs of children with autistic spectrum disorders*. London: David Fulton.
- Mesibov, B., Shea, V. & Adams, W. 2001. *Understanding Asperger syndrome and high functioning autism*. New York: Plenum.
- Mesibov, G. & Howley, M. 2003. *Accessing the curriculum for people with autistic spectrum disorders: using the TEACCH programme*. London: David Fulton.
- Peeters, T. & Gillberg, C. 2003. *Autism: medical and educational aspects*, 2nd ed. London: Whurr.
- Peeters, T. 2001. *Autism: from theoretical understanding to educational intervention*. London: Whurr.
- Powell, S.D. & Jordan, R.R. 2000. *Autism and learning: a guide to good practice*. London: David Fulton.
- Quill, K.A. 1995. *Teaching children with autism: strategies to enhance communication and socialization*. New York: Delmar.
- Richer, J. & Coates, S. 2001. *Autism: the search for coherence*. London: Jessica Kingsley.
- Ross, E. & Deverell, A. 2004. *Psychosocial approaches to health, illness and disability*. Pretoria: Van Schaik.
- Shattock, P. & Whiteley, P. (s.a.) *Dietary intervention for the treatment of autism and related syndromes*. Johannesburg: Autism Society Brochure.
- Vermeulen, P. 2001. *Autistic thinking: this is the title*. London: Jessica Kingsley.
- Waterhouse, S. 2000. *A positive approach to autism*. London: Jessica Kingsley.
- Williams, D. 1994. *Somebody nowhere*. London: Transworld.
- Wing, L. 1991. *Diagnosis of disorders in the autistic continuum*. Based on a paper presented at Skive, Denmark.
- Wing, L. 1995. *Autistic spectrum disorders*. London: The National Autistic Society.
- Wing, L. 1996. *The autistic spectrum: a guide for parents and professionals*. London: Constable.
- World Health Organization. 1992. *The ICD-10 Classification of Mental and Behavioural Disorders*. Geneva: WHO.

VISUAL IMPAIRMENT

EMMERENTIA LANDSBERG

Learning outcomes

After reading this chapter you should be able to

- ▶ understand the barriers to learning arising from visual impairments
- ▶ support learners with visual impairments in your classroom by using appropriate teaching strategies and assistive devices.

Key terms

visual impairment ♦ *eye conditions* ♦ *Braille* ♦ *barriers to learning* ♦ *learning support strategies* ♦ *classroom management* ♦ *assessment* ♦ *communication* ♦ *teaching and learning devices* ♦ *orientation* ♦ *mobility* ♦ *eye testing* ♦ *manifestations*

14.1 INTRODUCTION

Learners who experience visual impairments are a heterogeneous group ranging from those who are totally blind to those with slight visual impairment. Despite the fact that many persons with visual impairments are employed in the open labour market and can independently find their way around in towns and cities, there is still a stigma attached. Sighted people seem to think that those with visual impairments are overly dependent on others, that they cannot cope on their own and that they need much help from sighted people. These attitudes can be changed only if the family, the school and the community (including health services) collaborate and work together to support learners with visual impairments so that they can be included in and become appreciated members of society.

CASE STUDY

Tony is a 12-year-old boy and in Grade 6. He is conspicuous because of his white skin and tinted glasses. He finds it difficult to play outside in bright sunlight with his classmates as he cannot see a ball coming from a distance. He cannot distinguish between his friends without recognising their voices. He also finds it difficult to copy the teacher's written work from the chalkboard although he can read from his textbooks if he keeps them close to his eyes. He does not like to sit close to the window especially when the sun is shining. If he takes off his glasses you will notice that his eyes move rapidly from side to side. His classmates tease him and call him "Whitey", which makes him so angry that he is regularly involved in fights with them.

Tony suffers from **albinism**. He is conspicuous because of his *white hair and skin*, but an even bigger problem is that, although he can see, he may experience difficulties to see at a distance, including reading from the chalkboard.

There are many learners like Tony in our schools. There are also many other forms of visual impairment, not only albinism. We distinguish between learners who are blind and learners who are partially sighted because their needs differ.

14.2 BARRIERS TO LEARNING THAT LEARNERS WITH A VISUAL IMPAIRMENT MAY EXPERIENCE

According to the *Education White Paper 6*, (Department of Education 2001: 17–18), different learning needs may arise not only from the visual impairment itself – which may hamper the normal development of the child from birth – but also from, *inter alia*, negative attitudes and stereotyping of differences, an inflexible curriculum, inappropriate communication, inaccessible environments, inappropriate and inadequate support services, non-involvement of parents and inadequately trained educators.

14.2.1 Barriers to learning arising from a visual impairment

To understand and fulfil the needs of a learner with visual impairment, the educator should

know what causes a visual impairment and the influence it has on the normal development of a learner.

14.2.1.1 Structure of the eye

The following diagram of the eye shows its different parts to enable you to understand the eye conditions and diseases that are described in section 14.3.

The form of the eye is approximately spherical and about 25 mm in diameter from the front to the back. It is directly connected to the brain by the optic nerve. The area in the brain which enables a person to see is at the back in the occipital lobe. If the optic nerve or one of the other nerves which is connected to the visual area is damaged or does not work properly, the visual acuity of the person is negatively affected and low vision or even blindness (cortical blindness) could result (Vaughan 1995: 38–39; Vaughan et al. 1999: 4–5).

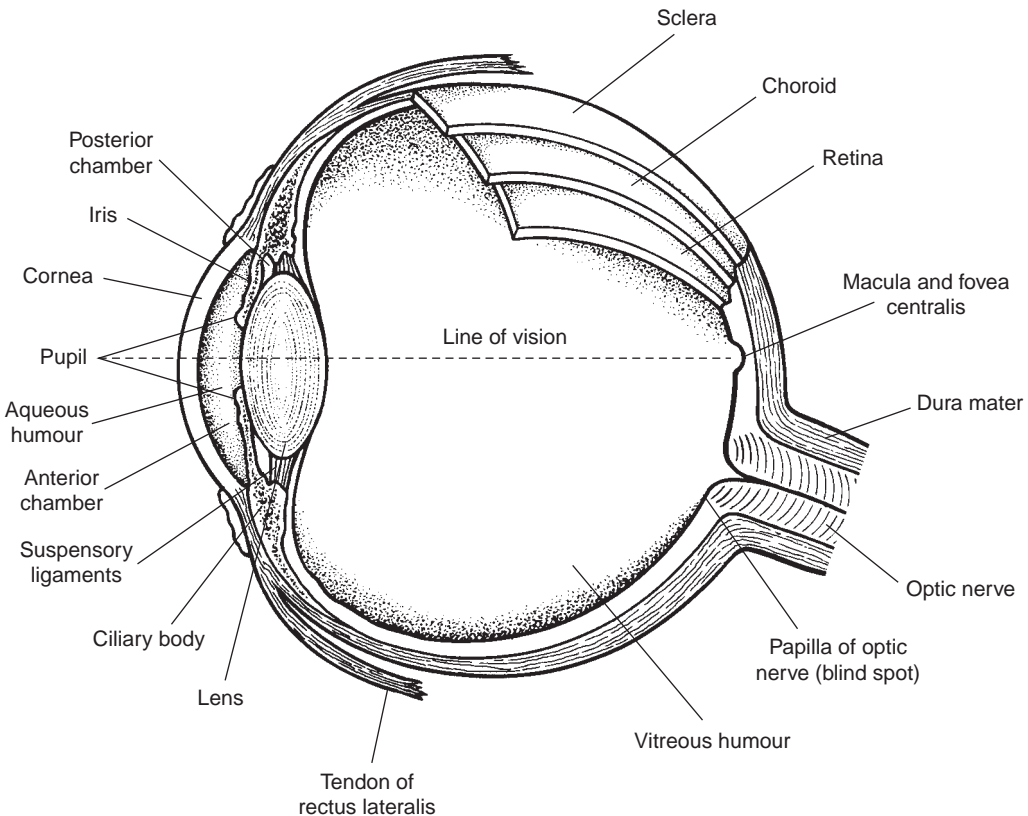


Figure 14.1 The structure of the eye

Source: Pauw 1999: 358

Please read Chapter 12.5 where the visual pathways are discussed. Blindness can also be caused by injury to the occipital lobes and/or to the visual pathways. This type of blindness is called cortical blindness – “cortical” referring to the cortex of the brain.

The **sclera** – the tough outer layer of the eye – protects the two inside layers, the **choroid** and the **retina**. The white of the eye is part of the sclera. The choroid – the middle layer of the eye – is attached to the ciliary body. It is rich in blood vessels and provides blood to the retina.

The **retina**, the most important of the three outer layers of the eye, covers approximately two thirds of the circumference of the eye. It is a very thin membrane consisting of ten minuscule layers. It is composed chiefly of nerve cells, the rods and cones, which contain pigments that absorb light and convert it into electrical impulses. The latter are then conveyed to the brain via the optic nerve where the interpretation of what is seen takes place. The cones are spread around and throughout the macula. The **macula** with the **yellow spot** on it is the point of sharpest vision, where the lens focuses images. The line of vision runs through the middle of the pupil to the macula. The cones function in bright light and are responsible for our ability to distinguish colour. The rods are located chiefly towards the front in the curve of the retina. They function at dawn or dusk and at night and are responsible for peripheral vision.

Six **eye muscles** on the outside of the eye coordinate the movements of each eye so that the eyes can look up, down or sideways and focus together on objects so that the brain receives only one message.

The **cornea**, the outer circular part of the eye, is also called the window of the eye because it is completely transparent and contains no blood vessels. The cornea and the **lens** act as converging lenses and focus optical images onto the retina at the back of the eye. The cornea contains very sensitive nerves which react immediately to close the eye when an object is suddenly about to enter the eye.

The **aqueous humour** is a clear watery fluid which fills the anterior chamber – the space between the cornea and the **iris** – and the posterior chamber, the space between the iris and the lens. The aqueous humour is continually produced by the **ciliary body**. Normally the aqueous humour flows from one chamber to the other through the channel of Schlem to keep the pressure in the eye at a constant level. The **iris** (the coloured part of the eye) is a circular membrane which regulates the size of the **pupil** (opening in the centre of the iris) so that more or less light may enter the eye. In bright light the iris decreases the size of the pupil so that less light enters the eye, and in dull light the iris allows the pupil to enlarge so that more light enters the eye. The iris rests lightly on the lens, allowing the aqueous humour to flow freely between them. The **lens** lies behind the iris and is completely transparent. Ligaments on either side of it hold it in position by attaching it to the ciliary body. By being tightened or relaxed, these ligaments change the shape of the lens for near and far vision (accommodation of the lens), so that the lens always focuses the image seen to a point on the macula.

The **vitreous humour** is a thick, jelly-like fluid which fills the inside of the eye, keeping all the parts in place. If the vitreous humour leaks out or is lost for any reason, the whole eye collapses. The vitreous humour can be surgically replaced with a jelly-like substance so that the eye can keep its shape.

What would you regard as the most important part of the eye and why?

The answer would be the retina because it converts the visual images to electrical impulses and conveys them via the optic nerve to the brain where the images that are seen are interpreted.

14.2.1.2 Causes of visual impairment

Lack of prenatal, perinatal and postnatal care, lack of genetic counselling, accidents, trauma and poor socio-economic conditions may cause certain eye conditions which in turn may cause visual impairment in learners. Lack of parental and

societal involvement may cause the impairment to become a disability and, therefore, a barrier to learning.

ACTIVITY

Please study Chapters 2, 12 and 13 where these issues are discussed. See whether you can establish which of the following factors may cause visual impairment:

- factors from the environment
- intrinsic factors

It is important that educators know about the eye conditions (eye problems that impair normal vision) of learners with visual impairments and the effects of such conditions on learners' visual functioning and learning ability, because this will enable them to adapt the teaching environment for a specific learner, such as choosing the correct teaching strategies, seating position in class and assistive devices for such learners' specific eye conditions.

(a) Refraction errors

The most common eye problems are refraction errors. The eye has three refraction media, namely the cornea, the lens and the aqueous humour. The curve of the cornea is constant, but the curve of the lens may change depending on the distance of the object from the eye. In a healthy eye, light rays from an object outside the eye pass through the cornea, the aqueous humour and the lens and are bent by these media to focus on the macula.

The three main refraction errors are as follows:

- **Nearsightedness or myopia.** Light rays do not focus on the macula but in front of it. This may be caused by an abnormally long eyeball or by an increase in the refractive power of the refractive media (e.g. the cornea is too rounded). This means that learners can see objects close to them perfectly well but cannot perceive those at a distance clearly. Myopia can be corrected by spectacles with convex lenses. If the cornea is too rounded, it can be flattened by means of laser therapy. However, it is difficult to correct high-grade myopia to normal vision.

- **Farsightedness or hyperopia.** Light rays fall on a point behind the macula instead of on the macula. The cause is an abbreviated eyeball or a weakness in the refractive power of the refraction media (e.g. the cornea or the eyeball may be too flat). Learners suffering from hyperopia can see well at a distance but their close vision is poor. Hyperopia can be corrected with spectacles with concave lenses.
- **Astigmatism.** This eye condition is often associated with myopia or hyperopia and is caused by an uneven cornea. Light rays do not fall on the macula but behind and in front of it. Learners with this eye condition find it difficult to distinguish between round letters such as *B* and *D*, or *G* and *D*, or *R* and *S*, etc. It is difficult to correct astigmatism, especially if it occurs simultaneously with myopia or hyperopia. The lens is usually of a cylindrical shape.

(b) Cataracts

A cataract is a clouding of the lens of the eye. Normally the lens is transparent to allow light rays to fall on the retina to provide a clear image. The lens, however, can become cloudy or opaque because of an injury to the eye (e.g. a blunt object penetrating the eye and damaging the lens) or a congenital defect (e.g. due to rubella the mother may have contracted during the first three months of pregnancy). One or both lenses may be removed if they become too cloudy and the learner has to wear spectacles with thick lenses to focus clearly on objects. Learners whose eyeballs are fully grown (at approximately 11 to 12 years of age) may receive an artificial lens by means of a transplant, but will still have to wear spectacles but with thinner lenses.

(c) Strabismus (squint)

When some of the eye muscles do not function together, both eyes may not focus simultaneously on an object. The affected eye is then pulled to one side and does not look straight at objects. Double vision occurs because each eye sees separately. The brain receives two images but suppresses the weaker one of the squint eye. The weaker eye may become lazy and may lose its function because it is not used. However, if the

healthy eye is covered, the lazy eye can be forced to work.

Spectacles can also help the eye muscles to learn to work together. In more severe cases, the eye muscles may be corrected in an operation. This must be done before the age of seven to eight for the development of proper binocular vision (i.e. looking with both eyes) (Vaughan et al. 1999: 219).

(d) Nystagmus

This is an involuntary oscillation (to-and-fro movement) of the eye, especially when the child concentrates on near-vision activities. Reading is difficult because the learner finds it especially difficult to fix the eyes on a spot or word. This movement can be jerky or rhythmical. It is usually accompanied by refraction errors and albinism. It cannot be corrected and impedes the correction of refraction errors. Learners sometimes move their heads to and fro or hold a book at an angle to compensate for the movement of the eyes.

(e) Albinism

As already mentioned, a learner with albinism is conspicuous because of a white skin, white hair and even white eyebrows and eyelashes. The eyes and the pupils are reddish. This is caused by a lack of pigmentation throughout the body and it is observable from birth. It does not, however, become worse over time. The child's eyes and skin are extremely sensitive to light and the child is severely photophobic. The maculas of both eyes are incompletely formed (hypoplastic) and sharp vision is therefore affected (Holbrook 1996: 32). Albinism is usually accompanied by refraction errors and nystagmus. Children with albinism should wear spectacles with tinted lenses to correct the refraction errors and to keep the sharpest sunlight out of their eyes. Learners with albinism usually seek out the darkest parts in the classroom because sunlight hurts their eyes. They also find it difficult to be outside in the sun. These learners have to wear long sleeves, long trousers – made of cotton material instead of nylon – and hats with wide brims when in sunlight to prevent sunburn. They are very susceptible to skin diseases and even skin cancer because of lack of pigmentation. A doctor can prescribe medicinal skin

creams to be rubbed on the delicate skin of the face, neck and eyelids.

Albinism is a recessive genetic condition. If both parents carry an albinism gene there is 25 per cent chance that an offspring may have albinism. (Sacks & Silberman 1998: 25). Genetic counselling for parents and an affected teenager is, therefore, desirable.

(f) Trachoma

Trachoma is caused by a micro-organism and is very infectious. The disease is carried by flies from the tears of contaminated eyes. It begins with inflammation of the conjunctiva (the inner part of the eyelid) and goes through various stages until the victim is totally blind. Scars and blisters are formed on the cornea, which can permanently damage the cornea. The child becomes sensitive to light. In the final stage the infection clears up but damage has already been done to the cornea. Retention of vision is only possible if trachoma is treated in its early stages. The eyes should not be rubbed with dirty hands; therefore, hands should be washed frequently with clean water to keep the flies away and to prevent trachoma (Pauw 1992: 23).

Trachoma is still common in hot climates such as the rural areas of Limpopo province and Mpumalanga and may be caused by poor socio-economic conditions such as a lack of clean running water and poor hygienic conditions.

(g) Conjunctivitis

This is an infection of the conjunctiva, the membrane covering the surface of the eye. This infection may be caused by bacteria, viruses, parasites, allergic reactions or chemical irritations. The infection irritates the conjunctiva so that it itches or burns, and the eyes become red and irritated. The eyelashes sometimes stick together because of an excessive secretion of pus. Bacterial conjunctivitis usually reacts favourably and quickly to treatment with antibiotic eye drops and will heal within 10 to 14 days, but sometimes it may take longer. The worst discomfort and visible symptoms will disappear within three days. This form of conjunctivitis is usually not dangerous to sight, but abscesses on the cornea can leave small opaque scars which interfere with the transmis-

sion of light. In exceptional cases such abscesses can damage the cornea to such an extent that bacteria enter the eye itself and this can lead to blindness (Pauw 1992: 22–23).

(h) Glaucoma

Congenital glaucoma can be present at birth or can develop at any time up to the age of three years. It happens when too much aqueous humour is produced in the front chamber of the eye and the outflow is in some way or other restricted or blocked. Painless pressure builds up in the eye and damages the optic nerve, causing loss of vision. When the cornea bulges to the front, loss of vision has already occurred. It then has a bluish-grey colour. Eye drops can be prescribed or an operation can be done, but loss of vision cannot be restored (Vaughan 1995: 41).

(i) Macular degeneration

The macula progressively degenerates which means that the sharp central vision in the central part of the retina is gradually destroyed so that the person has only side or peripheral vision, with a blank area in the middle of the field of vision (scotoma). The person usually has to turn his head to the side to see from the corners of the eye. Macular degeneration is usually accompanied by a sensitivity to light (Vaughan 1995: 40). Because macular degeneration in children is usually hereditary, genetic counselling is necessary.

(j) Retinitis pigmentosa

With retinitis pigmentosa there is too much pigment or colouring matter in the retina of the eye. This causes a gradual deterioration of sight from the outside inwards so that more and more peripheral vision is lost until only central vision is left. It is accompanied by night blindness, as the function of the rods in the retina is more severely affected (Vaughan et al. 1999: 190). The condition appears first in children when they are about six years old, and they can lose most of their sight by the time they are 15 or older. In other cases, the deterioration of vision is much slower and they may remain partially sighted until adulthood (Vaughan 1995: 40). Retinitis pigmentosa is hereditary, therefore genetic counselling for parents

and learners is necessary. Recent research has identified the DNA responsible for retinitis pigmentosa, which means that retinitis pigmentosa could eventually die out.

(k) Retinal detachment

Vaughan et al. (1999: 187) define retinal detachment as the separation of the sensory retina (rods and cones) and inner tissue layers from the underlying retinal pigment epithelium, breaking connections between the rods and cones and the pigment layer, most often the result of a hole or a tear in the retina. The vitreous humour now seeps into the retina and between the retina and the choroid, causing further detachment of the retina. Because the section of the retina that has become detached is no longer being nourished by the choroid, it atrophies, giving rise to a blind spot in the visual field. Thus total detachment of the retina leads to blindness. Retinal detachment may be caused by trauma, ocular conditions such as high-grade myopia or general physical debility, thus it is not hereditary. If a learner has a predisposition towards retinal detachment, a blow to the head, lifting a heavy weight, diving into a swimming pool or sudden shaking of a child could precipitate or aggravate it.

14.2.1.3 *The influence of a visual impairment on the child's normal development*

Vision is the most dominant sense human beings use in their daily living. It is estimated that of all the information reaching our brain via the senses, more than 80 per cent comes from the eyes. Loss of vision or impaired vision may, therefore, restrict a child's normal development if the child does not receive appropriate support from the parents, the school and the community (especially health services) from birth. Although these developmental aspects are discussed separately for better understanding, they develop concurrently and should be seen as a unit.

(a) Physical and motor development

Every child is unique and experiences his world in his own way according to his genetic potential, education and cultural background. This implies that children's physical and motor skills do not develop at the same rate, although every child

goes through the same stages of physical and motor development whether there are impairments or not. Children with visual impairments, especially those who are blind, have to rely on their other senses for developing motor skills. Unfortunately this happens later in their lives as auditory perception develops later than visual perception. As a result of this, babies who are blind will be behind sighted babies in their physical and motor development if they do not receive support timeously. Because blind babies are not visually stimulated to move their body parts, they do not develop adequate control over their head, neck and trunk muscles. As a result, they need more time to gain control over their sitting, crawling, standing and walking. Many children who are blind skip the crawling stage or start walking before they crawl (Stone 1997: 89). They also walk with their legs apart for a longer time to balance themselves. Because of a lack of vision, children who are blind find it difficult to establish laterality and directionality as they are dependent on sounds from the environment to locate the objects that make the sounds. They lack visual feedback to establish the object that makes the sound. This also applies to gross and fine motor coordination, as they are not visually stimulated to run and climb and to manipulate small objects in their hands. Their gross and fine motor muscles may therefore be underdeveloped, which may inhibit later learning and development such as carrying a Braille machine, using the Braille machine or typing.

The tempo at which physical and motor development takes place in children who are partially sighted depends largely on the degree of residual vision, on the particular eye condition and the quality of support they have received since birth (Landsberg 1997: 69). For example, young children with myopia and cataracts are not stimulated to run towards objects as they cannot see these objects at a distance. Likewise, children with albinism will not enjoy playing outside because of their severe photophobia and possible myopia. Children with macular degeneration will not take part in close vision activities, therefore their fine motor movement may be inhibited as they will not manipulate small objects incidentally. This may hamper their writing activities.

(b) Perceptual development

Perception takes place in the brain. It is the interpretation and categorisation of incoming stimuli from the senses. These senses function as a unit. According to Shaffer (1995: 229) both innate and acquired abilities contribute to the development of perception. Young children develop their perceptual abilities by means of play. For example, they learn to observe objects, to locate the direction and source of sound, to identify objects by means of touch and kinaesthesia, and to judge distances. Their sensory discoveries of the world around them lead to the formation of concepts on which they base their knowledge of the abstract world. Concepts develop from the perceptual process and are enhanced as the child's language is developing.

Children who are blind are unable to develop visual perception because they cannot see. However, children who are partially sighted and blind children with residual vision that they are not able to use functionally may experience problems with spontaneous visual stimulation and consequently also with visual perception because they are unable to interpret and organise what they see accurately. The type of eye condition may also contribute to problems with visual perception. For example, children with cataracts, hyperopia and macular degeneration may find it difficult to distinguish between foreground and background.

Children who are blind rely mainly on hearing to explore their world. It is a common misconception that people who are blind automatically develop a better sense of hearing to compensate for their loss of sight (Arter 1997: 143). Listening skills do not develop naturally but must be taught purposefully and deliberately. Auditory perception is also important for children who are partially sighted as they rely on hearing to confirm their distorted visual perception.

Children who are blind may also experience problems with time and spatial awareness because these may be abstract concepts to them which they cannot discover through hearing and touch.

(c) Language and cognitive development

Everybody has the innate cognitive ability to learn a language but the actual learning of a language is

done by means of teaching, and imitating and listening to others.

Because vision plays an important part in cognitive as well as language development, it stands to reason that children who are visually impaired will be behind other children of the same age in their cognitive and language development. According to Swallow (in Van Heerden 1989: 55) a child who is blind or partially sighted is at a serious disadvantage in experiencing things and situations in their totality, and in abstracting the physical and logical knowledge necessary for cognitive and language development. This lack of experience may lead to verbalism i.e. using words of which people who are blind do not have a clear understanding (Bishop 1996: 53).

(d) Social and emotional development

Although a child's inherent characteristics play a part in his socio-emotional development, cultural influences as well as the type of guidance and care provided by educators also influence the child's personality and interpersonal relationships.

Helen Keller once said that it is not blindness but the attitude of sighted people towards people who are blind that is the hardest to bear (MacDonagh 1996: 25). That means that it is the attitude of the educators of learners who are visually impaired that has a greater inhibiting influence on their emotional and social development than their impairment as such. However, a visual impairment may cause children to have limited visual contact with their parents and others – they cannot observe the facial expressions of others, which makes it difficult to interpret other people's emotions. They have difficulty in establishing social contact with others because they cannot initiate contact. This is especially true in play situations where they are unable to initiate or imitate play. They are then easily ignored by their sighted peers.

Some learners who are blind may exhibit socially annoying mannerisms such as rocking their bodies to and fro, twisting their fists into their eye sockets, waving their hands in front of their eyes (especially when they can distinguish light from dark), or twisting their heads around continuously. These mannerisms have been attributed to lack of adequate sensory stimulation, restricted

movement and limited physical activity (Harrison & Crow 1993: 238). This may cause sighted learners to fear them, and parents and teachers to label them as developmentally delayed, autistic or emotionally disturbed (Scholl 1986: 349).

Learners who are blind may appear to show little respect for the rights of others in a group by calling the teacher while he is busy with other learners, as they are hampered in their ability to realise exactly what a group is and how many other learners also need to share the teacher's time and attention.

Learners with strabismus may be teased because of their squint, and learners with cataracts may be called names because of the thick spectacle lenses they have to wear. This behaviour on the part of peers may cause low-vision learners to withdraw from them and subsequently become loners.

Because their impairment is often inconspicuous, some learners with low vision may have additional problems with social interaction. Friends, for instance, may sometimes be amazed that myopic learners cannot see a friend waving to them at a distance or what is happening on the other side of a street. Subconsciously this can make these learners try to hide their impairment by thinking up excuses for their "inexplicable" behaviour. Such behaviour could cause tremendous tension for learners who are partially sighted.

14.2.2 *Extrinsic barriers to learning experienced by learners with visual impairments*

Extrinsic barriers that may hamper the learning and development of learners who are visually impaired are, *inter alia*, negative attitudes and stereotyping of differences, an inflexible curriculum, inappropriate communication, inaccessible environments, inappropriate and inadequate support services, non-involvement of parents and inadequately trained educators. These barriers, however, will not be discussed separately, but will feature in the discussion on support to learners with visual impairments to address these needs.

14.3 SUPPORT TO LEARNERS WITH VISUAL IMPAIRMENTS

14.3.1 Support regarding the visual impairment itself

It is very important that learners with visual impairments be identified as early as possible. It is easy to identify a child who is blind as early as at birth, but this is not the case with children who have impaired vision but are not blind.

14.3.1.1 Manifestations and identification of learners who are partially sighted

It is sometimes not possible to identify learners who are partially sighted from the appearance of their eyes because their eyes look normal. Their behaviour and their complaints about what they can and cannot see should also be taken into consideration. The following manifestations may be helpful in identifying a learner who may be partially sighted (Lewis & Doorlag 1995; Landsberg 2001; Hallahan & Kauffman 1997).

Behaviour

The learner usually

- rubs his/her eyes excessively
- shuts or covers one eye, tilts head or thrusts it forward
- finds it difficult to read or do other work requiring close vision
- blinks more than usual or is irritable when doing close work
- is unable to see distant objects clearly
- squints or frowns
- is clumsy in movements, drags feet and appears to “feel” with his/her feet, and steps too high or too low when walking in the shade or climbing stairs
- refuses to participate in ball games
- moves his/her head when looking at pictures or when reading
- loses his/her place when reading
- confuses letters or numbers of similar shape, such as *B* and *D*; *R* and *P*; 3 and 8; 5 and 6
- holds reading material unusually close to or far away from the eyes
- displays poor spacing when writing – words are too far apart or too close together.

Appearance

The learner has

- crossed eyes (squint)
- red-rimmed, encrusted or swollen eyelids
- inflamed or watery eyes
- recurring sties
- whitish skin, white eyelashes
- a white pupil (so-called “pearl in the eye”)
- pupils of uneven size
- drooping eyelids
- one eye higher or lower in relation to the other
- eyes that move excessively to and fro.

Complaints

The learner complains of

- an itching, burning or scratchy feeling in the eyes
- the inability to see well
- dizziness, headaches or nausea following close work
- blurred or double vision
- an inability to see in bright light.

ACTIVITY

See whether you can match some of the manifestations above to the eye conditions discussed in section 14.2.1.2. For example, which manifestations can be related to trachoma, nystagmus and cataracts?

14.3.1.2 Eye testing

If any learners frequently exhibit any of the problems mentioned above over a period of time, they should be referred to an optometrist or ophthalmologist to determine their distance visual acuity (sharpness of vision) by means of the Snellen chart. A Snellen chart contains letters which are arranged in rows, from large print on the top row to small print on the bottom row. Persons being tested stand six metres away from the chart and read the letters, starting from the top, until they reach the line where they can no longer read the letters with certainty. For learners who cannot read, the Snellen E-chart is used. On this chart the letter E is printed in different sizes from large to small (just like the letters on the Snellen chart)

with the prongs of the E pointing in different directions. The learners are required to say or show which way the E points (Landsberg 2001: 182–183).

Learners are generally regarded as **partially sighted** when they have a visual acuity of between 6/24 and 6/60 with the best optical correction. They need spectacles and other optical devices to utilise their residual vision fully. A person with a visual acuity of 6/24 can see at a distance of six metres what a person with normal vision can see at a distance of 24 metres. A person with a visual acuity of 6/60 can see at a distance of six metres what a person with normal vision can see at a distance of 60 metres. 6/6 is regarded as normal vision.

Learners are regarded as **blind** when they have a visual acuity of less than 6/60 with the best optical correction. It also depends on the *field of vision* and on the type of *eye condition* the learner has. When people with normal sight gaze straight ahead, they see objects within a range of 180 degrees. Some people have certain eye conditions such as macular degeneration that allow them to see well only in the peripheral part of their visual fields, others see well centrally (retinitis pigmentosa) but not peripherally. Whether the field loss is central or peripheral, if the person is restricted to an area of 20 degrees or less of the normal 180-degree field, he can be classified as blind. A person is therefore regarded as blind if he does not possess any residual vision or cannot utilise his residual vision even with the aid of optical devices.

Near vision acuity is needed for reading and other close vision work. It can be detected by means of a near vision test consisting of different unrelated paragraphs written in different sizes of print. The size of the different print has standardised numbers. The learner holds the chart at a comfortable distance from his eyes in good reading light. If the person can read at 25 cm the letters that are numbered as 14, his near vision is indicated as *N14 at 25 cm* (Mason 1997: 58–59).

Knowing learners' visual ability (with and without the best optical corrections) is necessary in supporting learners with visual impairment to learn optimally because this will help to determine the needs of these learners.

14.3.2 Educational support to learners with visual impairments

Support to learners with visual impairments in an inclusive education system should include all the environmental systems (as discussed in Chapter 1). However, in the next discussion the focus will be on the meso- and exosystems which include the family, the school (and the education district) and the immediate environment such as health services.

ACTIVITY

Please make sure that you understand Bronfenbrenner's systems model and the application thereof for learners with visual impairments. Also read Chapter 11 where parental support and collaboration are discussed.

Support to learners with visual impairments cannot be provided without a sound knowledge of these learners and their condition. Only then can the environment be adapted to cater for their needs. Learners with visual impairments can be accommodated in special schools as resource centres, in full-service schools as well as in ordinary schools, depending on their needs (read Chapter 4 regarding support). A distinction should be made between support to learners who are blind and to those who are partially sighted as educational support differs. Learners who are blind are taught through their remaining senses, while learners who are partially sighted are mainly taught through their visual sense even though vision may be distorted and of poor quality, which depends on the type of eye condition.

14.3.2.1 Support to enhance the development of learners who are visually impaired

Children with visual impairments need purposeful and planned support from birth to prevent their impairment from becoming a disability. Parents therefore need to be empowered to support such a child. This could be provided by health services; special schools as resource centres; non-governmental organisations pertaining to visual impairments, such as the South Africa National Council for the Blind and its affiliates; as well as parent

organisations for parents of children who are visually impaired.

Although the developmental aspects will be discussed separately, support should be holistic – i.e. all the developmental aspects should be cultivated from birth and continued into the school years. Therefore collaboration between parents, educators at school and all the other available support services is of the utmost importance.

(a) Support in physical and motor development

From birth, parents should motivate children who are blind through all their remaining senses to move by placing toys that make noises just beyond their reach. By constantly talking to them, parents make children who are blind aware of their presence so that they will reach out to them. The legs and arms of children who are blind should be moved (touch and kinaesthesia), and when they are strong enough, they should be put on their stomachs and, with appropriate sounds, movement and encouragement, taught to crawl. By being bounced up and down in their parents' arms and being helped to stand up against objects, children who are blind are made aware of the vertical position and of walking. To keep their balance they will walk with their legs apart longer than sighted children do. They should be taught to use furniture as landmarks to move around in a room. When outside they need encouragement to walk and run towards a voice that they trust.

In general, children who are blind are not afraid of heights. They must be encouraged to climb up and down (e.g. on a jungle gym) to exercise their shoulder and leg muscles.

Laterality and directionality are acquired skills and should be taught purposefully by means of tactile and auditory clues. Learners who are blind or partially sighted should always use their own bodies as a point of departure to understand laterality and directionality such as jumping on one foot at a time (unilateral hops), with both feet together (bilateral hops) and alternative hops (first on the one foot and then on the other).

Young children with any residual vision should be motivated with colourful and noise-making

toys to stimulate both residual vision, touch and hearing.

Activities that could be used to teach young learners who are blind and partially sighted gross and fine motor skills are as follows:

- Use colourful pegboards for fine motor skills to strengthen their fingers as well as to develop directionality (e.g. putting the first peg in the left-hand corner and the next one in the right-hand corner).
- Have big, brightly coloured balls with bells inside or wrapped in a plastic bag (so blind learners can hear the ball coming). Blind learners can sit on the floor (opposite each other) with their legs apart and roll the ball towards each other.
- Encourage the learners to run towards a person or a sound, holding a sighted person's hand.
- When the child is walking on a gym bench, fasten a toy or a bell that emits a steady sound at the end of the bench slightly above the child's head. This will encourage lifting of the head when walking, thus improving the child's posture.
- Use ropes to make forms on the floor that children can walk and crawl around. They can feel the forms with their feet and hands.
- Use push-toys, such as wheelbarrows, to act as safety barriers as well.

(b) Support in perceptual development

Blind learners' senses of hearing, touch, smell and taste, the kinaesthetic (touch and movement) and haptic (kinaesthesia, temperature and pain) senses should be stimulated from early childhood. These senses are not inherently stronger in blind people than in others, but they are more purposefully employed and thus they usually gain in effectiveness. Development and cultivation of the senses should be done together with other activities such as physical and language activities across a blind person's whole life, not only when he is at school. A holistic approach towards support is therefore essential.

Both blind and partially sighted learners' hearing should be developed and sharpened. The abil-

ity to listen, and especially the ability to localise and distinguish between various environmental sounds and to estimate the distance between themselves and these sounds, should be improved, since such abilities play a crucial role in a learner's orientation to surroundings and movement towards a certain familiar sound.

Learners who are blind must be taught to practise and make optimal use of auditory memory, since they need to rely on it to a far greater extent than sighted learners do, particularly with regard to remembering numbers (such as ID numbers) and dates. The following listening and memory exercises are vital.

- Let all learners (visually impaired and sighted) in your class sit still and listen to the sounds around them. Let them indicate the direction from which specific sounds are coming, and what causes these sounds.
- When at a street corner, let them show you the direction from which vehicles and other noises are coming, and whether these noises come from cars, lorries or motorbikes, etc.
- Use a tape recorder to play different sounds which all learners can identify.
- Practise their auditory memory by asking questions about their environment; what they have heard, seen, important telephone numbers, their ID numbers, their addresses, etc.

Learners who are blind have to rely on their senses of touch (tactile) and movement (kinaesthetic) to detect shape, line and texture, and to orientate themselves in a limited space (e.g. within a room). Blind learners' fingers must learn to be dexterous and the sensitivity of their fingertips should be improved. They must practise their sense of fine tactile discrimination to be able to identify objects by their shape and form, since this is a better indication of the nature of an object than its texture. For instance, a plate can be made of porcelain or enamel but it is its circular shape that informs us what it is. However, the identification of various textures – such as hard, soft, rough or smooth – is also important. When an unfamiliar object is put into the learner's hand, its distinctive characteristics (shape and texture) should be pointed out to the learner.

The development of touch and kinaesthesia is also of the utmost importance for Braille reading and writing. Learners who are blind read Braille with their fingertips. They need fine tactile discrimination and fine motor coordination to move their fingers in a straight line over the Braille dots and to interpret the different combinations of dots as different letters and/or words.

Educators of older blind learners need to remember that these learners constantly need exercises for finger dexterity because they are not visually stimulated to use their hands.

Learners who are blind do not spontaneously learn to discover new objects because there is no visual stimulus. Moreover, they cannot watch others and imitate them. If a boy who is blind does not know about a tractor or that there is a tractor near him (if someone does not indicate where it is and show him how to play with it), he will not know what to do with it. We should, however, guard against depriving learners who are blind entirely of their own initiative. For example, when a boy who is blind has been shown how to play with the tractor, he should be allowed to decide what he wishes to do with it. He can then be taken to a real tractor to explore the size and shape of it in comparison with the toy tractor. This is also applicable to older learners who are blind.

However, the sense of touch also has its limitations. Learners who are blind can never really form an idea of objects outside their tactile reach (e.g. big buildings, the heavenly bodies), objects which move (a rolling wheel), objects too small and delicate to touch (bubbles, ants) and ephemeral objects (e.g. flames). Models may be used but they are not always adequate for proper formation of the concept involved, because they tend to rely on visual cues and are in some cases much smaller (e.g. big buildings) or much bigger (e.g. ants) than the original.

Similarly blind learners' sense of smell and taste should be stimulated and reinforced. The sense of smell in particular could play an important role in orientation and mobility. The smell of soap indicates the way to the bathroom; the smell of certain flowers or specific shops such as pharmacies, vegetable shops or takeaways along the route to the school indicates the way to the school. The

sense of taste should be cultivated by introducing learners who are blind or partially sighted to different tastes while the object of taste is described to them (e.g. chips are salty).

(c) Support in language and cognitive development

The cognitive and language development of children who are blind or partially sighted takes place in the same sequence as that of sighted children, but they need much more support from parents and caregivers not to lag behind. They need support to acquire concrete experience of the words they hear. Therefore objects should be placed in their hands and explained to them in detail. Events and strange noises in their near vicinity should be interpreted for them. However, it remains a challenging task to explain abstract concepts such as *in* and *out*, *above* and *below*, *in front* and *behind*, to learners who are visually impaired.

How would you explain to a learner who is blind that he is walking underneath a big tree?

Here you have to combine motor, perceptual as well as cognitive and language skills. The learner should be made aware of his surroundings when walking underneath the tree. What does he hear? The wind blowing and the noise the leaves make? Is the sun shining? When walking underneath a tree, does he feel the sun on his skin? When stretching his hands above his head, can he touch the branches? If not, he should be lifted up or put on a stepladder until he reaches the lowest branches. Let him surround the trunk with his arms to get the impression of the how big the tree is.

It is not possible to separate cognitive and language development from motor and perceptual development. Learners who are blind should use as many of their senses as possible to understand new words and to communicate meaningfully with others. They must have a solid base of concrete experience before they can understand the

language that describes the experience. This will prevent verbalism.

Stories can be read to them, but care should be taken that the story does not depend too much on illustrations. Listening to the radio and “watching” television will also contribute to developing cognition and language. Occurrences and events should be described to them so that they can understand cause and effect. For example, if you do not eat your food now, you will become hungry later on when at school, where you are not allowed to eat in class.

Learners who are partially sighted also need concrete experience because they may not be able to learn incidentally. For example, learners who have macular degeneration will not be able to observe objects in their direct field of vision. They have to turn their heads to look with their peripheral vision. They should be taken to objects and these objects should also be described to them while they are manipulating them in their hands.

Although learners who are blind cannot detect colour, they should be made aware of colour (e.g. the sky is blue, blood is red, grass is green). They can attach their own meaning to it, such as their experience when they feel and taste blood or grass. Care should be taken that they do not put everything into their mouths.

(d) Support in social and emotional development

Parents and teachers should support learners who are visually impaired and help them to accept their problems. Their good points (strengths) should be pointed out to their friends so that they learn to appreciate them despite their impairment.

Blind learners ought to have the experience of playing and interacting with other learners. There will be activities that they cannot do but there are more that they can do.

Sacks et al. (1992: 100) recommend that visual impairment itself should be a topic in both formal and informal discussions in class. Everybody in class should have an adequate knowledge of the implications as well as the nature of visual impairment.

What is your view on this and how would you go about planning such a discussion? Could it be a life skills theme? What outcomes would you set for this theme?

Educators should pay attention to the mannerisms young learners who are blind may exhibit. They could distract the learners' attention from themselves with activities such as placing a toy in their hands to manipulate instead of pressing the eyes. Physical exercises such as running, jumping and walking are important to develop gross muscle coordination. All that is needed is to grasp their hand. In the case of teenagers, educators could explain the peculiarities of their mannerisms to them and remind them not to repeat them. However, it is best to try to stop these mannerisms as early as possible. Sacks et al. (1992: 168–169) suggest a discussion on these mannerisms and the negative effect thereof on social interaction with sighted learners in class.

Learners who are blind should be taught about appropriate dressing for certain occasions, which colours match and about the latest fashion so that they are acceptably dressed for appropriate occasions. They should be taught how to distinguish between certain garments by means of shape (e.g. whether the garment has a collar or not) and texture.

14.3.2.2 Classroom support

Classroom support includes classroom management, effective teaching strategies and the employment of appropriate communication, teaching and learning devices for learners who are visually impaired. The previous discussion on support in the development of learners who are visually impaired should always be taken into account as support should be continued in school.

(a) Classroom management

The classroom should be managed according to the needs of learners with visual impairments. They need specific support in the classroom regarding the best seating places, lighting and sound. Arter (1999: 20) maintains that it is essential that educators understand the full implica-

tions of learners' eye conditions. It may be that vision in, say, the right eye is better than in the other. The learner should then sit in front to the left side to use the right eye to maximum effect.

If there are learners in your class wearing spectacles, first find out what their eye conditions are and then determine the best seats for them in class.

Learners with myopia and cataracts should sit in front near the chalkboard. They should be allowed to come closer to the board to see better. A smaller chalkboard on wheels which can be moved towards the learner with visual impairment will also improve that learner's reading. It will also help learners to check their own written work by repeating what is written on the chalkboard. Learners with hyperopia would prefer to sit at the back of the class. They enjoy outside play but may not be interested in schoolwork.

Learners suffering from albinism should sit in a darker place in the classroom, away from the windows. Curtains in front of the windows can regulate the incoming light. To avoid glare, learners should work facing away from a window if no curtains are available.

Doors should be kept either open or closed because doors that are ajar can be a potential safety hazard to visually impaired learners who can bump into them and hurt themselves. Passages between desks should be clear to prevent learners with visual impairments from stumbling over stray objects.

Teachers should be flexible in their seating arrangements in the classroom to allow learners to be close to different classroom activities or to adjust the amount of light available as needed. For example, a learner might move to another place to obtain a better view of the teacher, the chalkboard or the screen for the overhead projector, or to obtain a greater amount of light for a particular activity (Lewis & Doorlag 1995: 428).

The correct lighting is essential for learners who are partially sighted. Best (1992: 52) distinguishes between environmental lighting and task lighting. The first refers to clearly lit classrooms,

corridors and stairs. Where corridors and stairs are not sufficiently lit, white or yellow stripes can be painted on the floor and on the stairs to increase visibility. Schoolbags and other objects should not be lying around in corridors where learners with visual impairments may stumble over them. There must be enough environmental light in the classroom (shining through the windows or provided artificially) to prevent harsh shadows from forming.

Task lighting refers to the lighting necessary for the execution of a specific task, such as concentrated light on a book which is being read. Learners with myopia, glaucoma, strabismus and other macular problems will need extra table lamps. The best way to position the lamp on a table with a slanted surface is to have the light shining over the learner's left shoulder for the right-handed person and vice versa for the left-handed person. When learners with visual impairments are working at a table with a flat surface, the light should be placed at an angle directly in front of them.

The sound environment is important for learners who are blind. It helps them to understand what is happening around them and to orient themselves in the environment. Learners who are blind must be taught to distinguish between different sounds, to listen selectively and to concentrate only on important sounds. Distracting noises from outside can be muffled by curtains. A partitioned place in the classroom can help the learner who is blind to listen to tape recordings without disturbing others and to muffle unwelcome sounds which may distract his attention.

(b) Learning support strategies

In the new education dispensation the teacher is regarded as a facilitator and the curriculum is regarded as a guideline which permits teachers to develop innovative and creative programmes. The teacher should encourage critical thinking, argument, reflection and action on the part of learners in the learning situation. Learning should be relevant and related to real life. This is even more important for learners with visual impairments.

Teachers should remember that learners with visual impairments are a larger heterogeneous group than sighted learners, because besides differences in intellectual capacity, personality and

physical and emotional conditions, different eye conditions and other health conditions also play a role. Blind learners learn mainly through their sense of hearing in a group situation. To gain concrete experience they sometimes need more individual attention and additional support than sighted learners. Teachers need to take on the role of the learners' eyes and provide learners with information, take them to objects they can touch, place their hands on parts of the object and, at the same time, explain them to the learners, elicit more questions from the learners and make sure that they understand. Teachers need to be creative, innovative and "teach from the living moment". This also applies to learners that are partially sighted who, because of certain eye conditions (myopia, macular degeneration, cataracts, etc.), have a similar dependence on explanations and experiences. In larger classes teachers should use group work and cooperative teaching to facilitate the support of learners who are visually impaired. The class can be divided into smaller groups which should not contain more than one learner who is visually impaired.

Knowledge of objects, sounds, smells, tastes, etc., which seeing learners take for granted should be purposefully taught to learners who are visually impaired by means of excursions, everyday apparatus, models, etc. The use of concrete materials in formal teaching (blocks, rods, models, stuffed animals, embossed maps, sorting games, etc.) is of the utmost importance. A storing place for these materials should be available for later use and for lending to fellow teachers, or they could be exhibited in the library, because sighted learners will also benefit from this.

Another problem that learners who are visually impaired experience is the fact that they "see" as far as they can stretch their hands, i.e. as far as the object they can touch. That means that they almost never get a total impression of an object. They should be taught to move from the smaller part to the greater whole and from the known to the unknown. As many senses as possible should be harnessed for use: hearing, because environmental sounds and echoes in particular establish the range and size of rooms; the sense of touch for differences in texture, forms and temperature; and the sense of smell in order to identify the dif-

ferent smells in the environment. Models can be used effectively to enhance full impressions.

ACTIVITY

How would you explain to a blind learner and a low-vision learner with a restricted field of vision and/or cataracts the size of an aeroplane by means of a model of an aeroplane?

Models are scale examples of the real object. To explain scale it is necessary to use the learner's own body and a model of a person as a frame of reference. This can then be applied to a model of an aeroplane and a real aeroplane.

Because learners with visual impairments are less mobile than sighted learners, their life-world remains more limited if they do not move about in the environment and become actively involved with other people and objects. They therefore need deliberate support to make discoveries themselves. Blind learners should not be overprotected and in this way prevented from becoming independent. Educators should not yield to the temptation to do things for learners with visual impairments in order to save time.

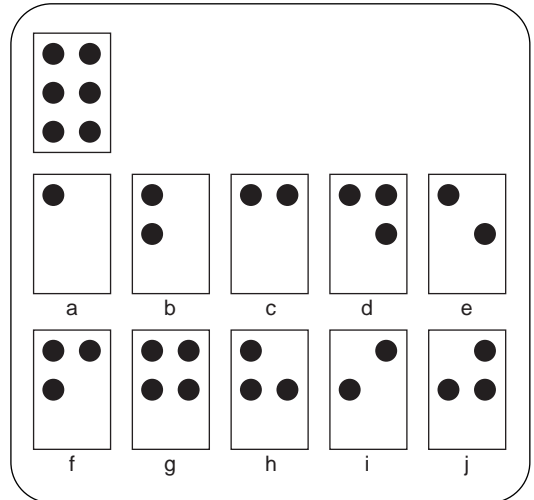
Not one of the teachers' strategies for teaching learners will be of any use if learners are not motivated to learn and to accept responsibility for their learning. Learners with visual impairment sometimes find it more difficult to become motivated to learn because the learning material fails to stimulate them visually. They are also "overlooked" more easily if they have not completed an assignment, the result being a decrease in the level of their motivation. They therefore need constant motivation and praise to complete tasks.

(c) Communication, teaching and learning devices

Braille is still the basic and unique reading and written medium of communication and learning for persons who are blind. Therefore they must learn to read and write Braille at the same time as sighted learners begin to read and write. Braille must be taught by a trained person. Braille is written by means of a Braille machine and/or slate and

stylus. The latter is nowadays mainly used for taking notes, while the Braille machine is regularly used by people who are blind.

Braille is a code based on six dots. Each of these dots has a number and a place in the cell.



To increase the speed of reading Braille, contractions have been introduced for combinations. Prefixes, suffixes, pronouns and prepositions are usually contracted. Braille is read with the sense of touch, chiefly with the cushion of the forefinger.

The use of computer technology by people who are blind has opened up many opportunities, including vocationally. The following devices can be used by persons who are blind (Hutchinson et al. 1998: 162–171):

- Scanners can scan printed material and send it to the computer from which the person who is blind can retrieve the information.
- Refreshable Braille displays are electronic devices that must be used in conjunction with a computer. They provide immediate feedback on information entered into or displayed by a computer.
- Notetakers such as Braille-'n-Speak, Braille Lite and BrailleNote are portable, lightweight electronic devices that can be used to take notes in meetings, to write down telephone numbers and to execute ordinary and scientific calculations, even for later retrieval. However, their memory is not very big and information has to be downloaded to a computer for later use.

Persons must have a sound knowledge of Braille to use these devices.

- Computers can be equipped with screen-access software which allows persons who are blind to navigate the screen, generate and read documents and surf the Internet. Everything that is displayed on the screen for the sighted user is converted into voice-output for persons who are blind.

The main drawback of electronic devices is that they are extremely expensive, and most persons who are blind cannot afford them. Availability and training in their use are restricted to the main centres of the country, which means additional costs for persons who are blind living in other parts of the country.

For learners who are partially sighted a magnifying glass can be used if large print books are not available. Instead of using ordinary classwork books with dull lines, parallel lines can be drawn on blank A4 paper with a black pen (a marker pen or koki). This will be more visible for the learners especially if they find it difficult to write between the lines. The space between the lines may vary according to the residual vision of the learner, but the lines can be further apart than those in the classwork books. Computer software which zooms in on texts on the screen is also available for learners with low vision. Closed circuit television can be used in class where the teacher does demonstrations underneath a camera while the learner who is partially sighted follows the demonstration on a television screen near his desk (Hutchinson et al. 1998: 172–179).

Printed material should be clear, attractive and meaningful. Reading materials that display the greatest contrast between the print and the paper such as black print on white paper with fairly large letters and good spacing are the easiest to see. When duplicated copies are handed out to learners, make sure that the learner who is visually impaired receives the darkest, clearest copies.

Textbooks can be read onto tape for learners who are blind or partially sighted. Tape recorders could also be used as a medium for study, for leisure, for personal correspondence and for occupational purposes. Learners who are visually impaired should be taught good listening and

note-taking skills so that they may derive the best advantages from the tape recorder. When using it for study purposes, many learners who are blind use the tape recorder in conjunction with Braille reading. While they are reading the text in Braille they can simultaneously listen to the same text on tape. This method can also benefit learners who are partially sighted and sighted learners with reading problems.

Learners with visual impairments should be taught to type at an earlier age than the other learners (usually from Grade 6 when their hands are big enough to reach all the keys on the keyboard). It makes written communication with the teacher easier for them. Learners who are partially sighted find it easier to read typed work than their own handwriting.

(d) Orientation and mobility

According to Stone (1997b: 159–161), the quality of the lives of people with visual impairments is, to a large extent, dependent on their ability to care for themselves and to travel independently. It is through moving in our environment that our world expands and that we are exposed to a wide range of real experiences. Independent movement also facilitates social interaction and meeting new friends. To move and travel independently, two abilities, namely orientation and mobility, are required. Orientation refers to the awareness of space and the position of the body in space. Mobility is the safe movement of the person from one point to the other.

To develop sound orientation and mobility skills, the laterality and directionality of persons who are visually impaired should be well established. In other words, learners who are visually impaired should be purposefully taught the left and right sides of their bodies, from which direction sounds are coming (localising the sounds) and their relation to objects in their environment (directionality). Teachers should therefore make them aware of sounds, smells, textures and temperature differences so that they can identify certain places in their environment.

Blind learners and certain of those who are partially sighted need formal training in mobility – such as moving with the white cane or a guide-dog – by a trained mobility instructor.

How would you go about teaching a boy with macular degeneration his way to his desk when he sits in the third row, second from the back?

Learners with macular degeneration rely on their peripheral vision, auditory and tactile clues to acquire directionality. You will, for example, let this learner count the rows of desks in the class by letting him touch each row as he passes and then tell him to turn into the third passage until he reaches the back wall. Then let him turn back to find the second last desk. Learners with macular degeneration find it difficult to distinguish colours, so marking the desks with bright colours would not assist him.

14.4 ASSESSMENT OF LEARNERS WITH VISUAL IMPAIRMENTS

The teacher should be able to make appropriate use of different assessment practices, with particular emphasis on competence-based assessment and the formative use of assessment, in particular the continuous and diagnostic forms of assessment (Department of Education 1998: 69). The teacher should understand the assumptions that underlie a range of assessment approaches, and their particular strengths and weaknesses in relation to the age of the learner, the barriers the learner may experience in his learning such as a visual impairment, and the learning area being assessed. Teachers should, therefore, keep in mind that learners with visual impairments need more time to complete tasks, tests and examinations. Braille reading is, for instance, much slower than sighted reading. Usually, learners who are visually impaired should for every hour allocated to a test or examination get between a quarter and half an hour of extra time to complete their work. Tests or examination papers can also be done through an amanuensis (an independent third party who writes down their answers) or can be done orally. Learners also need more space around them as Braille books, a Braille machine and other devices take up more space than books and pens. Examination and test papers should be in Braille or large print according to the needs of each learner.

14.5 CONCLUSION

Learners with visual impairments need ongoing support from their early days. Loss of or restricted vision influences the language, motor and socio-emotional development of the learner. Whereas blind learners can experience a personal life-world only by means of their remaining senses, partially sighted learners have the use of all their senses, even though their vision is imperfect.

Learners who are blind should therefore be taught to make better use of their remaining senses, while learners who are partially sighted should be taught to use vision together with the other senses. Special attention should also be paid to language acquisition, to the development of socio-emotional skills and to orientation and mobility. If this is not done from an early age, learners with visual impairments will lag behind in their total development.

Questions

1. Why is it important that teachers should know about the eye conditions of learners who are visually impaired?
2. How would you use an occurrence such as a motor accident on a street corner near the school to teach the learners in your class (including visually impaired learners) the learning areas of literacy, mathematics, economics and natural sciences?

Bibliography

- Arter, C. 1997. Listening skills. In Mason, H. & McCall, S. (Eds), *Visual impairment: access to education for children and young people*. London: Fulton, 143–148.
- Arter, C. 1999. Environmental issues. In Arter, C., Mason, H., McCall, S., McLinden, M. & Stone, J. (Eds), *Children with visual impairment in mainstream settings*. London: Fulton, 19–28.
- Best, A. 1992. *Teaching children with visual impairments*. Milton Keynes: Open University Press.
- Bishop, V. 1996. *Teaching visually impaired children*. Springfield, IL: Thomas.
- Department of Education. 1998. *Norms and standards for educators*. Technical committee on the revision of norms and standards for educators. Pretoria: Department of Education.

- Department of Education. 2001. *Education White Paper 6: Special Needs Education: building an inclusive education and training system*. Pretoria: Department of Education.
- Hallahan, D.P. & Kauffman, J.M. 1997. *Exceptional learners: introduction to special education*, 7th ed. Boston: Allyn & Bacon.
- Harrison, F. & Crow, M. 1993. *Living and learning with blind children: a guide for parents and teachers of visually impaired children*. Toronto: University of Toronto.
- Holbrook, M.C. (Ed.). 1996. *Children with visual impairments: the special needs collection*. Bethesda, MD: Woodbine House.
- Hutchinson, J.O., Atkinson, K. & Orpwood, J. 1998. *Breaking down barriers: access to further and higher education for visually impaired students*. London: Stanley Thornes.
- Landsberg, E.I. 1997. *Learners with special educational needs II (visual disability)* (only study guide for FDESEV-W). Pretoria: Unisa.
- Landsberg, E.I. 1998. *Teaching practice (visual disability)* (only study guide for FDEVPR-U). Pretoria: Unisa.
- Landsberg, E.I. 2001. Learners with visual impairment. In Krüger, D. (Ed.), *Special educational needs* (only study guide for OSN431-S). Pretoria: Unisa, 171–200.
- Lewis, R.B. & Doorlag, D.H. 1995. *Teaching special students in the mainstream*, 3rd ed. Columbus: Merrill.
- MacDonagh, G. 1996. Pre-school problems facing young visually impaired children and their families: abnormal visual development begets abnormal child development. *The British Journal of Visual Impairment* 14(1): 29–31.
- Mason, H. 1997. Assessment of vision. In Mason, H. & McCall, S. (Eds), *Visual impairment: access to education for children and young people*. London: Fulton, 51–62.
- Pauw, T. 1992. *Physiological-medical aspects of visual handicaps* (only study guide for PHYVO0-6). Pretoria: Unisa.
- Pauw, T. 1999. The visually handicapped. In Kapp, J.A. (Ed.), *Children with problems: an orthopedagogical perspective*. Pretoria: Van Schaik, 352–376.
- Sacks, S.Z. & Silberman, R.K. 1998. *Educating students who have visual impairments with other disabilities*. Baltimore, OH: Paul H. Brookes.
- Sacks, S.Z., Kekelis, L.S. & Gaylord-Ross, R.J. 1992. *The development of social skills by blind and visually impaired students*. New York: American Foundation for the Blind.
- Scholl, G. 1986. *Foundations of education for blind and visually handicapped children and youth: theory and practice*. New York: American Foundation for the Blind.
- Shaffer, D.R. 1995. *Developmental psychology: childhood and adolescence*, 5th ed. Pacific Grove, CA: Brooks/Cole.
- Stone, J. 1997a. The pre-school child. In Mason, H. & McCall, S. (Eds), *Visual impairment: access to education for children and young people*. London: Fulton, 87–96.
- Stone, J. 1997b. Mobility and independence skills. In Mason, H. & McCall, S. (Eds), *Visual impairment: access to education for children and young people*. London: Fulton, 159–168.
- Van Heerden, E.I. 1989. 'n Ondersoek na die selfkonsep van 'n groep blinde adolessente meisies. MEd-verhandeling. Pretoria: Unisa.
- Vaughan, D., Asbury, T. & Riordan-Eva, P. 1999. *General ophthalmology*, 15th ed. Stamford, CT: Appleton & Lange.
- Vaughan, V. 1995. *The partially sighted adolescent: transition to adulthood*. Pretoria: SA National Council for the Blind.

EDUCATING THE DEAF AND HARD-OF-HEARING LEARNER

15

CLAUDINE STORBECK¹

Learning outcomes

After reading this chapter you should be able to

- ▶ define deafness
- ▶ demonstrate an understanding of the mechanics of the ear
- ▶ discuss the types, causes and various levels of hearing loss and deafness
- ▶ demonstrate a basic understanding of the identification process and working with an audiogram to understand the learner's hearing loss
- ▶ identify the characteristics evident in learners with hearing loss and the subsequent impact of deafness on the learner's development
- ▶ demonstrate an understanding of the current debates in deafness and Deaf education, including an understanding that sign language is a real language
- ▶ identify the central barriers experienced by learners who are deaf and hard of hearing
- ▶ demonstrate how to intervene effectively and provide the necessary educational support to the child and his family.

Key terms

deaf ♦ *hard-of-hearing* ♦ *Deaf education* ♦ *sign language*

15.1 INTRODUCTION

Deafness is one of the largest categories of impairments in South Africa and encompasses the full spectrum of hearing loss – from mild to total deafness – yet as an invisible impairment it is often misunderstood or even underestimated in the severity of its impact upon both the child and his family. This chapter will provide an overview of the complexity of deafness along with the necessary strategies required by teachers and learn-

ers in order to fully achieve the ideal of the inclusive philosophy: equal access to equal education.

Before we continue, stop for a few minutes and consider the following question. Make a note of your comments and thoughts, as we will be coming back to what you have written down a few times in the course of the chapter.

ACTIVITY

Make a note of everything you know and think about deafness and deaf people. This may be based on things you have heard, read or seen on television, or just know or assume. Write down as many things as you can in two minutes.

Let us consider briefly how you may have described deafness and deaf people: Deafness is usually described as the physical impairment of not being able to hear, and usually brings to mind the need for hearing aids, speech therapy and the use of signing and gestures as a means of communication. Additionally deafness is often synonymous with terms such as “deaf and dumb”, “hearing impaired”, “concrete-bound”, “learning disabled” and “intellectually disabled”. Disablist labels such as these have been around for centuries and despite the fact that they are often based on nothing more than rumours and assumptions, they are hard to get rid of and frequently impact on the way we as hearing people interact with deaf and hard-of-hearing people.

Because of the human rights movement (and subsequently the drive towards inclusive education), researchers and practitioners worldwide are moving away from the disability labelling which includes terms such as “hearing loss”, “hearing impairment” and “hearing disorder”. Rather, researchers are choosing to use the more generic term “deafness” to refer broadly to all levels of hearing loss, making the distinction between deaf and hard-of-hearing only when it is necessary to do so (Marschark et al. 2002; Schirmer 2001; Marschark 1997; Moores 1996). This chapter will follow this convention and where necessary will differentiate between “deaf learners” and “Deaf learners”, where the former refers to the audiological aspect of having a hearing loss and the latter to the linguistic and cultural minority group where “Deaf” is subsequently spelled with a capital “D” (Padden & Humphries 1988).

In addition to the labels referred to above, the area of deafness is rife with contentious debates and choices regarding communication and education. Due to the many inaccurate assumptions about deaf and hard-of-hearing people and the contentious debates that abound, practitioners working in this field require a certain amount of specialised knowledge, understanding and insight. Subsequently, this chapter aims to provide you with an overview of the holistic view on deafness: how to define deafness and hearing loss, the mechanics and aetiology of deafness, how to identify deafness in a learner, as well as understanding the impact of deafness on the

learner in terms of development and the subsequent audiological, communicative, educational and social interventions available to you as a practitioner when working with the d/Deaf learner and his family.

Let us begin the next part of the discussion with a question:

ACTIVITY

How would you define deafness if asked to do so by a new edition of the Oxford English Dictionary? Spend a few minutes writing down your definition/s.

When defining deafness there are generally two opposing schools of thought: the first defines deafness audiological, where deaf people are seen to lack hearing and subsequently are seen to be deficient in, *inter alia*, their communication ability; the second defines Deaf people and their deafness as a linguistic minority group with a strong Deaf identity and culture. These two definitions broadly represent the medical model and the social model, where the majority of hearing people follow the former and the majority of Deaf people the latter when defining themselves.

More recently there has been a move away from the polarisation of these two models to a bio-ecological approach (see Chapter 1) where the person within the system is central, and the ontological model (Shakespeare & Watson 2002; Wrigley 1996) where each person is viewed and accepted as a whole: physically, culturally and spiritually, etc. This chapter thus aims to present a truly inclusive model where these abovementioned models converge. Thus, in order to fully understand the socio-cultural issues of deafness and how they impact on both the individual and society, one needs to understand the complexity of deafness and all that it implies. The discussion will begin with an overview of the mechanics of the ear and aetiology of deafness.

15.2 THE STRUCTURE OF THE EAR

The ear is divided into three sections – the outer ear, middle ear and inner ear – and each of these parts has a specific role to play in the process of translating sound (measured in hertz and deci-

bels) into sound waves and ultimately into the electrical impulses interpreted by the brain.

The outer ear gathers the sound and channels it down the auditory canal where this sound comes into contact with the eardrum, causing it to vibrate. The sound has thus now been transformed into a mechanical vibration and is in the middle ear. The vibrations of the eardrum set the ossicles (the hammer, anvil and stirrup) vibrating, which then set fluids in the cochlea vibrating, causing shearing of the hair cells. The hair cells cause excitation of the nerve endings, which transform vibrations into electric impulses which travel along the auditory nerve to be interpreted by the brain.

15.3 DEFINING AND DESCRIBING HEARING LOSS

When defining the physical audiological component of deafness, there are four categories of information to consider:

- The level of hearing loss
- The age of onset
- The type of hearing loss
- The cause or aetiology of the hearing loss

Knowing and understanding each of these categories is essential in understanding your learners and the specific challenges and barriers they face.

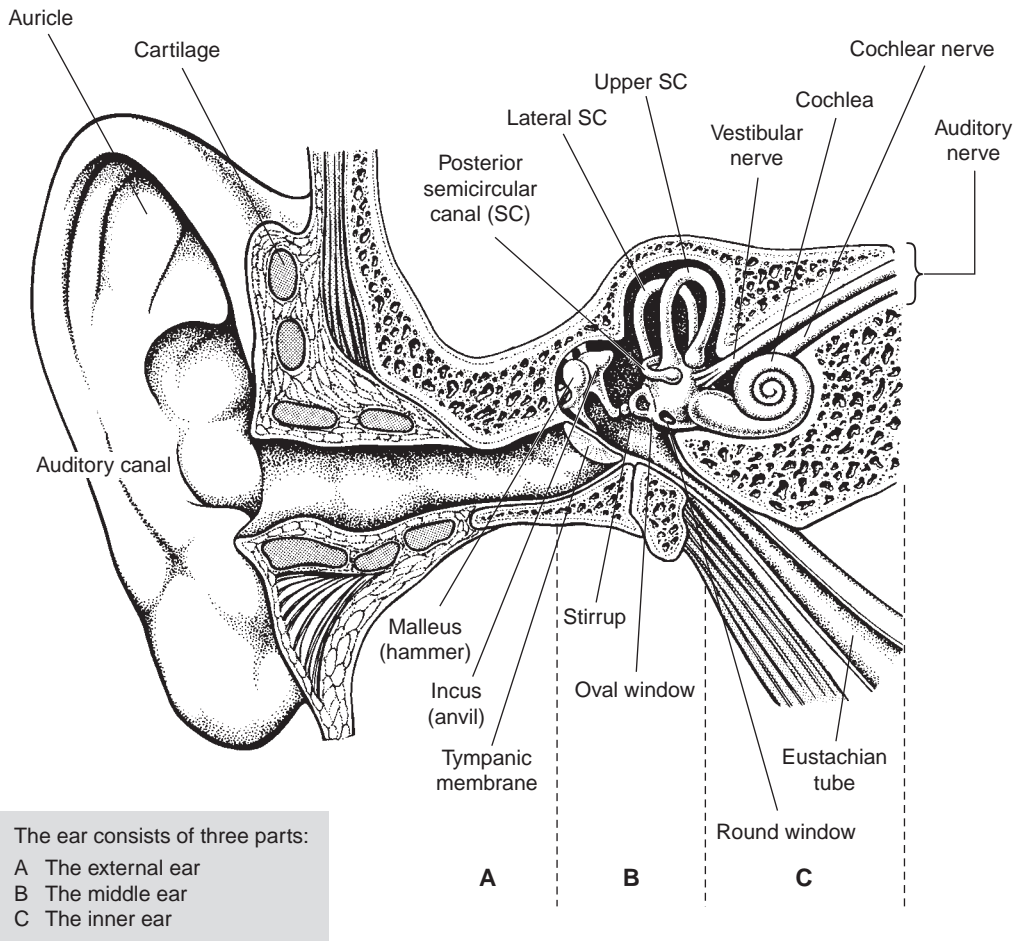


Figure 15.1 Diagram of the ear

Source: Kapp 1999: 321

15.3.1 Levels of hearing loss

If you suspect a learner has a hearing loss, the first step is for the child’s hearing to be tested by an audiologist, either privately or at a hospital or clinic. After the test, the audiologist will help fit the child with the correct hearing aid (based on the audiological profile), as well as refer the child for auditory training and speech therapy if necessary.

Babies should be tested as early as possible, preferably soon after birth before the mother and baby leave the hospital. This initial hearing screening with oto-acoustic emissions (OAEs) is a quick and painless process and should pick up any discrepancies and reasons for concern. A second, more accurate screening is through the auditory brainstem response (ABR) test, where the auditory nerve’s response to sound is measured with sensors placed on the ears and on the head. A third and more behavioural test is often done by the paediatrician at the six-week check-up: a rattle or bell is shaken behind the baby and the baby’s response is noted. This final test is less reliable as the visual cues and body language of the doctor can be distracting.

Older children and adults are tested using pure-tone audiometric tests where sounds (of various frequencies and intensities) are emitted through ear-phones into the ears (either left or right) at different intervals. The child is expected to press a button or raise a hand (left or right) depending on the side the sound is perceived. The audiologist then records the child’s threshold (when the sound is so soft that it is only detected half the time) and plots it on an audiogram. The intensity (loudness, measured in decibels (dB)) is plotted on the vertical axis, and the hori-

zontal axis represents frequency, which relates to the pitch of the sound (high or low) and is measured in hertz (Hz).

Figure 15.2 shows familiar sounds (speech, dogs barking and traffic sounds) and where they are situated on an audiogram in terms of loudness and pitch, giving you an idea of the sounds that deaf children miss.

Based on this audiological assessment the child is then identified as hard of hearing or deaf. The levels of hearing loss can be categorised as shown in Table 15.1.

Once the hearing loss (and level of loss) is identified, the audiologist will identify the type of hearing loss, as this has an impact on the support and interventions offered to the child.

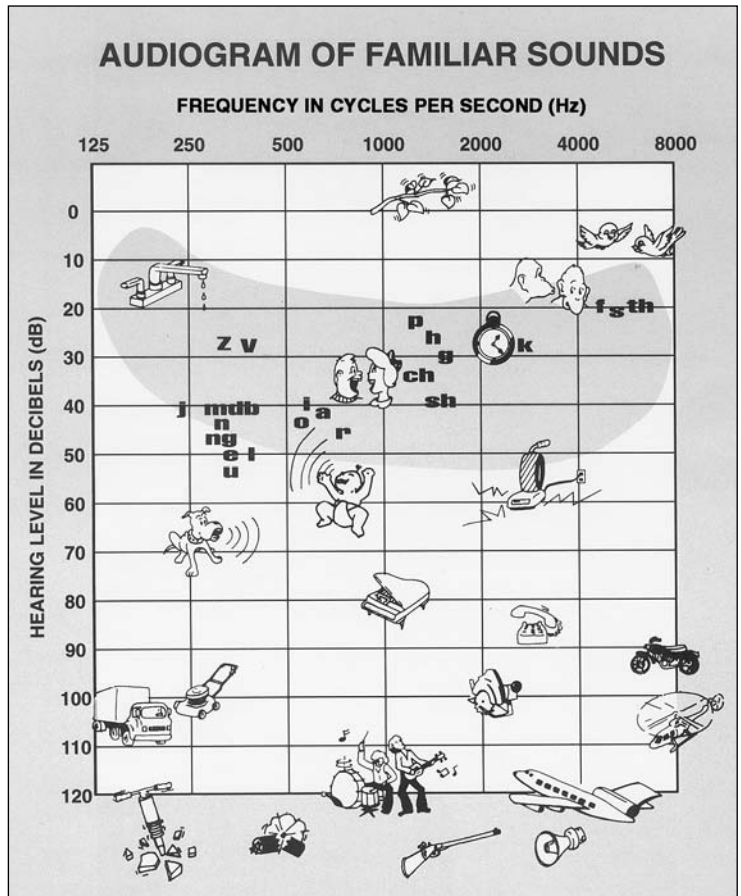


Figure 15.2
Audiogram of familiar sounds

Source: Used with the permission of the American Academy of Audiology

Table 15.1 Levels of hearing loss

	Hearing person	0–25dB
Hard of hearing	Mild hearing loss	26–40dB
	Moderate hearing loss	41–55dB
Deaf	Moderately severe hearing loss	56–70dB
	Severe hearing loss	71–90dB
	Profound hearing loss	91dB+

Source: Adapted from Marschark et al. 2002; Schirmer 2001

15.3.2 Types of hearing loss

There are generally two types of hearing loss – conductive and sensorineural – and each of these results in different kinds of hearing difficulty impacting differently on the child's life.

Conductive hearing loss refers to a problem that occurs in the actual process of conducting the sound waves in either the outer or the middle ear. This can be because of blockages in the ear canal (such as wax build-up), fluid build-up behind the eardrums which can get infected (exacerbated by colds and flu leading to otitis media, for example), perforated ear drums, or damaged ossicles. In general conductive hearing losses affect the volume of the sounds heard and can be improved through medication, surgery or amplification.

A hearing loss caused by problems in the inner ear or in the auditory nerve is called a **sensorineural hearing loss**. In this case, even if the outer and middle ear are in perfect working condition, if the inner ear can no longer convert the sound vibrations into the electrical signals required by the auditory nerve, the brain will not be able to interpret the sounds. Amplification can sometimes aid sensorineural losses, although often such a loss also includes some form of auditory distortion, which cannot be corrected despite the necessary amplification. A combination of both conductive and sensorineural losses is called a **mixed hearing loss**.

A final type of hearing loss that you as a practitioner may come across is the **auditory processing disorder** (or **central hearing loss**) where the child does not technically suffer from hearing loss, but where the brain is unable to interpret the sound that it receives. Central hearing loss is

caused by, *inter alia*, head injuries or damage to the central auditory nervous system and the subsequent inability to interpret sound effectively. This form of deafness is thus not audiological but neurological in nature. Hearing loss can be either unilateral (in one ear) or bilateral (in both ears).

Once the level and type of hearing loss are identified, the age of onset and cause need to be established as these usually have an impact on, *inter alia*, the linguistic and cognitive development of the child as well as on the family relations. Such knowledge is central to understanding the unique needs of the learners and subsequently to developing appropriate support and intervention strategies in the educational context.

15.3.3 Age of onset and aetiology of hearing loss

Children may be either born deaf (congenital deafness) or develop/acquire deafness later. A more useful classification in terms of how deafness will impact on the child's development is in terms of whether it was developed pre-lingually (before language is developed – usually before two years of age) or post-lingually (after language development). Deafness developing before or after the acquisition of language impacts totally differently on the child and thus requires different forms of interventions. We will discuss the issue of language development and intervention later.

Pre-lingual deafness (which is either congenital or acquired before language is developed) can have the following causes:

- **Maternal illness** such as German measles/rubella contracted by the mother, especially during the first trimester of her pregnancy, can cause deafness as the virus attacks the foetus. A second maternal illness known to cause deafness is cytomegalovirus (CMV), a herpes virus that can be transferred to the child by the infected mother through the placenta, through cervical secretions during birth and through breast milk after birth. At present there is no known prevention or treatment, but it can be detected through amniocentesis (Moaven et al. 1995 in Schirmer 2001; Moores 1996).
- **Genetic deafness** means that there is deafness or hearing loss in the family and is thus heredi-

tary in nature. Between 150 and 175 types of genetic deafness have been identified (Bess & Humes 1995 in Schirmer 2001).

- **Birth complications** and/or premature birth (defined as birth before 37 weeks) is also known to cause hearing loss in some infants.

ACTIVITY

Please read Chapter 12 on pre- and postnatal causes of brain injury that may also cause deafness.

Post-lingual deafness is caused primarily through ear infections (otitis media) and meningitis. Other less prevalent causes are accidents and blows to the head, high fevers, mumps, measles as well as side effects from certain medications.

- **Meningitis** is an infection (viral or bacterial) of the central nervous system, specifically the covering of the brain, which could extend into the brain and ears, thus causing deafness. Children who become deafened due to meningitis are usually profoundly deaf, the majority of whom do not benefit from hearing aids.
- **Otitis media** (middle ear infection) occurs when the Eustachian tube becomes blocked and fluid in the middle ear builds up. Antibiotics usually clear up the infection, although grommets (drainage tubes) may be necessary in more severe cases. Chronic otitis media (in areas of poverty where treatment is scarce) can lead to permanent hearing loss (Marschark et al. 2002). Young children most vulnerable to continuous ear infections (such as Aids babies) should be closely monitored in this regard.

One of the reasons that the categorisation of pre- and post-lingual deafness is important is that this is usually a defining category when considering education options for learners who are deaf. Post-lingual deafness (especially in later childhood) means that the child has an English (or any other spoken language) language base for learning and communicating, and this means that the child may possibly continue in his present school with additional support strategies put into place. Pre-lingual

deafness (where the child has not had access to any spoken language) usually means that parents select the signed language route (in this case, South African Sign Language – SASL) and may choose to have the child educated in a school for the Deaf. Conversely, post-lingually deafened learners may be educated in schools for the Deaf and pre-lingually deafened children may be educated orally (either in oral schools for the deaf or in the mainstream). In South Africa we have examples of all of these options, and each will be discussed briefly.

15.4 LANGUAGE AND COMMUNICATION CHOICES

The biggest decision that parents of deaf children will need to make is the decision regarding communication and the related educational method. These options are hugely debated (often referred to in Deaf circles as the “great modality debate”). This can cause immense frustration and stress to parents and learners alike and, due to the impact on their lives, should be an informed decision. The two approaches (which are on opposing sides of the communication continuum) are the oral approach and the sign language approach to communication and education.

The oral approach to communicating with and educating deaf learners advocates the auditory-oral approach to communication. This approach includes auditory training (use of residual hearing), speech and lip-reading and prohibits signing or gesturing of any sort. Oralist methods vary, with some systems placing the emphasis on audition and the use of residual hearing, while others combine audition with visual cueing, using such systems as Cued Speech.²

In oralism the primary goal is the “normalisation” of deaf children to fit better into a hearing world by making them oral: speaking and lip-reading as well as possibly using their residual hearing to its fullest with the aid of assistive devices, such as visual, tactile and auditory aids. Oralists believe that by acquiring spoken language through an intensive focus on listening, comprehensive identification and vigorous audiological support, the deaf child will be fully integrated into the hearing world which is the majority culture (and the

majority family culture, as 90 per cent of deaf children are born into hearing families).

Orally educated children are said to develop better spoken language than those who are educated manually, but to date the findings in the literature appear to be inconsistent (Musselman et al. 1988; Marschark 2001). Those who support the oral method stress the importance of early education and the involvement of parents for the method to be successful. Not only parents but also teachers and the children themselves must be highly motivated to persevere with speech development and ultimate inclusion in mainstream classrooms.

The oralist approach falls within the medical model since it implies that the deaf child is deficient and needs remediation and normalisation. Oralism is a philosophy (and practice) usually supported by hearing people without the input of Deaf people themselves. The effort to make deaf children speak “normally” is arduous, and according to manualists (people who support sign language), could be disadvantageous to the deaf learner’s educational development and psychological health, due to the constant belief that they are “not good enough” and thus not fully acceptable as they are. Furthermore, through the oral approach the deaf learner’s social environment is often restricted and emotional frustration often results.

A benefit of the oral approach can be attributed to the fact that parents and teachers do not need to learn a new language and can thus rely on the spoken language of the community (Sesotho or English for example). An additional benefit is that these learners are said to fit into the hearing community (by being able to speak and lip-read) without the community having to adapt to their unique needs which is, however, in contradiction to the inclusive approach to education.

The **sign language approach** (also known as the manual approach) argues that sign language³ – the natural, barrier-free language of the Deaf – is the first language of the deaf learner, and that the language of the hearing majority (spoken language) is the second language of the deaf learner (World Federation of the Deaf 1993; Brennan 1992; Johnson et al. 1989). Consequently the manual method encourages the use of and exposure

to sign language from as early an age as possible, thus recognising the importance of a critical period in language acquisition (Fischer 1995). In order for natural sign language development to occur (with the same stages of language development as spoken languages), parents need to sign to their deaf child from as early an age as possible, and contact with Deaf adult role models is recommended (Petitto 2000; Brennan 1992; Johnson 1992; Johnson et al. 1989; Kyle & Woll 1985).

The main objective of the manual paradigm is a well-developed deaf child who shows normal language development, normal cognitive skills, a strong cultural identity, social and emotional stability, and second language literacy. This approach falls within the social model on disability, and the majority of the Deaf community support the manual approach. Research into the development of deaf children of deaf parents (DCDP) validates the method empirically as DCDP are found to be superior in terms of English language development and educational achievement compared to deaf children of hearing parents (DCHP) (Johnson et al. 1989; Paul & Quigley 1994). Research also shows that the receptive language of children educated manually is higher than that of orally educated children (Musselman et al. 1988). This area of research – comparing DCDP and DCHP – has, however, also been found to be inconsistent (Marschark 1993, 2000) and further investigation is required.

The effective application of manualism is hindered for the majority of learners since few hearing parents or teachers of the Deaf are sufficiently fluent in sign language to allow for the full development of sign language as a first language. Without a strong first language base, teaching and learning become complicated and the learning of a second language is much more difficult. Consequently manualists believe that the best teachers of the Deaf are deaf people themselves.

The *Draft guidelines for implementation of inclusive education* (October 2002a: 139) supports the manual approach to communication and education of deaf learners as it recognises that language barriers can be “particularly destructive” and that “Sign Language as the medium of teaching and learning enables these learners to develop bi- and multilingualism through Sign Language”. Despite

the clear benefits of being educated in sign language, parents and educators who support oral approaches claim that if deaf children are not exposed to speech from an early age, auditory and oral development are delayed and hindered in their future development. Although many feel that there is justification for this claim, *there must be a clear distinction made between “language” and “speech”*.

Consider the following question:

ACTIVITY

Have you ever found yourself judging a deaf learner who speaks fluently as better or more intelligent than those with less fluent speech? Why might children with “better” speech appear to hearing people to be more intelligent?

Is there a difference between speech and language?

The tendency of hearing people to equate clearly articulated speech with intelligence and linguistic competence is a temptation many hearing teachers and parents, not to mention the wider society, have fallen victim to. Consequently deaf people have paid the price of such misconception, and in order to overcome it one needs to be aware that speech and language are not synonymous.

Another criticism that oralists have of manual systems is that they tend to socially isolate Deaf people from the hearing world in which most of them need to operate and live. The manualist argument in contrast says that to prevent a deaf child from using sign language isolates him from the Deaf community. Thus the social isolation that an orally educated deaf person can suffer comes from not feeling comfortable or fully capable in either the Deaf or the hearing community.

In the search for a successful middle ground approach, the advantages of both the oral and manual paradigms have been combined into what is referred to as “Total Communication”.

Total Communication as an educational approach is seen by its supporters as one that tries to use whatever means are available to teach the individual learner – thus the expression “approach” rather than “method” of education (WheiPing Lou 1994). Total Communication emerged in the 1970s in a drive to include all the

communication channels, singly or in combination, in order to achieve the best results in educating the deaf learner. This approach recognises the varying degrees of deafness – from the hard of hearing to the profoundly deaf – and the different impact each degree of deafness has on language development. The aim of Total Communication is noble: to reach the learner through any means or method necessary, be it through oral or manual modes. However in practice it has come to mean *simultaneous communication* (Woodward 1982) or Sign Supported English (Conrad 1979; Johnson et al. 1989; Johnson 1992; Brien 1992).

Sign Supported English⁴ means that signs are used simultaneously with English speech where the message follows the structure of the spoken language and the sporadic signs merely assist with the spoken message. As it relies mainly on the spoken word in a similar way to that of the oral method of communication, Johnson (1992: 7) refers to Total Communication as “crypto-oralism”. Since Total Communication follows the oral expression of a message, Deaf people experience difficulties, primarily because sign language and spoken English have different grammatical structures.

For a hearing person, signing and speaking at the same time is likely to be both physically and psychologically exhausting. Given that the lexicon and the grammatical structure of the two languages are different, simultaneous communication leads to both the signed and the spoken part of the message being flawed. It is thus suggested that this flawed or telegraphic mode of communication is inadequate as a language of education and becomes a barrier to the learning process itself. There is also increasing evidence that deaf children cannot simultaneously process signs, speech and lip-reading (Luterman 1986: 125). Despite the fact that this approach combines both manual and oral components, neither manualists nor oralists fully support Total Communication.

Even though Total Communication seems to improve general communication between Deaf and hearing people, research indicates that it does not significantly improve the language skills of the Deaf (Moores 1996; Johnson et al. 1989). Despite the weaknesses in the Total Communication approach, it has played an important role in

the evolution of Deaf education. The acknowledgement that signed languages are as important as spoken/written languages initiated the move away from education solely through the auditory/oral mode, and can thus be seen as a breakthrough in Deaf education.

Despite the fact that these approaches (oral and manual) are clearly at opposite ends of the communication continuum, they both have strengths and weaknesses. A strategic combination of these strengths and weaknesses has made way for a new approach to communicating with and educating deaf learners. This new opportunity is not disability focused and is clearly supported by the Deaf community and thus in line with the inclusive philosophy of education. This approach is known as the Bilingual-Bicultural approach to Deaf education.

Bilingualism works from the premise that first language competency is necessary in order to develop normal cognitive processes and for second language development (Cummins 1984; 1991). Bilingualism encompasses the use of two languages and has as its aim a high level of competency in both languages, and it further emphasises the equality of the two cultures (Deaf and hearing), which explains the full title of this approach: Bilingual-Bicultural.

Bilingualism as an approach in Deaf education acknowledges that the Deaf child's first language is sign language and his second language is the language of the hearing family into which he is born. In addition, bilingualism acknowledges that the majority of deaf children (90 per cent) grow up in a hearing community without natural access to their first language, i.e. sign language, or the natural capacity to acquire the spoken language of their families. Consequently, the majority of deaf children do not naturally acquire a first language. This impedes both their academic development and their acquisition of a second language, in this case the spoken language of the hearing culture. Bilingual approaches to education aim to address this problem by recognising both first and second languages.

A crucial distinction between the standard form of the bilingual education model and bilingual education for the Deaf is the additional issue of bimodality, where the one language is visual-ges-

tural (sign language) and the other is written, with the aural-oral component (spoken version of the written language) as an option. An important point to remember when adopting a bilingual approach in Deaf education is that the two languages are equal but not the same, and so should be kept separate in use and in the curriculum.

Rather than viewing Deaf Education as education *through* bilingualism only, it should be viewed as education *for* bilingualism, with the goal of producing learners who are bilingually competent both in sign language and in accessible (usually written) forms of English (or the language of the community). Additionally it should include a knowledge of both hearing and Deaf cultures (Storbeck 1998; Storbeck & Henning 1998; Storbeck & Magongwa in press).

Bilingual education for the Deaf has been described in detail in Mahshie's work (1994) entitled *Educating deaf children bilingually*, in which she looks at the bilingual programmes in Sweden and Denmark. She describes bilingualism as having three basic goals:

- Grade level academic achievement equivalent with hearing peers
- Full participation in society
- Fluency in both the language of the majority and that of the Deaf community (as well as the language of the home – if different from above)

In order for the goals of Bilingual-Bicultural education to be achieved, it needs to be implemented effectively in the classroom, as well as in the school as a whole. This requires the following:

- Teachers who are fluent in signing skills and who understand the relevant theories and the implications for practice
- Institutional support in the way of policy and resource availability
- Collegial support
- Continual training and assessment
- Parental involvement and support
- Involvement of Deaf people in key areas (educators, role models, tutors)

Parents (and teachers) need to make informed decisions, and thus should read and learn as much as they can about the options available to them as

well as know as much as they can about their individual child (hence the preceding discussion on deafness and aetiology). Effectively meeting the needs of the child (as opposed to “fixing the child” or getting involved in political struggles and debates) should be the central focus of the decision.

Whatever the decision, deaf learners will need additional and specialised support within the educational context to meet their unique needs. The inclusive education philosophy focuses on accommodating these diverse needs of the learners, as opposed to fixing or remediating the learners’ experiencing barriers to learning (in this case, deafness). This does, however, not mean that all deaf learners will be accommodated in regular schools, as inclusive education empowers and respects the right of learners and communities to make decisions regarding their own future. There are thus two broad educational options available to parents based on their choice of communication and language: the regular mainstream school setting or the specialised school setting.

15.5 EDUCATIONAL OPTIONS FOR THE DEAF LEARNER

15.5.1 The deaf learner in the mainstream school setting

The following section will discuss working within the mainstream setting, where firstly you as the teacher need to know how to detect hearing loss and secondly how to cope with the identified deaf or hard-of-hearing learner in your class.

We will begin this section with a brief scenario.

CASE STUDY

Mrs Malau feels frustrated as she once again looks across the class to see Pedro chatting to a friend. Lately he seems to be chatting to (and distracting) his friends more and more, especially at crucial points in her class teaching. He is often caught staring out the window dreaming, and this lack of concentration is evident in the poor quality of his work lately. Pedro is a popular boy, but despite this Mrs Malau frequently finds him in fights with other boys accusing them of laughing at and picking on him. She sighs as she realises

that with “symptoms” such as these he probably has AD/HD and likely to be needing medication soon.

Consider how you would begin to profile this learner. Do you have any similar learners in your class? Before you write the child off as one who is naughty or who just cannot concentrate, let us consider how to identify hearing loss in a mainstream class.

(a) Identifying deafness and hearing losses in the class

As an educator within an inclusive environment you need to be observant and vigilant in getting to know your individual learners, as only then can you truly meet their unique needs. The following behaviours and characteristics are some of the manifestations of deafness and some form of hearing loss in the class:

- Children who appear to be dreamers and lack concentration are usually labelled ADD or AD/HD; however, this may be due to some form of hearing loss as the inability to hear discussions or activities effectively can cause attention to wane.
- A child who is hearing impaired may come across as the talkative/disruptive child, as he may be asking his friends what he has just missed, or may be compensating for not understanding by copying the work or answer from a friend.
- A so-called “learning disabled” child may be missing out on information and thus display gaps in his learning (e.g. giving poor or incomplete answers). These gaps may also be reflective of the information gaps experienced due to the hearing loss (e.g. when the teacher turns to write something on the board, all that is said is lost).
- The child who is frequently in fights or displays aggressive behaviour may be reflecting the frustration he feels at not understanding what is going on inside or outside the class. Additionally, if a deaf or hard-of-hearing child sees children laughing, very often he may feel as though everyone is laughing at him. These children often complain to the teacher that their peers are picking on them or teasing them, to the dismay of their friends.

- The fidgeting child may be overcompensating for not understanding ... even when he does concentrate.
- Sometimes the deaf child may become dependent, thus fearful to do anything without the teacher's blessing or advice.
- Speech impairments may also be an indicator that the child is not hearing everything. Often this may come across as a lisping or mumbling, or a refusal to speak in class (which may even be interpreted as an extremely introverted or rebellious personality).

Reread the scenario above and see if you would change your profile from your initial frustration at the overactive boy in the class. This is just one example of how a deaf child (usually one that is within the "hard-of-hearing" bracket) can conceal himself in a mainstream class. In the lower grades and foundation phase a hearing loss can be identified by recognising delays in terms of language and communicative development. If a child is language-delayed in any way (no matter how young it is identified – e.g. the child who is 18–24 months old and does not say any words, or an 8-year-old who still uses many everyday words inappropriately), a hearing test should be recommended and an intervention plan organised and implemented immediately.

Once the deafness/hearing loss has been identified, the teacher needs to know how to deal with it in the class ... thus effectively accommodating the learner's unique needs (Mangiardi 1993).

(b) Supporting the deaf or hard-of-hearing learner in the mainstream class

A key aspect of the proposed inclusive education implementation strategy is the team approach to meeting the needs of learners experiencing barriers to learning. Teachers within the mainstream should readily make use of resource centres and district support teams; however, they must still take the lead and initiative in developing and implementing the learning support strategy.

In order to put together a strategy for the learner, the teacher is encouraged to learn as much as possible about the deaf learner in terms of his full profile. It is acknowledged that each

learner is unique and thus has a set of unique educational needs; however, the following suggested support strategies (Mangiardi 1993) could be used as the core strategies with which to begin developing an individualised support programme:

(i) Vocabulary

Owing to the fact that deafness prevents the incidental learning of language (unless continually surrounded by Deaf signers), the deaf learner frequently has a limited vocabulary with gaps where they are least expected. A basic rule shared by a mainstream support programme is to *never assume anything*. Vocabulary-building strategies will include, *inter alia*, extensive preparation of class work and class notes before they are taught, seeking out potentially problematic or missing vocabulary. This then needs to be pre-taught or caught up.

(ii) Reading comprehension

One of the key challenges for deaf learners internationally is the issue of reading comprehension (which is often influenced by poor vocabulary), as it is a pivotal part of the educational process: each learning area textbook, worksheet, examination or assignment relies heavily on reading comprehension.

(iii) Following instructions

A common problem experienced by the majority of deaf learners is the inability to understand and follow instructions, which once again is closely related to vocabulary and reading comprehension. Once instruction vocabulary has been targeted, learners should be exposed to instructions in terms of their aim, their structure and their intended outcomes. Once learners are provided with the "map" to understanding instructions they will also acquire the confidence required to do the activities.

(iv) Teaching strategies

Firstly, the teacher needs to know all the basic communication strategies: ensuring there is sufficient lighting in the class and that the learner can see the teacher's face and mouth clearly, thus the teacher should stop talking when writing on the chalkboard or when showing a transparency or a

slide. Additionally, all auditory disruptions should be minimised (e.g. air-conditioning, lawnmowers, etc.), and auditory support maximised (FM systems, hearing aids, etc.).

Due to the fact that the deaf learner – even if aided – is a visual learner, teachers should make use of visual cues and visual pedagogy. This will require making use of visual aids and concrete objects as well as effective use of gestures and space when teaching.

(v) Preparing for learning new concepts

The teacher is encouraged to prepare well in advance, providing the learner with an outline of this plan. This will also allow the learner to prepare ahead of time for the lesson, including learning the vocabulary and academic language required. Additionally, because a deaf learner cannot make notes in the class as he needs to watch the speaker all the time, notes should be prepared ahead of time for him to take home to reread and revise.

(vi) Group work (cooperative learning) and class discussions

Within outcomes-based education (OBE) educators are making more and more use of group work and class discussions. Although these are highly beneficial for social construction of knowledge, the learner who is battling to access the discussions (through the visual or auditory modality) will not learn anything as he will not be able to participate.

In addition to meeting strategies (i)–(v), other strategies that would assist in the success of group discussions would be ensuring that the learner is sitting in a visually accessible spot (able to see all the participants and the teacher), pointing to speakers (or getting speakers to identify themselves before they give their input), making use of the board and/or rephrasing to capture key aspects of the discussion, and regularly including the learner in the discussion by asking him questions.

(vii) Dynamic teaching and assessing

A final strategy which should be implemented would be the dynamic approach to teaching,

where learning and assessment are closely linked and never separated into compartments. Thus once learners have learned something and have been assessed, the assessment is used as a tool to re-teach and then reassess, thus empowering the learners through their own learning process.

All of these strategies within the mainstream setting can be provided in either the oral or manual modality, depending on the needs and wishes of the learner. Orally, the teacher needs to be aware of auditory strategies (which we have mentioned) and manually the learner should have access an educational sign language interpreter, thus providing immediate simultaneous access to all learning experiences through sign language.

15.5.2 Supporting the deaf or hard-of-hearing learner in the sign language environment

The second educational option is the sign language environment. The key to creating this environment is to ensure that it is totally accessible through sign language, and in this case South African Sign Language (SASL). This means that teachers need to be skilled users of SASL and trained teachers of the Deaf (with the necessary theoretical and practical educational knowledge), and to provide equal access to equal education (and not just watered-down versions of the curriculum).

This will require that the teachers are highly knowledgeable about Deaf culture and are thus able to present the content in SASL in a visual and culturally appropriate manner. Applying and adapting content for this purpose requires expert knowledge of the language, culture and learning styles of the Deaf learner, as this does not entail simplification or merely teaching half a curriculum. Additionally, teachers of the Deaf should beware of the fallacy that all deaf learners should be given vocational skills, as this becomes oppressive in nature.

When teaching through sign language, very often the assumption is that nothing else is required. This is untrue, as despite the fact that the language is accessible, much incidental learning is missed (often due to late identification and

communication by parents). Consequently the teacher of the Deaf within the sign language environment (or otherwise known as the specialised school for the Deaf) needs to be adequately trained for the job. The seven strategies in section 15.5.1 should also form part of the education strategy.

15.6 ISSUES IN ASSESSMENT

The implementation of the *Education White Paper 6* and thus the philosophy of inclusion has meant that education is learner paced and based, and that all learners receive the necessary support in schools that are responsible for creating conditions for learners to succeed (Department of Education 2002b: 4).

The following adaptive methods of assessment have been recommended by the national Department of Education (2002b: 12–13) for Deaf candidates choosing sign language as the language of instruction (LoLT):

- **Sign language interpreter.** The interpreter conveys the question in SASL and either writes down the signed answer or voices over (if an oral examination is given).
- **Video recording.** Questions are captured on video through sign language and learners answer in sign language, which is video taped and transcribed.
- **Additional time.** All Deaf candidates receive additional time, up to a maximum allocation of 30 minutes for every hour if necessary.

For learners who are in the mainstream, choosing to follow the oral route, the following alternative methods of assessment are suggested:

- When giving instructions the teacher should ensure that these are also provided in writing, that the teacher faces the learner when asking the question (speaking clearly to allow lip-reading), and that the environment has an FM system or induction loop.
- When giving the answer, learners should be allowed extra time and should be allowed a dictionary or thesaurus, or a computer with a grammar check on it.

Additional adaptations in terms of curriculum and assessment for all deaf learners (no matter what communication route they follow) will also need to be made. The following are a few examples: replacing listening exercises and oral tests and examinations with more appropriate alternatives in visual format (for example, rather than listening to a piece of music or a discussion, allow the learner to study the written dialogue or explore a picture); as well as changing content related to music and rhythm, for example, drama and poetry to a visual format (however, some Deaf people show an intense interest in music, so teachers can be flexible). In addition, the first language of the Deaf learner (SASL) should be taught as a first language and Deaf culture should be an additional part of the curriculum. In general, however, curriculum and education approaches (such as OBE, which includes cooperative learning groups, peer assessment, etc.) are the same for hearing and deaf learners, and the teaching strategies and visual pedagogy that ensure effective and successful education experiences for deaf and hard-of-hearing learners are part of the training of the adequately qualified teacher of the Deaf. Such a qualification, although not currently required in South Africa, is a formal requirement for the majority of Deaf education communities internationally.

15.7 CONCLUSION

This chapter gives a brief overview of how educators of the Deaf, in particular mainstream educators, can identify and accommodate deafness in the class. The chapter should be seen as an introductory text only and not as exhaustive, and should therefore be regarded as the beginning of your journey as a lifelong learner in this specialist field of meeting the needs of the Deaf and hard-of-hearing learner.

Endnote³

South African Sign Language (SASL) is a language in its own right, with all the characteristics (following linguistic features) of any spoken language. Rules for sign phrases differ from those for spoken languages as follows: in English, the linear

order of words is central in understanding the meaning; for example “the girl hits the boy” is written in a particular order SVO (subject-verb-object) in order to understand who is doing the hitting – *the girl hits the boy* (S-V-O). If we change the order (linearity) of the nouns, the meaning of the sentence changes – *the boy hits the girl* (S-V-O). In sign language, however, it is not linearity that changes this kind of meaning, but the placement (the position of the sign in space) and direction of the verb. So “The girl hits the boy” is signed as follows in SASL:

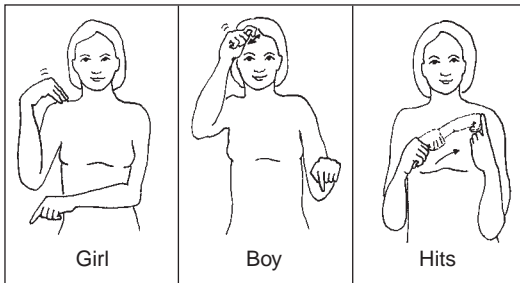


Figure 15.3 The girl hits the boy

If we want to change the meaning, the subject and object change positions by means of the directionality of the verb and not linearly as in spoken English.

Questions

1. What are some of the signals that a child in your class may have hearing loss (or a temporary ear infection)?
2. Both Total Communication and Bilingual education make use of sign language and the spoken language of the community. What are the key differences between these two approaches to communication?
3. As a teacher working with a deaf or hard-of-hearing child in the class, list some examples of the knowledge, skills and attitudes you need to have.

Bibliography

Brennan, M. 1992. The visual world of British Sign Language: an introduction. In Brien, D. (Ed.), *Dictionary of British Sign Language*. London: Faber & Faber, 1–133.

Brien, D. (Ed.). *Dictionary of British Sign Language*. London: Faber & Faber.

Conrad, R. 1979. *The deaf schoolchild: language and cognitive function*. London: Harper & Row.

Cummins, J. 1984. *Bilingualism and special education: issues in assessment and pedagogy*. Clevedon: Multilingual Matters.

Cummins, J. 1991. Interdependence of first and second language proficiency in bilingual children. In Bialystok, E. (Ed.), *Language processing in bilingual children*. Cambridge: Cambridge University Press.

Deaf Federation of South Africa. 1997. *Higher education and the needs of the Deaf Community: discussions with the University of South Africa (Unisa)*. Johannesburg: DEAFSA.

Department of Education. 2001. *Education White Paper 6. Special Needs Education: building an inclusive education and training system*. Pretoria: Department of Education.

Department of Education. 2002a. *Draft guidelines for the implementation of inclusive education, 2nd draft*. Pretoria: Department of Education.

Department of Education. 2002b. *Curriculum 2005: assessment guidelines for inclusion*. Pretoria: Department of Education.

Donald, D., Lazarus, S. & Lolwana, P. 2002. *Educational psychology in social context, 2nd ed.* Cape Town: Oxford South Africa.

Fischer, S.D. 1995. *Critical periods for language acquisition: consequences for Deaf Education*. Paper presented at the 18th International Congress on Education of the Deaf, Tel Aviv, Israel.

Johnson, R.E. 1992. *Possible influences on bilingualism in early ASL acquisition*. Paper presented to the 4th International Conference on Theoretical Issues in Sign Language Research. San Diego, CA, August.

Johnson, R.E., Liddel, S.K. & Erting, C.J. (Eds). 1989. *Unlocking the curriculum: principles for achieving access in Deaf Education. Working Paper 89-3*. Washington, DC: Department of Linguistics and Interpreting at the Gallaudet Research Institute.

Kapp, J.A. 1999. The aurally handicapped. In Kapp, J.A. (Ed.), *Children with problems: an orthopedagogical perspective*. Pretoria: Van Schaik.

Klima, E.S & Bellugi, U. 1979. *The signs of language*. Cambridge: Harvard University Press.

Kyle, J.G. & Woll, B. 1985. *Sign Language: the study of deaf people and their language*. Cambridge, MA: Cambridge University Press.

Lazarus, S., Daniels, B. & Engelbrecht, L. 1999. The inclusive school. In Engelbrecht, P., Green, L., Naicker, S. & Engelbrecht, L. (Eds), *Inclusive education in action in South Africa*. Pretoria: Van Schaik, 45–68.

Luterman, D.M. 1986. *Deafness in perspective*. San Diego, CA: College-Hill Press, Inc.

Mahshie, S. 1995. *Educating deaf children bilingually*. Washington, DC: Pre-College Programs.

Mangiardi, A.J. 1993. *A child with a hearing loss in your classroom? Don't panic*. Washington, DC: Alexander Graham Bell Association for the Deaf.

- Marschark, M. 1993. *Psychological development of deaf children*. New York: Oxford University Press.
- Marschark, M. 2000. *Development and education of deaf children*. International Congress of Educators of the Deaf. Sydney, Australia, July.
- Marschark, M. 2001. *Language development in children who are deaf: a research synthesis*. (ERIC Document no. ED455620). Alexandria, VA: National Association of State Directors of Special Education.
- Marschark, M., Lang, H.G. & Albertini, J.A. 2002. *Educating deaf students: from research to practice*. New York: Oxford University Press.
- Moore, D.F. 1996. *Educating the deaf: psychology, principles and practices*, 4th ed. Boston: Houghton Mifflin.
- Morgans, H. 1999. *Metaphors in South African Sign Language*. Paper presented at the World Federation for the Deaf. Brisbane, Australia, July.
- Musselman, C.R., Lindsay, P.H. & Wilson, A.K. 1988: The effects of mothers' communication mode on language development in preschool deaf children. *Applied Psycholinguistics*, 9(2):185–204.
- Padden, C. & Humphries, T. 1988. *Deaf in America: voices from a culture*. Cambridge, MA: Harvard University Press.
- Paul, P. 1998. *Literacy and deafness*. Boston: Allyn & Bacon
- Paul, P.V. & Quigley, S.P. 1994: *Language and deafness*. San Diego, CA: Singular Publishing Company.
- Petitto, L.A. 1999. The acquisition of natural signed languages. In Chamberlain, C., Morford, J. & Mayberry, R. (Eds), *Language acquisition by eye*. Mahwah, NJ: Lawrence Erlbaum, 41–50.
- Petitto, L.A. 2000. On the biological foundations of human language. In Emmorey, K. & Lane, H. (Eds), *The signs of language revisited: an anthology in honor of Ursula Bellugi and Edward Klima*. Mahwah, NJ: LEA, 447–471.
- Ross, E., Storbeck C. & Wemmer K. 2004. Pre-lingual deafness. In Ross, E. & Deverell, A. *Psychosocial approaches to health, illness and disability: a reader for health professionals*. Pretoria: Van Schaik.
- Schirmer, B.R. 2001. *Psychological, social and educational dimensions of deafness*. Boston: Allyn & Bacon.
- Shakespeare, T. & Watson, N. 2002. The social model of disability: an outdated ideology. *Research in Social Science*, 2: 22–28.
- Storbeck, C. & Magongwa, L. In press.
- Storbeck, C. 1994. *A case study of Bilingual Education in a school for the Deaf*. Unpublished Master's dissertation. Johannesburg: Rand Afrikaans University.
- Storbeck, C. 1998. *A professional development programme for teachers of the Deaf in South Africa*. Unpublished PhD dissertation. Johannesburg: Rand Afrikaans University.
- Storbeck, C. 2000. Bilingual Education for the Deaf in South Africa: can it work? *South African Journal of Communication Disorders*, special edition, 47: 51–59.
- Storbeck, C. & Henning, E. 1998. Experiences and perceptions in a South African Sign Language class. In Weisel, A. (Ed.), *Issues unresolved: new perspectives on language and Deaf education*. Washington, DC: Gallaudet University Press, 53–64.
- Storbeck, C. & Morgans, H. 2000. Making tertiary education accessible to the Deaf learner. In *Proceedings of the southern African conference for the formulation of tertiary education policy and practice for people with disabilities*. Johannesburg, South Africa, October.
- Storbeck, C. & Morgans, H. 2002. Communicating: choosing Sign Language. In Storbeck, C. & Morgans, H. (Eds), *Challenges and choices: an aid for parents of children with a hearing loss*. Pretoria: Van Schaik Content Solutions, 35–43.
- WheiPing Lou, M. 1994. The history of language use in the education of the Deaf in the United States. In Strong, M. (Ed.), 1994. *Language learning and deafness*. Hamburg: Signum, 75–98.
- Woodward, J. 1982. *How you gonna get to heaven if you can't talk to Jesus? On depathologizing deafness*. Silver Spring, MD: TJ Publishers.
- World Federation of the Deaf. 1993: *Report on the status of Sign Language*. Helsinki: World Federation of the Deaf.
- Wrigley, O. 1996. *The politics of deafness*. Washington, DC: Gallaudet University Press.

Notes

- 1 The author wishes to thank Mr Lucas Magongwa (Deaf Education at the University of the Witwatersrand) and Ms Kathleen Wemmer (Speech Pathology and Audiology Department at the University of the Witwatersrand) for reading and commenting on earlier versions of this chapter.
- 2 Cued Speech is a sound-based, visual communication system.
- 3 The aim of this text is not to give an in-depth discussion of sign language as a language, but to act as an introductory text to teachers and practitioners. For more on sign language (and in particular SASL) as a real language there are various texts to read, for example Petitto 1999; Storbeck & Morgans 2002; Klima & Bellugi 1979.
- 4 Any other spoken language can be substituted for English e.g. Sign Supported Afrikaans.

LEARNING IMPAIRMENT

ANNATJIE DEDNAM

Learning outcomes

After reading this chapter you should be able to

- ▶ identify learners experiencing learning difficulties owing to intrinsic learning impairment
- ▶ identify underlying barriers causing learning impairment
- ▶ manage your classroom in such a way that you can accommodate learners with learning impairment that causes attention deficit/hyperactivity disorders (AD/HD)
- ▶ support learners with learning impairment to improve their behaviour and to overcome their problems with schoolwork.

Key terms

learning impairment ♦ *barriers to learning* ♦
attention deficit/hyperactivity disorder (AD/HD)

16.1 INTRODUCTION

ACTIVITY

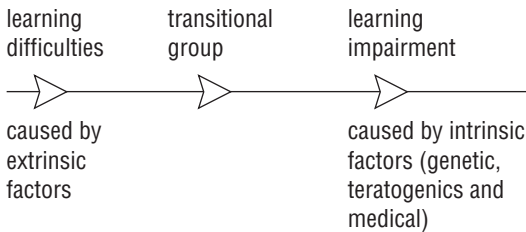
Have you ever come across learners who find it difficult to read and to spell in spite of hours of extra support in the afternoons? They, for example, reverse letters (*b* and *d*) and do not know whether to use the *v* or the *f* sound in spelling. In reading they omit words or a syllable in a word, they exchange one word for another and they reverse letters (*was* for *saw*). Jot down the errors they make regularly.

In almost all classes there are learners experiencing learning difficulties. Some learners' difficulties are so severe that they are not able to cope with any learning area at school. Some problems are less conspicuous and teachers are only vaguely

aware of the fact that these learners should be able to do better. Although they reach the outcomes set for a learning area, their achievement is not according to their potential. Other learners experience difficulties in only some learning areas or some aspects of the learning areas. The work of a number of these learners improves when teachers give more qualitative attention to the learners and to their work. The causes of their learning problems are mostly extrinsic in nature. They experience *learning difficulties* only, while the other group who needs extra intensive support and encouragement are learners with *learning impairment*. These learners experience difficulties in spite of the good teaching and positive attitude of their teachers, as well as stable home circumstances and a stimulating environment. Their problems are of an intrinsic nature and the impairment cannot be alleviated. There is, however, a group of learners whose difficulties are of such a nature that it is virtually impossible to determine whether they experience learning difficulties or learning impairment. Many learners

experiencing learning difficulties often exhibit “learned helplessness”, that is, according to Hallahan and Kauffman (2000: 547), “[a] motivational term referring to a condition wherein a person believes that no matter how hard he or she tries, failure will result”.

Adelman and Taylor (1993: 35) place the origin of learning problems on a continuum which represents them as follows:



In this chapter only learning difficulties caused by neurological impairment will be discussed. Chapter 2 covers the causes of learning difficulties caused by extrinsic factors.

16.2 LEARNING IMPAIRMENT

Previously the term “learning disabilities” was used in South Africa, and most of the American sources still use it. However, with the publication of the *Integrated National Disability Strategy* (1997) where disability is seen resulting from factors in the social environment, a person with a disability is seen as a person with a physical impairment and who is restricted by society from full and equal participation in society.

A learning impairment can thus be described as a general term which refers to a heterogeneous group of neurological disorders in the basic psychological processes of the brain and which manifest in difficulties with language (speaking, reading and writing) and/or mathematical calculations. Such disorders include conditions such as perceptual problems, dyslexia, developmental aphasia and slight brain injury. This excludes learners who experience learning problems as a result of hearing, visual, motor, intellectual impairments, emotional disturbances or environmental, cultural or economic disadvantages (Lerner 1993: 8–9). The main elements necessary to identify such a learner are

- a neurological dysfunction
- the uneven growth pattern of the two hemispheres of the brain
- difficulties in learning tasks
- discrepancy between potential and performance
- exclusion of other causes.

For some researchers the causes of learning impairment are still a mystery (Smith et al. 2001: 96). Smith (1998: 123) estimates that more than 50 per cent of learners who experience learning difficulties are learning impaired. The percentage of learners with learning impairment differs from community to community as it seems that the occurrence of learning impairment and associated learning difficulties is higher in disadvantaged communities. According to Hallahan and Cruickshank (in Hallahan & Kauffman 1991: 129), it is not always clear whether the difficulties learners experience in these communities are due to limited learning opportunities or to learning impairment. Poor nutrition in a child’s first few years may cause learning impairment. As there are a large number of disadvantaged families in South Africa, it is possible that the incidence of learning impairment is quite high.

Learning impairment is primarily caused by central nervous system (CNS) dysfunction, although it may also occur concurrently with environmental disadvantages, intellectual impairment and emotional disturbances. There are learners whose learning impairment cannot be pinpointed although they manifest clear signs of learning impairment. Others who display characteristics of learning impairment do not experience any learning difficulties. Intrinsic and extrinsic factors may also be intertwined to such an extent that it is almost impossible to determine whether the causes of learning impairment may be intrinsic or extrinsic of nature.

Gearheart et al. (1996: 338) wrote that many adults with learning impairment have a continuous struggle when learning and applying knowledge. There are adults with learning impairment who succeed in proceeding to the highest ranks of academic and other career successes, but that is with full effort and hard work right throughout their lives.

16.2.1 The term “learning impairment”

As a discussion of the development of terms and definitions for learning impairment (disabilities) is not applicable for this chapter, the term “learning impairment” as well as the basic characteristics of this condition will briefly be discussed, as these characteristics influence the learners’ outcomes in their school work and behaviour.

Samuel Kirk was the first person to use the term “learning disabilities” early in the 1960s (Hallahan & Kauffman 2000: 160). For more or less five decades this term has been used to describe learners experiencing serious difficulties in one or more of their basic learning areas, which include reading, spelling, writing and mathematics. The definition of this condition varies and is still subject to research, discussion and change. Some researchers like Finlan (1994: 10, 33) and Westman (1990: 37–38) criticise the term “learning disability” because according to them it labels the learners on the basis of their failure to carry out academic tasks. This ignores the fact that the learner may excel in areas other than school work, or that the learner’s style of learning could differ from the style of learning that is taught to him at school (Westman 1990: 59–60). Other objections of Finlan (1994: 10) are that the different disciplines have their own interpretation for the term without giving any indication as to how to help these learners, and that it does not give an indication of the differences between the learning-impaired learners’ actual potential and their level of functioning. There is a focus on the learners’ deficits and their disabilities, but their actual abilities and potential are ignored.

Nowadays in many countries the term has been changed to “children with learning impairment” as this refers only to the inabilities within the learner and not to the learner as a disabled person.

Note

Not all learners show *all* the manifestations of learning impairment – only some of them in a variety of combinations and intensities that vary from learner to learner. They also do not benefit by the same methods of support, although they may exhibit the same manifestations with the same intensity.

16.2.2 Intrinsic barriers causing learning impairment

ACTIVITY

What do you think are the causes of learning impairment? Has a mother ever told you, for example, that her son cannot read because his father also had a reading problem at school and never reads at home?

As already mentioned, learning impairment is a condition mainly situated in the central nervous system, and external problems such as a disadvantaged environment are aggravating causes to learners’ inability to cope with their schoolwork. Hallahan and Kauffman (2000: 168–169) name three categories of causes and divide them into the following:

- **Genetic.** It is often said that “learning disabilities (impairment) run in the family”. Between 35 and 45 per cent of parents and their siblings experience problems in the same field, e.g. reading and speech and language disorders.
- **Teratogenics.** These are agents such as foetal alcohol syndrome and lead poisoning that often cause “malformation and defects in the developing foetus” (Hallahan & Kauffman (2000: 170).
- **Medical factors.** Hallahan and Kauffman (2000: 170) name premature birth as a possible cause of learning impairment. Anoxia – a shortage of oxygen during birth – may also be involved.

Please read Chapter 13A on the causes of brain damage.

The following factors are generally named as causes of learning impairment.

16.2.2.1 Organic and ecological factors

Biochemical and metabolic factors such as an imbalance of neurotransmitters in the brain may cause attention deficits and also learning impairment. The inability to metabolise certain nutrients such as proteins and vitamins may cause hyper- or hypo-activity. The excessive discharge of some hormones such as thyroxin may also cause hyperactivity as it enhances the metabolic tempo of the body which may be a contributing factor to hyperactivity and learning impairment.

16.2.2.2 Environmental factors

Environmental factors are extrinsic barriers but their effect may cause intrinsic barriers that cannot be alleviated. Environmental disadvantages often cause nutritional shortages, and a deficiency of proteins and other nutrients in the brain may cause anatomical and biochemical changes that affect the brain's normal development at an early age. It is, however, difficult to determine if these learners' learning difficulties are caused by a lack of the necessary nutrients resulting in brain dysfunction, or are due to a lack of environmental stimulation.

16.2.2.3 Deterioration and damage of the central nervous system

These are also extrinsic barriers causing permanent intrinsic impairment in the brain, i.e. damage to the brain after birth due to head injuries caused by accidents and child abuse, etc. or by illnesses such as encephalitis, prolonged high fever and poisoning.

16.2.3 The characteristics of learners with learning impairment

Generally, learning impairment refers to a heterogenic group of deviations that manifest in significant problems in acquiring and using listening, reasoning and verbal skills, and in reading and writing. Furthermore, these learners experience difficulties in regulating their own behaviour with regard to social perception and interaction, and often exhibit behaviour problems like **attention deficit/hyperactivity disorder (AD/HD)**.

16.2.3.1 General characteristics of learners with learning impairment

The characteristics of learners with learning impairment discussed by Lerner (1993: 13), Rosner (1993: 15–17), Smith (1998: 139), Westwood

(1997: 12) and Smith et al. (2001: 97–101) are grouped together and summarised.

- There is a significant discrepancy between these learners' potential and academic achievement, and there are substantial delays in their academic achievement.
- They may have a history of late language development.
- They find it difficult to remember new words and their vocabulary is limited. They apply grammatical rules incorrectly and their sentences are immature for their age.
- They may experience pronunciation and articulation problems that affect their ability to communicate fluently with others.
- They have problems using cognitive strategies when learning. They also experience problems during active learning as their metacognitive functions and learning styles are not imprinted. They are unable to solve problems.
- They over-rely on their teacher and peers for class assignments.
- They experience problems in classifying objects according to corresponding characteristics.
- They find it hard to make associations such as identifying corresponding components in words, e.g. *day* and *may*.
- They are easily distracted or are not able to pay attention and concentrate for as long as their peers do.
- Their memory is poor, especially when they have to remember more than one instruction.
- They are disorganised, especially when they have to execute an instruction in a specific order.
- Their poor motivation causes them to have little active involvement in learning tasks.
- Their gross and fine motor coordination are poor. They are clumsy and sometimes seem to be helpless when they have to execute a task.
- Their poor motor coordination and spatial relation skills cause their paperwork and handwriting to be untidy and often nearly illegible.
- Their work pace is slow and they find it hard to complete their work on time.

Note

All learners with learning impairment do not manifest all these characteristics. Some learners manifest more than others and the intensity of the manifestation of the characteristics differs from learner to learner.

- They are disorganised in their approach to learning. They lose their place when they read or when they have to copy information from another book or the chalkboard.
- They have laterality problems, their eye–hand preference is not established and they confuse direction. They also experience directional problems in reading, writing and mathematics.
- The order of the letters in the words they write or read is incorrect.
- They avoid activities that expect them to give lengthy visual or auditory attention. They do not like, for instance, to listen to stories and they avoid doing puzzles.
- They have visual perceptual problems and make errors in letters, words and numbers. They also confuse letters.
- They experience auditory perceptual problems and find it hard to identify letter sounds in the words they hear.
- Their integration of sensory information is poor and they experience problems with letter–sound associations.
- They overreact to noises. They will, for example, press their fingers into their ears to cut out noises.
- Due to emotional problems caused by failure and poor social perception, their motivation and attention is poor. This further aggravates their failure in their schoolwork.

ACTIVITY

Please go back to the first page of this chapter and compare your answers about manifestations of learning impairment you have come across to the ones mentioned here. If you have any manifestations on your list that are not mentioned here, you may supplement this list.

Smith (1998: 147) summarised the characteristics of the social impairment of these learners as follows:

- They display unacceptable social behaviour.
- They cannot predict the consequences of their behaviour.
- They misinterpret social and non-verbal cues.
- They make poor decisions.
- They cannot solve social problems.
- They use social conventions improperly.
- They adapt incorrectly to the characteristics of the person with whom they are interacting.
- They do not pay close attention during classroom assignments.
- They are shy, withdrawn, distractible or hyperactive.
- They are socially naïve – do not know when others are sincere, deceptive or sarcastic.
- They are lonely – rejected by peers.
- They are often victimised by others.

16.2.4 Attention deficit/hyperactivity disorder (AD/HD)

As more than 50 per cent of learners with learning impairment experience AD/HD, special attention will be given to this disorder. According to Hallahan and Kauffman (2000: 177) this is “[a] condition characterized by severe problems of inattention, hyperactivity, and/or impulsivity, often found in persons with learning impairment”. Bley and Thornton (2001: 18–19) also describe these learners as easy distractible by external stimuli which are ignored by most other people, or internal stimuli of which others are unaware. Both these distractibilities manifest in most of these learners. *Sensorial hyperactivity* is more of an attention problem as these learners cannot concentrate on one thing for a long time as everything attracts their attention. They seem to be uninvolved in the work the teachers are presenting and some of them tend to fidget while listening, such as playing with a pencil, drawing, tapping on the table, and swinging or shuffling their feet. On the other hand, *motor hyperactivity* occurs in learners who restlessly move around. They react physically to each sense stimulus and are fidgety, disturbing their own activities as well as those of the other learners in the class.

Diagnostic criteria for AD/HD

The DSM-IV-TR (American Psychiatric Association 2000) uses the following criteria to describe the characteristics of AD/HD. (Knowledge about the identification is essential in order to accommodate these learners so that they can realise their full potential.)

This condition should persist for at least six months. Learners' behaviour should be maladaptive and inconsistent. It should also include six or more of the following symptoms:

Inattention

They often

- fail to give close attention to details or make careless mistakes in schoolwork, work, or other activities
- have difficulty sustaining attention in tasks or play activities
- do not seem to listen when spoken to directly
- do not follow through on instructions and fail to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)
- have difficulty organising tasks and activities

- avoid, dislike, or are reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
- lose things necessary for tasks or activities (e.g. toys, school assignments, pencils, books, or tools)
- are easily distracted by extraneous stimuli
- are forgetful in daily activities.

Hyperactivity/impulsivity

They often

- fidget with hands or feet or squirm in seat
- leave their seats in the classroom or in other situations in which remaining seated is expected
- run about or climb excessively in situations in which it is inappropriate (in adolescents or adults it may be limited to subjective feelings of restlessness)
- have difficulty playing or engaging in leisure activities quietly
- are “on the go” or often act as if “driven by a motor”
- talk excessively
- blurt out answers before questions have been completed
- have difficulty awaiting their turn
- interrupt or intrude on others (e.g. butt into conversations or games)

Bley and Thornton (2001: 18–19) also mention the following as possible manifestations of AD/HD.

- These learners are slow processors.
- They lose their place without being aware that they have lost it.
- They have to be told to stop doing other things to help them to pay attention to the actual work they should be doing.

16.2.5 The consequences of challenging behaviour caused by AD/HD

Besides AD/HD, Bley and Thornton (2001: 20) mention challenging behaviour as an important

characteristic of learners with learning impairment.

- **Hyperactive behaviour.** This causes interrelationship problems between AD/HD learners and their teachers and their peers, and often also between such learners and their parents and siblings.
- **Disinhibition and impulsivity.** This is a condition closely related to hyperactivity and is just as destructive. According to Bley and Thornton (2001: 20), these learners find it difficult to make transitions from one topic to another, such as turning the page of a book to begin a

new topic. They give quick responses to questions that are often irrelevant. They tend to guess wildly as their thoughts are often triggered by something they hear that is irrelevant to the topic. They find it difficult to refocus their attention. Disinhibition and impulsivity may also cause interrelationship problems as these learners do not have insight into the consequences of their behaviour. They react to every stimulus whether relevant or not, and this often causes them to be involved in school quarrels with other learners and leaders. They are unpopular with teachers and other learners at school with the result that they become labelled as “naughty” or “disobedient”. They are known to all learners at the school as well as the teachers and are often blamed for most of the things that go wrong in and around the school.

- **Perseveration.** For Bley and Thornton (2001: 20), perseveration is

the repetition of an activity even though a change is required. ... [Learners] may perform the same operation throughout a page because they do not notice the signs have changed. Or they may continue doing whatever was required in the first problem. Such behavior patterns may be compulsive, not merely careless.

They often find it difficult to change to another activity even if they are aware of the fact that the activity they are busy with is senseless. They are often accused of everlasting nagging about the same thing. They may also (e.g. in mathematics) persist in using the same operation for different mathematical combinations:

$$12 + 10 = 22$$

$$14 - 6 = 20$$

$$4 \times 2 = 6$$

$$24 \div 4 = 28$$

or they may repeat the same answer, especially when the combinations are below each other:

$$4 + 6 = 10$$

$$8 + 7 = 10$$

$$5 + 6 = 10$$

In language they may persist in writing the same type of sentence:

I am very tired.

John is very sick.

Mary is very pretty.

The cat is very hungry.

My dog is big.

My cat is fat.

My dad is big.

My dress is long.

Remember that even gifted learners may have AD/HD.

16.2.6 Inadequate prerequisite skills causing difficulties in learning areas

Note

The prerequisite skills – discussed in this section – that are involved in learners’ inability to achieve adequately in certain learning areas at school are not taught formally after starting with formal schoolwork in Grade 1. By accommodating perceptual exercises while supporting learners in their formal schoolwork such as language, reading, writing and mathematics, it is possible for the learners to overcome these difficulties.

It is also important to remember that some of the following prerequisite skills may be so closely related that it is very difficult to determine the specific one involved in the reading, spelling and writing process or in mathematics. These are only a few examples:

Sensorimotor skills—are the learner’s reaction to sensory stimuli.

- **Difficulty in balance and rhythm** may affect a learner’s spoken language, counting activities in mathematics and handwriting, as rhythmic motoric activities are prerequisites for these skills.
- **Spatial orientation and directionality** is a person’s ability to relate different directions around him to himself, such as *left* and *right*, *above*, *in front* and *beneath*. Difficulties here cause rotations and reversals in reading and writing, and affect the learner’s ability to start a mathematical problem at the right place.

- **Difficulties in speed reaction and movement** affect a learner's movement and may cause writing problems, a slow work speed and even reading problems.
- **Difficulties in tactual skills** may cause hand-writing problems as learners tend to press very hard with the pencil on the paper. These learners' writing pace is very slow and there is often jerkiness in the line quality of the written letters and numbers.

Perception is the ability to give meaning to information gathered by the senses. The most crucial perceptions to enable learners to perform adequately in their schoolwork are visual, auditory and tactual-kinaesthetic perceptions.

- **Visual perception** is the ability to identify a visual stimulus, and organise and interpret it. About 80 per cent of information is gathered through the visual sense. The most important visual perceptions that enable a learner to master schoolwork are:
 - **Visual discrimination** enables a learner to differentiate between symbols and words that almost look alike: *o* and *a*; *3* and *8*; *not* and *hot*.
 - **Form consistency** is the ability to identify an object on the basis of its form. This enables learners to identify words on sight without confusing those that look similar: *where* and *were*; *with*, *which* and *wish*. People often write down a word in order to identify the correct form if they cannot remember the exact spelling thereof.
 - **Visual closure** is the ability to identify a word even if the person cannot see the whole word. This enhances reading speed as the learners anticipate a word instead of looking at every letter detail in the word. A learner, for example, is able to identify the word *aeroplane* as soon as he has read the first two syllables *ae-ro* and has seen the *p* or *pl* of *plane*.
 - **Visual analysis and synthesis** enables a person to analyse words into their letter sounds and to synthesise the sounds into intelligible words. These learners often experience problems with word syllabification as they do not always know the rules that help them analyse words into their syllables, or to synthesise them into a word. Word analysis: *Develop* becomes *Deve-lop* instead of *De-ve-lop*.
- **Visual sequence** is the ability to identify the letters in words in the correct sequence. Problems here cause errors such as reading *beard* instead of *bread*.
- **Spatial orientation** is the ability to determine the direction of objects in space as well as their relation to each other. It is also an important skill to be able to read in the correct direction and to find the new reading line. Problems in this aspect cause reversals and rotation of letters such as *b*, *d* and *p* in words such as *broad* and *board*, and *drop* and *prod* in writing and reading, and of numbers such as 6 and 9. They may even start adding or subtracting two-digit (or more) numbers from left to right instead of from right to left (e.g. $48 + 16 = 514$ instead of $48 + 16 = 64$).
- **Visual figure ground perception** enables readers to read at a specific place in a book without losing the place. When reading, readers are aware of letters and words surrounding the lines and words they are reading but they do not give specific attention to them. Learners with difficulty in visual figure ground perception tend to lose their place in the text, as they are unable to isolate the letters and words they are supposed to attend to from those in the surrounding text.
- **Visual memory** is the ability to remember visual stimuli. Attention is also involved in this skill. If learners do not attend to stimuli they will not be able to remember them. Difficulties with visual memory cause learners not to remember letters and words on sight as well as the numbers and combination signs.
- **Auditory perception** is the ability to interpret and organise the stimuli perceived by the auditory sense.

- **Auditory discrimination** is the ability to distinguish between perceived sounds. Learners with this difficulty find it hard to distinguish between the sounds *d* and *b*; *m* and *n*; and words like *brown* and *drown*; and numbers such as *fifteen* and *fifty*.
- **Auditory analysis and synthesis** is the ability to analyse spoken words into sounds and to synthesise them into words again. This skill is especially important when learners have to write words which they cannot remember how to spell. Learners experiencing this problem tend to leave out letters in words when reading or writing. They may read: *The bird sits in the tea (tree)*, or write *seed* instead of *speed*.
- **Auditory memory and order** is the ability to remember the sounds of letters in the correct order when reading or spelling. Learners experiencing these difficulties find it hard to repeat the order of sounds they have heard. They may be able to analyse a word in its correct order but cannot remember the sounds: a word like *preach* may become *peach*. They also find it difficult to remember information they have heard, such as concepts, rules and steps to follow to solve a mathematical problem.
- **Auditory figure ground identification** is the ability to give attention to, for instance, a specific conversation while other people are involved in other conversations in the same room. Learners who are not able to ignore other incoming auditory stimuli have problems hearing what others say. These learners also experience attention deficits as they listen, for instance, to people talking outside or to a bird singing in a tree while the teacher is explaining concepts to the class.
- **Auditory closure** relies strongly on the learner's knowledge of language structures and vocabulary. Learners with better language abilities find fewer problems with auditory closure. If a learner with difficulties of auditory closure does not hear the whole sentence or every word in a conversation, he is unable to understand what has been said.
- **Tactual-kinaesthetic perception** is the ability to determine the different forms and textures of objects and the movements made when drawing shapes. Learners who experience difficulties here would not always be aware that they are forming letters, numbers and words incorrectly while writing. (People often write a word if they are not sure of the spelling in order to check the correct movements of the written letter, number or word by “feeling” it.)

16.3 ACCOMMODATION OF LEARNERS EXPERIENCING LEARNING DIFFICULTIES IN THE CLASSROOM

As a large number of learners with learning impairment experience AD/HD and most of the others without hyperactivity experience attention deficits, the management of the classroom should be planned and executed carefully.

16.3.1 Inclusive education for learners with learning impairment

Until the early 1990s in South Africa, some learners with learning impairment received specialised support in special schools and classes, and teachers in these schools and classes were trained to teach them. However, insufficient facilities and support were available for learners who were learning impaired, especially in the rural areas. These learners were also labelled by their peers, teachers and community as being “stupid” or “dumb”. With the acceptance of the policy of inclusive education, most of these learners are now taught in mainstream schools. Vaughn and Schumm (1995: 267) warn, however, that inclusive education should be implemented with responsibility and not just for the sake of convenience, because the latter is no more than mainstream dumping.

As teachers have to accommodate learners experiencing learning impairments in the classrooms, they should be motivated to support them by acquiring the necessary knowledge and skills about them and how to support them. They should also purposefully change their attitude towards them, as it is not always easy to accommodate their behaviour and other difficulties, and

to teach them adequately. (Consult Chapter 1 for more information on inclusive education.)

16.3.2 Classroom management

When teaching learners experiencing learning impairment, a number of crucial adjustments need to be made in order to accommodate them in the classroom and avoid disturbances and labelling. Orderly classroom management is especially valuable for hyperactive learners and those with attention deficits. It is based on three principles:

16.3.2.1 Structuring and reduction of stimuli

The learning material should be structured thoroughly beforehand and the content taught systematically to the learners. All material to be used should be ready and available when commencing the lesson. If books and learning aids are handed out during the session, these learners mostly become restless or may lose interest and attention.

16.3.2.2 Reducing environmental stimuli in and outside the classroom

Avoid bright colours and other stimuli such as unnecessary noise. These disturbances distract the learners' attention because they find it difficult to block out irrelevant stimuli in the learning environment.

16.3.2.3 Enhancement of the intensity of relevant materials

Although the teaching material should be limited, the intensity thereof should be enhanced in order to focus the learners' attention optimally on it.

The kind of impairment of each learner should also be taken in consideration when deciding on their placement in the classroom. Hyperactive learners and those with attention deficits should sit on their own in the front of the classroom away from windows and bright wall decorations.

Learners who tend to perseverate should not sit in a place in the classroom where they could count objects or compare them with each other.

ACTIVITY

Why should teachers wear clothes of soft colours and preferably unpatterned material?

Learners with AD/HD may focus on the patterns on the teachers' clothes instead of on their faces and what they are saying.

16.3.3 Accommodation of challenging behaviour and AD/HD

Moss (1995: 249) recommends the following strategies for these learners:

- Minimise the class rules and apply them consistently. Explain the concept of "rules" to the learners. Start with one rule and when the learners comply with it, introduce the following one.
- Reward the learners when they comply with a rule, but do not be too strict with the younger learners by waiting too long to give them the reward. Divide the day's periods into shorter sessions, and reward young learners for complying with the rule over this shorter length of time.
- Keep goals simple initially and acknowledge every attempt a learner makes to improve his behaviour.
- Be consistent – do not warn a learner whose behaviour is unacceptable and then neglect to act on the warning if the learner does not heed it.
- The punishment should be appropriate to the transgression. The intensity of the punishment is of less value than the consistency of it.
- Divert the learner's attention from his poor behaviour by removing him from the centre of the trouble.
- Ignoring poor behaviour has more value than focusing attention on it and thus strengthening the learner's behaviour manifestation.
- The manner in which a teacher should behave towards a learner who manifests poor behaviour is as follows:
 - Determine the reason for the poor behaviour and decide how to react. Explain to a

learner the reason for your reaction and stick to your plan.

- Stay positive and calm during the provocation and focus on the unacceptable behaviour rather than on the learner.
- Discuss the problem with the learner to make him aware of the reason for his behaviour.
- Teachers should not use the session to get rid of their own frustration and aggression as this may cause rebelliousness in the learners.
- Explain to the learners what is expected of them in class and in school and how they can comply. Learners should understand that the teacher intends to help them comply with the rules and be “winners”.

In addition to the accommodation of learners with AD/HD mentioned above, Krüger and Groenewald (2004a: 4–5) give the following accommodations:

- “Help the learner with organization [of his homework, for example]. Parents should preferably be involved and help him with organizing his daily routine, e.g. a checklist for his schoolbag (what must go in the bag to school every day) and the learner must cooperate.
- Let the learner/s sit near you – they should preferably sit with their backs to the other learners to avoid being distracted. Obviously this is not always possible.
- Do not let them sit near air-conditioners, fans, heaters, windows and doors.
- Encourage peer tutoring – stronger learners can help this learner.
- Try not to make too many changes in your classroom routine – this learner does not handle change well. This includes, for instance, changes in seating or teachers, and even outings or sports fixtures.
- Your lessons should have structured presentation because the learner needs structure.
- See that they write down their homework or delegate this chore to one of the other learners (a peer tutor), also known as a buddy.
- Make sure that they follow directions. Break up long sessions of instructions into short simple steps.
- See that the learner/s understand your instructions before they begin the work.
- Frequently touch the learner’s shoulder spontaneously, or make eye contact. If the learner shrinks away from your touch, as might occur in the case of touch defensiveness (the person avoids direct contact), you should develop another signal by, for example, touching your lower eyelid while looking the learner directly in the eyes. (See below.)
- You can develop a signal between yourself and the learner that reminds him or her to pay attention. (Adolescents might be highly sensitive to verbal correction and feel that they are being humiliated in front of the whole class.)
- Praise the learner immediately and repeatedly for any success.
- Encourage the learner to take notes to help focus his or her attention.
- Help the learner to develop self-control by using metacognitive strategies. For example, learners can wear an elastic band round the arm to snap when they find they are losing concentration. (As the teacher, you may not snap the elastic band, only the learner.)
- If the learner is on medication (Ritalin or Ritafen are the most common), make sure that the learner takes it or subtly remind him or her to take it. For instance, you might keep a glass or flask of water in your classroom for this purpose, out of sight of the other learners. Remember that you may not give an opinion on any medication unless you are a medical doctor. For instance, you may not tell the learner that you disagree with the use of medication or that you have read or heard that a specific medication is suspect.
- Encourage the learner to work accurately rather than quickly.
- You can allow extra time so that the learner can complete the work.
- Work can also be reduced.

- Repeat assignments and do not get impatient if the learner asks questions. Most learners with AD/HD do not like to ask questions.
- Seeing that depression is not uncommon for these learners, you should be sensitive to the learner's mood.
- Do not compare this learner with the other learners in your class, for example, by saying 'All the others paid attention and therefore they can do the work. So why can't you pay attention?'
- Support the parents by, for example, referring them to a neurologist if the learner has not yet consulted one. You may also refer them to a support group if you know of such groups."

16.3.4 Accommodation of social problems

Skills that are important for assertiveness and the improvement of social skills are, according to Wehmeyer et al. (1998: 222), the following:

Expression of rights

- Identify and articulate rights, responsibilities, beliefs and values, and differences between assertive, non-assertive and aggressive behaviour.
- Discriminate between the rights of individuals and of groups.

Verbal assertion skills

- Briefly express rights in a concise and direct manner.
- Communicate rights in the first person, and opinions and beliefs appropriately.
- Use appropriate tone of voice, and intonation and timing effectively.
- Respond appropriately to aggression and persist in assertion.

Non-verbal assertion skills

- Use and understand body language, gestures, facial expressions.
- Make appropriate eye contact and use appropriate posture and body positioning.

Expression of elaborations

- Understand and communicate others' feelings, opinions and experiences through, *inter alia*, role-play. (Role-play is to change roles – one learner plays the role of the learner who manifests the negative social skills while another learner plays the role of the teacher.)
- Learn persuasion skills and how to negotiate and compromise.
- Use non-verbal expressions and intonations.

Conversation skills

- Practise listening skills to pay attention.

ACTIVITY

A few skills to support learners with learning impairment have been discussed. Can you give examples of how you would implement these skills? For example, how would you respond appropriately to aggression? With aggression? That would only elicit more aggression from the learner. It sometimes works to lower your voice and speak softly with an angry learner who yells at you.

16.3.5 Cooperative learning

Consult Chapter 4 for more information on cooperative learning.

The advantages of cooperative learning for learners experiencing learning difficulties are as follows:

- **Intrinsic motivation.** The learners' interests, attention, skills and knowledge of content improve.
- **Social development.** A feeling of solidarity develops.
- **Ego integration.** The learners learn to acknowledge and appreciate others' contributions.
- **Awareness of own abilities.** They develop self-confidence and awareness of their own abilities and skills.
- **Development of a feeling of solidarity.** Mutual respect develops.
- **Active participation.** Each member of the group is involved.

- **Peer tutoring.** Learners help each other.
- **Individual support by the teacher.** The teacher has the time to support individuals in the group.

The criteria teachers should keep in mind when including these learners in groups are the learning content, the skills the learners should master and the purpose of the exercise. The learners' language ability and motor skills, their experiences, interests, working speed, motivation, behaviour, personal characteristics, age (to a lesser extent) and gender (for older learners) are also important aspects when compiling a cooperative learning group that includes learners experiencing learning impairment.

What aspects should you keep in mind when arranging a group including a learner experiencing a learning impairment?

The following aspects should be taken into consideration:

- Hyperactive, noisy and dominant learners should not be in the same group.
- Never include a quiet, withdrawn learner in a group of chatty and domineering learners.
- Do not include an older learner in a group of younger ones or vice versa.
- A learner experiencing serious learning impairment should not be included in a group with bright learners who are all doing well at school.
- Do not include one girl in a group of boys in the higher classes and vice versa.
- Very good friends should not be together in a group as they may form a clique against the rest of learners in the group.

16.4 SUPPORT TO LEARNERS EXPERIENCING LEARNING DIFFICULTIES

16.4.1 General support

Before starting with either individual or group support to learners experiencing learning difficul-

ties, assessment should be done of their situation, attitudes, behaviour and achievement in school-work as well as of their social skills.

ACTIVITY

How would you assess a learner who experiences learning impairment? Why is it necessary to interview the parents?

Please read Chapter 3. Parents need to be interviewed because they can provide information about the pre-school life of the learner as well as previous kinds of support. The learner may have received occupational therapy while attending an early childhood development centre.

16.4.1.1 Outcomes-based education

According to Hallahan and Kauffman (2000: 486) outcomes-based education and learning “emphasizes products”, and according to Gearheart et al. (1996: 100), “outcomes are minimum requirements that the students are expected to achieve” in each of the learning areas for the various grade levels. The year plan for each grade provides the outcomes that average achievers in a specific grade should reach in order to be ready to proceed to the next grade. These outcomes are not rigid or prescriptive to the specific information learners should have mastered by the end of each school year. Some learners, such as gifted ones, proceed quickly through the information and processes mentioned in the year plan and therefore the outcomes for these learners may be at a higher level than for the rest of the class. Outcomes for learners with learning impairment may be at a lower level and less information is expected from them than from average learners in the class. The crux of the outcomes is to teach these learners with learning impairment to acquire the basic information and processes required for the specific grade. As they are not intellectually impaired and are able to reach the supposed outcomes or even a higher level of outcomes than described in the year plan, the methods and strategies used to accommodate them should be adapted in such a way that they achieve the highest outcomes level possible. In order to support them to acquire the necessary skills and know-

ledge, the information and text may be simplified or even decreased, and the methods and strategies should be applied according to the learners' abilities.

16.4.1.2 Accommodations in administering assessment material

In order to determine whether a learner with learning impairment has mastered the different learning areas, certain accommodations should be made to the assessment procedures and material, namely the format, content and language.

Procedures

As many of these learners find reading difficult, the questions should be read together with the learner if the assessment is not about reading per se. However, some of the work has to be read by the learner himself and this reading material should be adapted to enable the learner to read it.

- Decide on the work that the learner should read himself.
- Allow enough time for the learner to complete the work.
- Repeat questions if necessary, but do not give any indications of the answer to the question or the procedure to solve the problem.
- As these learners experience attention deficit problems, allow for breaks when it seems that they have become tired and are no longer giving optimal attention.

Format

- Owing to attention problems, avoid pictures that are too small or too big with unnecessary lines and detail.
- The size of the font should be suitable for the learner.
- Avoid too much information on a page.
- Space the text and pictures in such a way that the pictures do not attract the learner's attention away from the written text.
- To ensure that the learner concentrates on the relevant information, keep the space between the information clean.

Content

- Decrease the number of answers to be given. Stick to only one or two of a certain type of question and answer, instead of four or five of a kind.
- Reduce the content in general by excluding information that is not important to explain the concept.

Language

- Shorten and simplify the sentences and words without losing important information.
- Change names and objects to make the information easier to read, e.g. change the sentence *Andrew has 20 marbles* to *Ed has 20 sweets*.

16.4.1.3 Support learners to experience success and to accommodate them through their strengths

To experience success is one of the main motivations for learners to try harder and achieve optimally within their abilities. Concentrating on learners' strengths instead of what they cannot do will increase their chances of success. The feeling of success will enhance their attention span and improve their attitude towards school and specific learning areas.

Very few of the learners with learning impairment experience problems in all learning areas or underlying skills (*sensorimotor skills, perception – visual and auditory – and tactual-kinaesthetic skills*). It is therefore important to know their difficulties and strengths. This knowledge will enable the teacher to concentrate on learners' abilities in order to try to improve or overcome their inabilities. When teachers concentrate on the learners' strengths when supporting them, they should never ignore the difficulties they experience. Rather try to strengthen these difficulties than to circumvent them totally.

If a learner who experiences difficulty with visual memory finds it hard to remember the spelling of high-frequency sight words, it is possible to accommodate the problem by using cognitive strategies such as discussing the visual patterns of the words. Such learners may even use other intact modalities such as auditory skills by applying mnemonics, for example:

- **Cognitive strategy.** In the word *quite*, the letter *q* is always followed by a *u*.
- **Mnemonics** (techniques that help people remember information). Mnemonics in the form of rhymes, songs or picture images, depending on the learner's difficulties and strengths, can be invented to help the learner to remember words, formulae and other information.

ACTIVITY

How would you teach the learners to spell *difficulty* by means of mnemonic techniques?

We can sing it out as follows: *Mr D, Mr I, Mr F-F-I, Mr C, Mr U, Mr L-T-Y.*

16.4.1.4 General support in connection with problems in schoolwork

When working with learners experiencing learning impairment, the following guidelines could be taken into consideration:

- Do not assume that the learners have already acquired the skills and pre-knowledge to accommodate the new concepts to be taught.
- Explanations when teaching new concepts should be specific, purposeful, direct and clear.
- Establish dialogue with the learners and be sensitive to non-verbal behaviour signs of stress, aggression, fear, etc. and react sensitively towards them.
- Give the learner time to think before answering questions.
- Repeat instructions.
- Avoid rigidity and vary the teaching methods.
- Do not presume that all learners will benefit by the same methods, even if these methods are successful with most other learners.
- Instead of exercising prerequisite perceptual skills, only accommodate these skills while teaching academic work such as language, reading, spelling, writing and arithmetic.
- Let the learners experience success by assessing their work on an ongoing basis in order for them to be aware of their progress.
- Divide the tasks into small steps which the learners understand and are able to accommodate.

- Use demonstrations when explaining information.
- Guide the learners by means of visual and auditory stimuli.
- Use simple language when giving instructions.
- Choose topics that would interest the learners and which are within their learning context.

Cognitive support

The main outcome of cognitive support is to enable the learners to give meaning to stimuli in their surroundings. This is done by supporting them to actively attend to and perceive stimuli received through their senses and to build up experiences through self-activities – accentuating their own initiative and actively involving them in the learning situation. Learners should also be provided with learning strategies such as grammatical and spelling rules and problem-solving strategies when they come across written language and mathematics. Also, provide impulsive learners and those with attention deficits with learning techniques such as study methods and mnemonics.

16.4.1.5 Accommodating reading problems that learners may experience

There is a wide range of special concessions that apply to reading problems. (Notice 2432 of 1998 describes subsection 3(4)(i) of the South African Schools Act of 1996 – Act 84 of 1996 – and contains information on, *inter alia*, learners experiencing barriers to learning. Interpretation of this subsection has resulted in several special concessions.) The learner should be assessed to determine the extent of the reading problem. Depending on the school's infrastructure and cooperation with the district office, the following concessions can be implemented:

- Oral assessment, also known as amanuensis, when an independent person records the learner's answer verbatim
- Reading aloud to the learner (e.g. question papers)
- Extra time, which usually varies from five to 15 minutes per hour. In some cases work can be rephrased.

It remains important that any of these concessions is implemented as unobtrusively as possible, since learners can be highly sensitive to any form of labelling (Krüger & Groenewald 2004a: 12).

Learners experiencing reading problems also often experience difficulties with learning, especially if they have to read the work. Tape aid, i.e. work recorded on audiocassette, is recommended in such cases. When reading aloud on tape, it is advisable to condense the work – to demarcate it, in other words. Learners then listen to the tape and follow the work in the manual when they learn. Technology can also be very useful for this option. A special computer program makes it possible to record a voice and save it as a file. This file can also be emailed (if the reading takes place at a central point) and the recipient can open it and listen to it. This form of technology holds great promise for the future, because it will obviate individual recordings (by parents or friends). One condition is that the recipient must have access to the essential electronic equipment. If the learner cannot afford a tape recorder, another person, such as a parent or sibling, could read the work aloud. This last option requires much dedication from the reader and is time-consuming.

16.4.1.6 Humour and learners with learning impairments

Humour is important to relieve anxiety in these learners which is caused by their inability to actualise their full potential. However, Gearheart et al. (1996: 391) warn that humorous comments must never be used at the expense of the learner. According to them “teachers who are self-confident are able to use humorous comments at their own expense” as it is important for these learners to experience laughter as a relief of stress and a means of togetherness.

16.5 CONCLUSION

Almost all classes in the mainstream include learners experiencing learning difficulties. Most of these learners’ work improves with quality attention and support by teachers and parents.

Learners with learning impairment belong to a heterogeneous group with a common character-

istic, namely difficulties in mastering academic work, especially reading. Previously the term “learning disabilities” was used to classify these learners in one or other group of impairments. There are still some countries that use the term “disabilities”. Learning impairments may be caused by organic, ecological and environmental factors, and deterioration of and damage to the central nervous system. Besides learning difficulties, these learners often experience emotional and social problems, and there are a number with attention deficit/hyperactivity disorders (AD/HD) which cause disinhibition and problems with interrelationships. Often they are unpopular and cause frustration to peers and teachers alike.

Learners with learning impairment also experience difficulties with sensorimotor skills, balance and rhythm, and visual and auditory perception skills.

To accommodate these learners, teachers should make special adaptations in their management of the classroom in order to support them in their learning and other difficulties. They should also make special arrangements within the inclusive classroom situation to ensure that all learners benefit from the teaching and support.

CASE STUDY 1

Identify a learner experiencing learning difficulty in the classroom and determine the systemic factors causing the learner’s problem.

CASE STUDY 2

Identify a learner with learning impairment in the classroom.

- Determine the cause of the learner’s impairment by means of an interview with the parents.
- Determine the manifestations of impairment of the learner through interviews with the learner and parents.
- Determine the learner’s difficulties in spoken language, reading, spelling and/or written work as well as mathematics through thorough assessments.
- Determine the other characteristics of the learner’s learning impairment and give a full explanation of these characteristics.

- Make recommendations for classroom management to accommodate the learner.
- Describe the kind of support and strategies that may help the learner to accommodate his difficulties in general (behaviour, etc.) and in schoolwork.

Questions

1. Discuss the main characteristics of learners with learning impairment.
2. Indicate how you would support a learner with AD/HD to pay attention in the classroom and give his optimal attention during a lesson.
3. Describe briefly how you would accommodate a learner's assessment material to enable you to determine the learner's actual knowledge.

Bibliography

Adelman, H.S. & Taylor, L. 1993. *Learning problems and learning disabilities*. Pacific Grove, CA: Brooks/Cole.

American Psychiatric Association (APA). 2000. *Diagnostic and statistical manual of mental disorders*. Text revision (DSM-IV-TR), 4th ed. Washington, DC: American Psychiatric Association.

Bley, N.S. & Thornton, C.A. 2001. *Teaching mathematics to students with learning disabilities*, 4th ed. Austin, TX: Pro-Ed.

Finlan, T.G. 1994. *Learning disability: the imaginary disease*. London: Bergin & Carver.

Gearheart, B.R., Weishahn, M.W. & Gearheart, C.J. 1996. *The exceptional student in the regular classroom*, 6th ed. Englewood Cliffs, NJ: Merrill.

Hallahan, D.P. & Kauffman J.M. 1991. *Exceptional learners: introduction to special education*, 5th ed. Boston: Allyn & Bacon.

Hallahan, D.P. & Kauffman, J.M. 2000. *Exceptional learners: introduction to special education*, 8th ed. Boston: Allyn & Bacon.

Krüger, D. & Groenewald, S. 2004a. *A practical guide for educators to accommodate diversities in inclusive education – secondary schools and colleges*. Bapsfontein: OBE Publishers

Lerner, J.W. 1993. *Learning disabilities: theories, diagnosis and teaching strategies*, 6th ed. Boston: Houghton Mifflin.

Moss, G. 1995. Developing positive behaviour. In Moss, G. (Ed.), *The basics of special needs: a Routledge/special children survival guide for the classroom teacher*. London: Routledge, 239–253.

Rosner, J. 1993. *Helping children overcome learning difficulties*, 3rd ed. New York: Walker & Company.

Smith, D.D. 1998. *Introduction to special education: teaching in an age of challenge*, 3rd ed. Boston: Allyn & Bacon.

Smith, T.E.C., Followay, E.A., Patton, J.R. & Dowdy, C.A. 2001. *Teaching students with special needs in inclusion setting*, 3rd ed. Boston: Allyn & Bacon.

Vaughn, S. & Schumm, J.S. 1995. Responsible inclusion for students with learning disabilities. *Journal of Learning Disabilities*, 28(5), May: 264–270.

Wehmeyer, M.L., Agran, M. & Hughes, C. 1998. *Teaching self-determination to students with disabilities: basic skills for successful transition*. Baltimore, MD: Paul H. Brookes.

Westman, J.C. 1990. *Handbook of learning disabilities: a multisystem approach*. Needham Heights, MA: Allyn & Bacon.

Westwood, P. 1997. *Commonsense methods for children with special needs: strategies for the regular classroom*, 3rd ed. London: Routledge.

INTELLECTUAL IMPAIRMENT

17

CECILE JOOSTE & MARTIN JOOSTE

Learning outcomes

After reading this chapter you should be able to

- ▶ understand the concept of intellectual impairment
- ▶ understand the different causes of intellectual impairment in learners and how it influences their level of intellectual functioning
- ▶ understand the consequences of intellectual impairment for learners
- ▶ identify cognitive difficulties experienced by a learner with an intellectual impairment, using the suggested systems model
- ▶ formulate suitable support strategies and interventions for the cognitive difficulties of learners with an intellectual impairment
- ▶ understand and implement your role as mediator
- ▶ evaluate any lesson or interaction with learners to ensure mediated learning experiences for all the learners in your class.

Key terms

intellectual impairment ♦ *mental handicap* ♦ *mental retardation* ♦ *mental disability* ♦ *cybernetic model for teaching practice* ♦ *cognitive development* ♦ *mediated learning experience* ♦ *teaching learners with intellectual impairment*

17.1 INTRODUCTION

Intellectual impairment has been a topic of discussion for more than 2 300 years. Greek philosophers such as Plato and Aristotle gave us some of the earliest descriptions of the differences between gifted and less-gifted persons. It was, however, only during the last two centuries that intellectual impairment as a phenomenon was more clearly defined (Lea & Foster 1990: 4).

In describing the condition of intellectual impairment, different terms like “idiot”, “imbecile”, “retarded”, “mentally disabled” and “men-

tally handicapped” were used at different times during the course of history, some as early as 1489 in late Middle English literature (Sinason 1993: 43–47). Many of these terms became unacceptable to professionals as well as to parents because of the negative meaning that they all developed over time. Unacceptable terms were then replaced with new terms, which appeared to be more positive and acceptable. However, the same cycle repeated itself when the “new” terms also acquired a negative connotation and were replaced yet again (Fraser & Green 1991: 1). This continuous change in terminology is perceived as a clear indication of a desperate struggle to describe and understand this very complex human condition (Sinason 1993: 43–46).

In recent South African publications, for example the *Education White Paper 6*, the terms “mental disability” and “intellectual impairment” are used (Department of Education 2001: 14, 25). In this

chapter we will refer mainly to “intellectual impairment”. However “mental retardation” and “mental disability” are used extensively in international research publications.

Regardless of the terminology used, many teachers in South African schools are confronted daily by the educational needs of learners experiencing intellectual impairment. Intellectual impairment is actually more widespread than any of the other impairments described in this book. It is therefore important that all teachers equip themselves to support these learners and to facilitate optimum cognitive development. Intellectual impairment is a very complex phenomenon and teachers would be strongly advised to read more extensively than the offering of one chapter in a textbook.

In the first half of this chapter the emphasis will be on recognising the learners with an intellectual impairment. In the second half a model will be discussed that could be used to identify and understand some of the barriers to learning that these learners experience. Finally, various suggested support and intervention strategies will be provided to overcome or at least minimise the effects of these barriers to learning in the educational context.

17.2 DEFINITION OF INTELLECTUAL IMPAIRMENT

Defining a phenomenon such as intellectual impairment has interested many academics and researchers from different disciplines for many years. Their attempts have not always been successful and could even have created some confusion, because educationists tend to define the phenomenon differently from the way physicians, psychologists, sociologists or legal professionals do. The latest definition of the American Association on Mental Deficiency (AAMD) reads as follows:

Mental retardation refers to substantial limitation in present functioning. It is characterized by significantly sub-average intellectual functioning, existing concurrently with related limitations in two or more of the following applicable adaptable skills areas: communication, self care, home living, social skills, community use, self direction, health

and safety, functional academics, leisure and work. Mental retardation manifests before age 18 (Culatta & Tompkins 1999: 71).

This definition makes provision for both the significantly lower intellectual functioning of learners experiencing an intellectual barrier to learning and for their problems in adjusting to the conventional social norms of society. Because this condition manifests during the early childhood or school-going developmental period, it affects education.

In education there is a need for a more comprehensive approach than the definition proposed by the AAMD. We also need to become aware of the prevalence of intellectual impairment and understand the causes as well as its effects on the level of intellectual functioning of the individual. In addition, understanding the consequences of an intellectual impairment for the learner is also required. Teachers should be able to identify these learners and understand the barriers to learning that they experience. They should be capable of providing the required level of educational support to them whether in an ordinary school, a full-service school or in a special school as a resource centre (Department of Education 2002).

17.3 PREVALENCE OF INTELLECTUAL IMPAIRMENT

Establishing the real prevalence of intellectual impairment is difficult because factors such as the identification system used, the level of technological development of the community and the socio-economic level of the particular group should all be taken into account (Archer & Green 1996: 123–129; Jooste 1997: 7–8).

In general, some local experts estimate that approximately 3 per cent of the South African population experience an intellectual impairment (Du Toit 1991: 303; Grover 1990: 165).

Other local authors maintain that when abject poverty occurs, the prevalence may even be double the expected figure (Donald 1993; Grover 1990: 164; Skuy & Partington 1990: 152). Even if only 3 per cent of the school population is involved as described in the *Education White Paper 6* (Department of Education 2001: 15), more than 300 000 learners in South African schools can

be expected to have an intellectual impairment. This is an important reason for every teacher to learn more about this type of barrier to learning. The question now arises: what are the causes of intellectual impairment and how does it affect the level of cognitive functioning of the individual?

17.4 CAUSES OF INTELLECTUAL IMPAIRMENT

The causes of intellectual impairment can be rather complex (Department of Education 2002: 131–141). It can be caused by: (a) **extrinsic factors (contextual factors)** within (i) the centre of learning (school), (ii) the educational system or (iii) the broader social, economic and political context, and/or (b) **intrinsic factors** within the learner (genetic, biological, physical and/or psychological factors). Different combinations of these factors manifest in different individuals and will affect their level of functioning in a unique way.

The current understanding of intellectual abilities and the nature of intelligent behaviour emphasises a complex reciprocal interaction between intrinsic and extrinsic factors (American Psychiatric Association 2000; Horowitz & Haritos 1998; Nevid et al. 2003). The individual contributes actively towards these influences, as the final outcome is also shaped by the extent of the vulnerability or resilience of the particular individual.

17.4.1 Extrinsic factors causing intellectual impairment

Even though Chapter 2 deals with many of the environmental factors affecting learners, there are specific factors precipitating intellectual impairment.

ACTIVITY

After reading Chapter 2, write down the extrinsic factors that may contribute to intellectual impairment and why.

Where mainly extrinsic causes exist, learners more often show only mild or moderate levels of intellectual impairment and slow but normative

cognitive development (Mwamwenda 1995: 437–439; Stoneman 1998: 670).

- **Poverty.** The poverty level of a particular household or community will negatively affect the intellectual development of its children because the basic living conditions for intellectual development are lacking (Stoneman 1998: 678–680). Children under these conditions very often encounter inadequate housing and medical care, sterile learning environments, restrictions in their movement and freedom, and a poor diet. Their home environment is frequently disorganised and unpredictable, and parents often spend little time interacting with their children (Owens 1993; Department of Education 2002).
- **Linguistic deprivation.** These families often have a very basic and concrete style of communication, which includes short sentences and simple vocabulary (Du Toit 1991: 361). Children who are exposed only to a poor language model also find it difficult to understand new concepts or to manage large quantities of learning material when they go to school. This becomes worse when their home language differs from the language of teaching and learning at school (Department of Education 2002: 139–140).
- **Low literacy level of parents.** This influences their ability to guide and assist their children in their schoolwork. Where these parents are not recognised and empowered as primary educators, learning breakdown occurs (Department of Education 2002: 139–140).
- **Unsuccessful child-rearing practices.** Research has found that poor families often manifest child-rearing practices that are not conducive to cognitive development. Parents often explain less and act more; they expect obedience without explaining the reasons for it; they are more likely to use physical punishment; they often act impulsively based on their feelings rather than logical reasoning; and they usually do not encourage their children to think and to motivate their own choices, or to make decisions for themselves (Owens 1993: 568; McLoyd 1990: 322; Bjorklund & Bjorklund 1992: 343–344).

- **Lack of motivation.** When the basic living needs are not met, parents have to spend all their energy finding essentials like shelter and food, leaving little or no time or energy for interaction with their children. The parents in families living in poverty are also inclined to focus only on short-term problem solving as they do not necessarily believe that they can make any long-term difference to their circumstances – a model that their children will probably also follow.
- **Lack of schooling.** Children living in poverty, whether in a rural or urban environment, often do not have access to schools. They will then not develop the kind of cognitive skills required in a technologically sophisticated society.
- **Poor nutrition.** This will affect the pregnant mother as well as the child. It is especially during the later stages of the pregnancy that maternal malnutrition affects the child, especially in terms of brain growth (Bjorklund & Bjorklund 1992: 10, 11, 87). After birth these so-called “foetally malnourished babies” are even more at risk if they live in an impoverished environment. Research has indicated that a prolonged protein deficiency in any child could lead to intellectual impairment (Grantham-McGregor et al. 1994).
- **Environmental toxins.** Ingesting chips of lead-based paints may cause brain damage and intellectual impairment (Nevid et al. 2003: 451). Drug and alcohol abuse may also cause foetal damage and foetal alcohol syndrome with concurrent intellectual impairment.
- **Poor medical care.** Primary as well as secondary medical care is often lacking or inaccessible, in which case poor pre-, peri- and postnatal medical care may cause intellectual impairment.
- **Diseases such as HIV/Aids.** One of the present social problems often encountered by teachers is young children becoming the head of a family and having to raise their siblings. This slows down their own cognitive development, as they cannot attend school regularly. The implication in these child-headed families is that siblings are deprived of adequate cognitive

stimulation (Department of Education 2002: 134–135).

- **Harmful and negative attitudes.** The negative and harmful attitudes towards social diversity that may be expressed in our society in general, and by some educators in particular, have serious implications for learners experiencing intellectual barriers to learning. This often manifests itself in the negative labelling of learners as “slow learners”, “repeaters” or, even worse, “uneducable” (Archer & Green 1996: 125–127; Jupp 2002: 10–14; Department of Education 2002: 136–137). Educators who believe these labels neglect these learners and their educational needs, as they expect them to fail in any case.

17.4.2 *Intrinsic factors causing intellectual impairment*

There are some identifiable organic and personal factors affecting the level of intellectual functioning in a particular individual. Intrinsic factors can often eventuate in more severe forms of intellectual impairment and atypical cognitive processes (Stoneman 1998). These intrinsic factors often appear in combination with extrinsic ones. In-depth information can be obtained from the original sources: MacGillivray (1991); Thaper et al. (1994); Werner (1988); Whalström (1990); and Whinship (2003).

17.4.2.1 *Chromosomal anomalies*

Human beings have 23 sets of chromosomes divided into two major groups, namely the autosomes (the name for chromosome pairs 1 to 22) and the sex chromosomes (the name for pair 23). The sex chromosomes consist of an X and a Y chromosome which determine the sex of the individual (XX – female and XY – male). Chromosomal abnormalities of a structural or numerical kind could occur before or during fertilisation and will affect the development of the foetus to such an extent that certain characteristics are noticeable at birth.

Abnormalities of the autosomes

The most common autosomal abnormality to cause intellectual impairment is **Down syndrome**

(previously known as Down's syndrome) (Nevid et al. 2003: 448). John Langdon Down diagnosed this condition in 1860 but it was only in 1959 that geneticists discovered the associated autosomal abnormality. There are three identifiable types, namely:

- **Trisomy 21** is a numerical abnormality where there are 47 chromosomes instead of 46. This applies to 95 per cent of all individuals with Down syndrome.
- **Mosaic Down syndrome** occurs when there is a numerical error during the second or subsequent cell divisions, producing one cell with 47 chromosomes while other cells have the normal 46 chromosomes. These individuals have a mixture of the normal and the deviant types of cells in their bodies and the relationship between these two groups of cells determines how prominent the Down syndrome symptoms will be. Only 5 per cent of all people with Down syndrome fall into this category.
- **Translocation Down syndrome** is a structural abnormality where extra chromosome 21 material is available and it manifests as Down syndrome. In cases where the parents or ancestors had this kind of structural error, they can be a carrier of the condition and their children may inherit it.

The **characteristics** of persons with Down syndrome vary from individual to individual. There is, however, a resemblance between individuals almost similar to the characteristics that are found among family members. Depending on the individual, the effect of Down syndrome on intellectual functioning may vary from mild to severe. There are, however, other distinctive features: a round face; a protruding tongue due to a small oral cavity – often manifesting a deep groove; a broad skull; a short wide neck; a downward-sloping fold of skin (the epicanthic fold) at the inside corners of the eyes, which gives the impression of slanted eyes; a short flat nose caused by the underdevelopment of the nasal bone; a flattened head anteriorly (in front) and posteriorly (back); squarish hands with short fingers, often with only one horizontal line across the hand (the Simeon crease); a curved fifth finger; a wide space

between the first and the second toe; hypotonia (low muscle tone); a rather monotonous voice; disproportionately short arms and legs in relation to the body, and a short stocky stature. Such individuals are also more prone to congenital heart defects, respiratory infections and leukaemia.

Sex chromosome anomalies

Numerical errors may also occur in the sex chromosome (chromosome number 23). The intellectual ability of these individuals is often only mildly or moderately affected (Simonoff et al. 1998: 43). Examples are as follow:

- **Turner syndrome.** This syndrome, only affecting females, was identified by Henry Turner in 1938. Females with Turner syndrome are mildly intellectually impaired, often with visual-spatial disorders (Bjorklund & Bjorklund 1992: 71–72; Simonoff et al. 1998: 57).
- **Klinefelter syndrome.** This only affects males, who are often only mildly intellectually impaired with some learning disabilities, as well as some speech and language disorders (Owens 1993: 131). They fall in the mild intellectually impaired group and often have learning disabilities, especially speech and language disorders.
- **Fragile X syndrome.** This is the second most common form of intellectual impairment after Down syndrome. It affects males more severely than females and they often experience cognitive as well as language impairments (Hagerman 1996; Nevid et al. 2003; Owens 1993; Simonoff et al. 1998).

17.4.2.2 Single gene anomalies

Single gene anomalies can occur in any one of the thousands of genes located on the chromosomes. Gene pairs, one received from the father and one from the mother, carry important genetic information that determine, for example, eye and hair colour. Single gene disorders are mostly rare, are associated with severe intellectual impairment and have a concomitant metabolic condition. Examples are neurofibromatosis, tuberous sclerosis, Sturge-Weber syndrome, Tay-Sachs disease,

phenylketonuria, galactosaemia, Hunter-Hurler syndrome, Lesch-Nyhan syndrome, Schilder's disease, Laurence-Moon-Biedl syndrome and Smith-Lemli-Opitz syndrome (MacGillivray 1991; Simonoff et al. 1998).

17.4.2.3 Endocrine anomalies

The endocrine system in the body produces hormones, which can also affect intelligence. The thyroid gland produces thyroxin, a hormone which influences brain development and causes a deficiency condition known as **cretinism** or **hypothyroidism**. The main features if untreated are severe intellectual impairment, dwarfed stature, bowed small legs, and stumpy hands and feet. Treatment within the first 7 to 10 days after birth can prevent or reduce the abnormalities, as well as improve intellectual development (MacGillivray 1991: 371).

17.4.2.4 Brain, skull and spinal cord problems

Before birth the brain, skull and spinal cord develop according to a complicated pattern (see Chapters 12 and 13). If normal development is in any way disturbed, it may result in an abnormality with resultant intellectual impairment. The following are examples:

- **Microcephaly.** When development is complete, the cranium of a person with microcephaly is less than 42,5 cm in circumference, which means it is reduced in size. These individuals fall within the severe-to-moderate range of intellectual impairment and about 50 per cent also have epilepsy (MacGillivray 1991: 375).
- **Hydrocephaly.** Hydrocephaly (water on the brain) refers to an increased volume of cerebrospinal fluid within the skull causing pressure on the brain and eventually brain damage, which usually leads to intellectual impairment. Symptoms such as headaches, perceptual and motor problems, as well as other signs of brain damage may occur. The pressure can be relieved surgically by inserting a ventriculoperitoneal shunt (MacGillivray 1991: 374). This condition often forms part of spina bifida (see Chapter 13A).

- **Macrocephaly.** In this case the brain itself is abnormally enlarged. The individual has a large head and is severely intellectually impaired.
- **Craniostenosis.** The premature closure of the soft spots or fontanel in a baby's skull may cause the brain to press against an immovable skull, causing damage. These individuals will show serious signs of brain damage and visual problems as well as intellectual impairment (Bjorklund & Bjorklund 1992: 117; MacGillivray 1991: 372).

17.4.2.5 Multiple disabilities and intellectual impairment

Multiple disabilities are often found in individuals who have severe intellectual impairment (see Chapter 18). There are different degrees and different combinations of multiple disabilities, but when an individual has additional disabilities, it makes learning and life in general much more difficult. The following are some of the other conditions that are to be found in conjunction with intellectual impairment:

- **Epilepsy** (see Chapter 13B) often increases with the severity of the intellectual impairment (Fischbacher 1991: 123).
- **Cerebral palsy** (see Chapter 13C) is a persistent, but not necessarily unchanging, disorder affecting movement and posture, which is often found together with intellectual impairment, indicating the same cerebral lesion. Persons with spastic hemiplegia or paraplegia frequently have normal intelligence and a good prognosis for social independence, but persons with spastic quadriplegia and mixed forms are often associated with an intellectual impairment (MacGillivray 1991: 382).
- **Sensory impairments** (see Chapters 14 and 15) are often also found in individuals with an intellectual impairment, but may be difficult to identify it as a primary or secondary cause.
- **Autism** (see Chapter 13E): It is suggested that two-thirds to three-quarters of individuals with autism also experience an intellectual impairment, often of a severe nature (Pennington & Bennetto 1998: 95).

17.4.2.6 Intellectual impairment and medication

Considering the many intrinsic medical problems that such children often have, it is understandable that they need various types of medication. It is important for teachers to consider the side effects of such medication, which may be detrimental to the learning process. Some of the common ones are listlessness, tiredness, inability to concentrate, dizziness, nausea, headaches, restlessness, irritability and tension (Du Toit 1991: 312).

17.5 CONSEQUENCES OF INTELLECTUAL IMPAIRMENT FOR LEARNERS

Having discussed all the various causes of intellectual impairment, it follows that the cognitive (intellectual) impairment experienced should also affect other aspects of learners' lives.

Physical aspects

Children with an intellectual impairment reach their physical milestones, like sitting, crawling and walking later than other children (Lefrancois 1991: 273). Some experts even maintain that there is a positive correlation between motor impairment (both fine and gross) and the degree of intellectual impairment.

Conative aspects

The term "conative" implies the personal will to consciously and intentionally do something, which is a driving force or motivation in a person's life. Human beings are capable of formulating a personal goal, which is a cognitive exercise, but they also have a moment when they decide or choose actively to follow this goal, which is a conative or motivational exercise.

The connection between the cognitive and conative aspects in the lives of persons with an intellectual impairment has been well researched over a long period of time. From research done by Zigler and his co-workers (e.g. Hodapp et al. 1998; Merighi et al. 1990; Zigler & Balla 1982: 15–20; Zigler 1982: 180–181), it can be concluded that the conative (motivational) aspects of their lives have been adversely affected by their continuous experiences of failure. In the end they start to expect failure. They often do not want to become

involved in learning activities for fear of failure and also tend not to set meaningful goals for themselves. It therefore becomes a self-fulfilling prophecy.

Learners with an intellectual impairment often do not trust their own abilities and depend heavily on others to give direct instructions and to help solve problems for them. They rely on external sources rather than on their own cognitive resources. This is called an **outdirected style of problem solving** that appears to be rather inflexible in the case of persons with an intellectual impairment (Bybee & Zigler 1998; Iarocci & Burack 1998; Jooste 1997: 25–26).

Moral aspects

The ability to evaluate moral matters involves the ability to apply certain ethical and moral standards to the evaluation, thus establishing right and wrong or good and bad. Moral judgement develops more slowly in learners with intellectual impairment than in other learners because it is linked to the level of cognitive development of these learners. They find it difficult to predict the outcome of actions and therefore often fail to avoid negative ones. They also find it especially difficult to distinguish between the outcome of an action and the intention behind it (Robinson & Robinson 1976: 257).

Affective aspects

"Affect" is a term referring to feelings, emotions and mood. There is also a connection between the person's level of cognitive development and affective experiences. In young children as well as in persons with an intellectual impairment, we often notice affective lability that stabilises as they become older. Feelings in learners with an intellectual impairment are often simplistic in nature, short in duration and difficult to control. Many experience crippling unhappiness, anxiety, hostility, rejection and feelings of unworthiness (Robinson & Robinson 1976: 179). They also tend to use a variety of self-defeating techniques to manage these feelings and their confusion about the world around them. Many authors also maintain that affective problems occur more often in persons with intellectual impairment (Glick 1990: 563).

Self-concept

There is a direct connection between the quality of cognitive functioning and the quality of the self-concept. Learners with an intellectual impairment often do not reason accurately and logically, which distorts their self-description and could eventuate in unhappiness and self-defeating behaviours. They often experience feelings of intellectual inadequacy and incompetence when compared to other learners. Prolonged stigmatisation also triggers an expectancy of failure, an attitude of helplessness and an outerdirectedness. All this becomes a vicious circle that reinforces a negative self-image and poor cognitive functioning (Evans 1998: 463–470; Jooste 1997: 27; Widaman et al. 1992).

Social aspects

A person's intellectual approach to and evaluation of social situations influences his behaviour. If this judgement is impaired because of a lack of certain cognitive skills, it will result in inappropriate actions. Social cognition involves complex cognitive processes and cognitive skills that often create problems for persons with an intellectual impairment (Jooste 1997). Examples of complex social cognitive skills are as follows:

- Putting oneself in somebody else's position (role taking)
- Perceiving and interpreting the characteristics of other persons accurately
- Interpreting other people's motives and feelings correctly
- Understanding social role expectations
- Understanding the rules that govern social relations
- Establishing and maintaining friendships
- Appropriately judging matters on a moral basis
- Listening and understanding what other people are saying, as well as being able to communicate one's own ideas effectively in response to them
- Being sensitive to the finer nuances of social and emotional interaction

Personality aspects

Personality and motivational (conative) character-

istics of learners experiencing an intellectual impairment are well-researched topics, especially by Zigler and his co-workers. Zigler identified several different personality attributes of these learners, which are often found in other poor school performers especially those from low socio-economic status groups (Hodapp et al. 1998: 8–9; Bybee & Zigler 1998: 434–461). These personality traits are

- overdependence on adults in the immediate environment
- wariness during initial interactions with adults (including teachers)
- a lowered expectancy of success
- an outerdirected style of problem solving (see conative aspects)
- diminished pleasure in solving challenging problems
- preference for tangible as opposed to intangible rewards
- less differentiated self-concept linked with lower ideal self-image.

Independence

Any improvement in cognitive functioning implies better social adjustment and a greater degree of independence. Adequate cognition is a prerequisite for independence in even the most insignificant self-care task (Jooste 1997: 30).

Keeping in mind all the consequences of intellectual impairment described above, we need to look in the next section of this chapter at the skills required from teachers, some general teaching strategies that teachers can use in an inclusive situation and specific strategies and interventions that can be used to minimise or overcome certain cognitive barriers that are experienced by learners with an intellectual impairment.

17.6 SKILLS REQUIRED FROM TEACHERS OF LEARNERS WITH INTELLECTUAL IMPAIRMENT

The most important skills required from teachers are the roles of team players and mediators. Teachers often have to interact with several other people in different teams to serve the interests of the learners. Teachers however also have to cre-

ate mediated learning experiences for learners, and especially those learners with an intellectual barrier to learning.

17.6.1 Teachers as members of a team

Especially in the case of learners with an intellectual impairment, teachers have to be part of different teams in order to effectively support these learners.

- In the inclusive class, teachers may well have teaching assistants (or para-educators as described in the American literature). Assistants may be appointed by the school or by the parents. This **class support team** consists of a teacher, teaching assistant and parents.
- Teachers may be required to be part of a **school-based support team** consisting of different educators such as class teachers, the principal and heads of department as well as parents, all working in the best interests of the learner.
- Teachers may also be expected to be part of a **district-based support team** consisting of educators, psychologists, speech and hearing therapists, occupational therapists, physiotherapists, medical professionals, local representatives of government departments and other stakeholders (Department of Education 2001: 28–30; 2002: 97–105).

Functioning effectively in these diverse teams requires special skills, such as the ability to share information objectively and openly in the interests of learners experiencing barriers to learning; effective communication; the ability to substantiate one's ideas; respect for different opinions; the ability to look holistically at learners or learning; and a more flexible definition of one's role as a teacher.

17.6.2 Teachers as mediators

Learners with an intellectual impairment do not necessarily benefit from direct exposure to stimuli from the environment, even in the school environment. They may accidentally learn something, which is important and necessary. But according to various experts, incidental learning is not sufficient to ensure that effective learning takes place

(Feuerstein et al. 1980, 1991; Fry 1992; Skuy 1991a). A special kind of interaction is required, which Feuerstein calls the “mediated learning experience” (MLE) where the mediator (teacher or parent) intentionally enriches the interaction between the child and the environment by interpreting stimuli, guiding the interaction and giving meaning to experiences (Feuerstein & Feuerstein 1991).

Example of a teacher/mother as mediator

Consider the example of a child walking through a garden, smelling the flowers, seeing their bright colours and even feeling their texture. Some incidental learning is taking place through this direct exposure. However, if the mother is present and intentionally focuses the child's attention on specific aspects, for example pointing out similar and different colours and textures, she mediates more meaning to the child's experiences and in an informal way assists the child in developing an important cognitive skill, namely comparison. The child, on the other hand, excitedly responds and notices even more similarities and differences in other objects in the garden (Skuy 1991a).

When learners with an intellectual impairment are not very successful in their learning, teachers often develop what Feuerstein calls “the stiff finger”, where the index finger is pointing only in the direction of the child, blaming only the child for this failure to learn (Skuy 1991a: ii) without considering the educational responsibility and role of the teacher. If, however, the teacher is involved as a mediator, the learning process is interactive and involves both parties, and problems can be overcome only by the joint efforts of learner and teacher.

Feuerstein et al. (1980: 42–82) have to date provided ten criteria for mediation. The first three – namely intentionality and reciprocity, meaning and transcendence – are the most important ones in defining an interaction as a mediation intervention. The other seven, however, may function at different times where appropriate. They serve to

balance and reinforce learning. These other criteria are: competence, self-regulation and control of behaviour, sharing behaviour, individuation, goal planning, challenge and self-change. The initial three are applied to any mediated learning experience in any information-processing phase, while the remaining seven occur only in certain situations.

The following are the **three most important criteria defining mediation** that teachers may use to establish whether a particular interaction was a successful mediated learning experience for the learner or not:

- **The mediation of intentionality** happens, according to Skuy (1991a: 1), when “the mediator (teacher or parent) deliberately guides the interaction in a chosen direction by selecting, framing and interpreting specific stimuli. Mediation is a purposeful intentioned act, where the mediator actively works to focus attention on stimuli.” **Reciprocity** occurs when “there is responsiveness from the mediatee (learner) and an indication of being receptive to, and involved in the learning process”.
- **The mediation of transcendence** occurs, according to Skuy (1991a: 11), “when an interaction goes beyond the immediate and direct need, thereby enlarging and diversifying the need system of the mediatee. The goal in mediating transcendence is to promote the acquisition of principles, concepts, or strategies, which can be generalized to issues beyond the presenting problem.” By linking activities and ideas to other situations which are not part of the immediate situation, teachers enlarge the world of learners; they develop the need to understand, to think reflectively and to form relationships between objects or concepts. Referring to the previous example of the teacher/mother as mediator in the garden scene, the child has acquired a new cognitive strategy (comparison), which can be generalised to new situations, for example in the classroom where the child is required to sort papers by colour into different groupings. See also Jooste (1997: 220).
- **The mediation of meaning**, according to Skuy (1991a: 6), occurs when “the mediator conveys

the significance and purpose of an activity”. The mediator shows interest and emotional involvement, discusses the importance of the activity with the mediatee and elicits an understanding of why the activity should be done. This does not only charge the activity or object with energy and value but also communicates ethical and social values. See also Jooste (1995; 1997: 220). Referring to the previous example of the teacher/mother as mediator in the garden scene, mediating meaning by pointing out the similarities and differences between colours and textures in the garden adds new meaning to the child’s experiences.

When a lesson is planned or evaluated, teachers should ask themselves whether intentionality and reciprocity, meaning and transcendence were an integral part of the lesson or not.

17.7 GENERAL TEACHING SUPPORT REQUIRED FOR LEARNERS WITH INTELLECTUAL IMPAIRMENT

The most effective general teaching methods used to teach learners with an intellectual impairment include, *inter alia*, the following: approaching the learner holistically; individual tuition; small-group tuition; hands-on activities; moving from concrete content to more abstract content; connecting learning to real-life situations; allocating enough time for tasks; appreciating and using their abilities to minimise and overcome barriers to learning; motivating learners continuously; regulating the quantity, novelty and difficulty levels of the learning material according to the needs of the learner; analysing tasks carefully to ensure that the steps are logical and small enough to comprehend; emphasising what is really important; verbalising carefully while explaining learning material; and using computers for practising and reinforcing certain important cognitive skills, as well as for overcoming fine-motor difficulties (Ellis et al. 1991; Ezell et al. 1999; Jooste 1997; Wolpert 2001).

The most recent research indicates both on a theoretical and practical level that the use of general teaching methods is insufficient for addressing intellectual barriers to learning. It is also vital-

ly important for teachers to use more specific educational support methods associated with particular cognitive barriers as experienced by learners with that type of impairment. More specific educational support methods are essential for stimulating further cognitive development and usually result in further improvement of general personal functioning. These specific educational methods will be addressed in the next section. The following real-life example encountered by a teacher explains the importance of specific educational support for these learners:

The school organised a school dance for senior learners. The **general educational support** made Thabo aware of his ability to dance and that he loved doing it. He could understand what the nature of a school dance was, as well as the date, time and venue where it was to take place and his keenly felt interest to attend it. The **specific educational support** developed the necessary cognitive skills that enabled Thabo to *systematically reflect and plan* how to attend the dance. He focused on the practical considerations for implementing his decision. He then became *aware of a problem* with transport that made it impossible for him to attend the dance. Thabo was now capable of *using his previous experiences* (long-term memory information) effectively to *independently generate new solutions to personal problems*. He could now understand that *if* he still wanted to attend the school dance, *then* he had to solve the problem that no taxi transport would be available that night. He could *consider various options* and could *communicate effectively* to different staff members in order to *solve the problem by personally arranging* to stay over with one of them, after *obtaining permission* (a conventional rule) from his parents. He *planned and implemented the preferred solution effectively* and *remembered to thank* (a social skill) the people who helped him the morning after the dance. He also *reflected on the effectiveness of the outcome of his plan for future purposes*.

17.8 COGNITIVE BARRIERS EXPERIENCED BY LEARNERS WITH INTELLECTUAL IMPAIRMENT AND THE RELEVANT EDUCATIONAL SUPPORT REQUIRED

In order to effectively improve the cognitive functioning of learners experiencing intellectual barriers to learning, the different cognitive processes must be understood and developed by the teacher. For example, perception, attention, thinking, memory and communication (language) are some of the cognitive processes central to the education of these learners.

17.8.1 A systems model of cognition and information processing

When children learn, they progress through different phases of cognition. In the input phase they perceive and attend to information from the external or from the internal environment (their own physical and psychological processes). In the elaboration phase this information is processed, as new meanings are constructed and stored for later use. In the output phase the outcomes of processing from previous phases are expressed through communication (language) or other actions. Individuals may also personally reflect on, evaluate, monitor and control to what extent their actions are successful in terms of their own expectations or those of others. They may even return to previous processing phases if necessary. The different phases should not be seen in isolation from each other, but as part of a comprehensive and interlinking series of processes, as explained in the schematic model in Figure 17.1 (Feuerstein et al. 1980; Jooste 1997; Skuy 1991b; Skuy 1997; Winkler et al. 1998).

Teachers may use the model in Figure 17.1 as a basis for identifying and understanding the cognitive barriers that learners with an intellectual impairment face. By means of careful observation a learning barrier can be identified and located in the most probable phase of information processing. The kind and level of educational support can be established by using the suggested learning support strategies for that particular phase. If the chosen support strategies are not successful, the whole observation and support process can be repeated. New observations arising from the

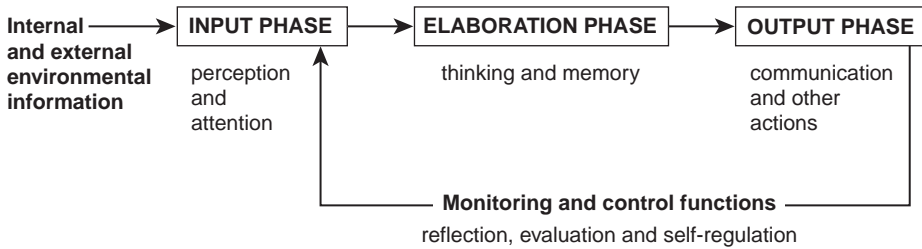


Figure 17.1 A systems model of cognition and information processing

Source: Jooste 1997: 23

unsuccessful teaching attempts may serve as *positive* information in formulating new teaching strategies and interventions. The principles discussed in this section can be applied to most, if not all, learners and not only to those who experience an intellectual impairment. Finally, it is important to note that the following barriers that will be described do not always manifest in every learner.

17.8.2 The input phase of information processing

Individuals process all the information that they perceive by means of their senses in such a way that they may understand, remember and use it as often as required. Individuals with an intellectual impairment, however, may experience various problems related to the processes of perceiving and attending.

17.8.2.1 Barriers experienced during perceiving

Perceptual barriers to learning may manifest in any of the sensory modalities, for example in the visual, auditory, tactile or kinaesthetic processing modality (Jooste 2003a). These barriers can be caused by **organic dysfunctions** of the sensory organs, or by **dysfunctional cognitive processing** in the case where the learner assigns wrong or dysfunctional meanings to sensory information (Jooste 1997: 121–161). Whether the problems are of an organic or cognitive nature, teachers have to keep the consequences in mind when planning their educational support and intervention in the educational setting. Learners with an intellectual impairment may experience the

following perceptual barriers to learning and development:

Tactile and kinaesthetic barriers (Jooste 1997)

These refer to the awareness that people experience when they touch something warm or cold, or are being touched; when physical pressure is exerted on them; or when they resist an outside force. It includes awareness of own movement and their personal position in space when moving.

There are certain **organic barriers** experienced by learners with an intellectual impairment that cannot be rectified, for example a brain with a small cerebellum or hypotonia of the muscles (especially in learners with Down syndrome). Teachers have to keep in mind that these learners may often be unsuccessful in differentiating between different types of tactile or kinaesthetic information. They may tend to be insensitive to heat or cold, appear clumsy and find it difficult to coordinate fine as well as gross motor movements. **Cognitive processing barriers** may manifest in learners finding it difficult to discriminate perceptually. They are often unable to distinguish between differences or to recognise similarities when objects are touched, or when body movements are executed.

Visual barriers (Jooste 1997)

Eye problems include cataracts; atrophy of the optic nerves at the point of leaving the retina; myopia (near-sightedness); strabismus (squinting) and nystagmus (involuntary movement of the eyes). Other important **organic barriers** that affect learning and development include *inefficient*

peripheral vision. This implies that these learners see only what is straight ahead of them and often ignore important information that lies on the edges of their visual field. They may also have *visual acuity problems*, making it difficult to discriminate between adjacent items in the visual field. Medication as well as the child's physical condition may also affect visual acuity. *Uncoordinated eye movements* stem from an organic condition at midbrain level that regulates eye coordination reflexively.

Cognitive processing barriers occur when uncoordinated eye movements result in a *slow and inefficient visual scanning process* – especially when a planned and systematic search for information is required and the learner has to distinguish between relevant and irrelevant information. This again depends on the cognitive ability to consider two or more things simultaneously, which is only possible for a child with a mental age of at least five to seven years. Uncoordinated eye movements also lead to *unsuccessful visual fixation*, resulting in an inability to see important information. This in turn eventuates in *unsuccessful visual differentiation (discrimination)*, when similarities and differences are not recognised during visual perception. The person may be aware only of superficial visual stimuli, may register only obvious visual information, may see only the most outstanding characteristics of a particular visual stimulus and may be insensitive to smaller and subtler forms of visual information. All these difficulties are intensified by an *external locus of control mindset*, when the learner looks around helplessly instead of focusing on the task (“off-task glancing behaviour”) attempting to find external help to solve the problems for him (see section 17.5 – conative). Persons with an intellectual impairment may also have difficulties with *visual-motor programming* when they have to transfer processed visual information into appropriate action, for example when copying from the chalkboard.

Auditory barriers (Jooste 1997)

Learners with an intellectual impairment may experience hearing problems, for example *functional hearing loss*, which means that certain sounds are not heard. There can also be a daily variation in the different sound frequencies heard.

Learners with Down syndrome often have a functional hearing loss due to fluid build-up in the middle ear, which may hamper their language development.

The **cognitive processing** of auditory information is often difficult for learners with an intellectual impairment. *Unsuccessful spatial localising of auditory stimuli* may cause inappropriate reactions, for example an inability to hear when called. These learners may also find it difficult to block out unimportant auditory stimuli or any noise overwhelming them, which may cause oversensitivity and emotional withdrawal. As in the case of visual stimuli, they may *not discriminate properly between different auditory stimuli* and therefore may easily attribute wrong or distorted meanings to complicated auditory stimuli, for example, speech and language. They may also find it *difficult to recognise similarities or differences* in auditory stimuli. All these auditory differentiation difficulties affect concept formation, language acquisition, thought, learning, school achievement and eventually, social adaptation.

General perceptual problems (Jooste 1997)

Many experts believe that persons with an intellectual impairment prefer visual to auditory information. They also tend to experience *perceptual integration problems* – finding it difficult to integrate perceptual information from different sensory modalities. These barriers have implications for activities such as reading, copying and writing, which require intermodal integration of visual, auditory and tactile information, as well as adequate eye, ear and hand functions. Perceptual integration is complex in nature. Writing problems, for example, may be caused by defective visual or tactile perception, defective motor abilities or unsuccessful cognitive integration of the perceptual information, which in turn would require different educational support strategies.

Learners with an intellectual impairment are often *unsuccessful in data gathering* because they do not analyse and organise perceptual information spontaneously and are often not selective in their use of information. They may find it difficult to distinguish between *foreground* and *background information (figure-ground differentiation)* in both

visual and auditory modalities. They may also experience difficulty in moving from concrete observations to more abstract thought processes. In addition, they may be unable to move from one sensory stimulus to the next (*perseveration*). These fixations and unnecessary repetitive behaviours obstruct them from ending a particular activity and starting a totally new one.

17.8.2.2 Barriers experienced during attending

Before this section is discussed, the following types of attention can be identified from a neuropsychological point of view (Jooste 2003a: 92):

- **Non-focused attention.** This is a general passive scanning of information in an unsystematic (random) manner.
- **Focused attention.** This refers to an active focus on some information while still being aware of other information.
- **Concentration.** This includes a process that combines (i) the selection of information and active attending to it with (ii) the blocking out of all irrelevant information. From an information-processing point of view, focused attention and concentration are crucial for the effective functioning of working memory (processing during short-term memory).

Learners with an intellectual impairment tend to experience the following types of problems with focused attention and concentration (Jooste 1997: 141–158):

- **A limited capacity for focused attention and concentration.** This decreases the effectiveness of working memory (short-term memory) and implies that these learners find it difficult to keep information active in working memory while comparing it with new sensory information or with existing information stored in long-term memory. The limited capacity is also overloaded when material in need of attention is not selected carefully. Cognitive strategies to overcome these problems tend not to be used spontaneously or effectively.
- **Perceptual and conceptual processing speed problems.** These refer to the speed and accuracy

with which information is processed and decisions are made. Learners manifest a slower information-processing speed that often leads to the loss of important information in working memory before it can be processed and before appropriate decisions can be made.

- **Impulsive processing style.** This cognitive style can often be observed to hamper cognitive efficiency in working memory. A more reflective style is preferable for problem solving and will improve cognitive efficiency.
- **Metacognitive barriers.** These occur because these learners may not be aware of or do not understand their own ability to monitor and regulate their own attention and concentration functions. They often have difficulty in deciding how to attend to a task and how much attention should be given to that task, or how to oscillate their attention between two tasks in such a way that both tasks can be carried out effectively. They tend not to allocate enough time to the initial encoding or evaluation of information before they move into action. They may experience difficulty in reflecting and differentiating between appropriate and inappropriate information and actions. Information is often not linked selectively with or compared to or integrated with other appropriate information in order for it to make sense. They often find it difficult to choose an appropriate cognitive strategy for the task or to transfer and generalise familiar strategies to new situations. They also find it difficult to design new strategies or test their effectiveness.
- **Motivational problems.** Various problems with outerdirectedness in attention are experienced which negatively affect attention (see section 17.5). They also tend to become dependent on external attention cues, namely the intensity of information (e.g. loud sounds), or contrasts in information (e.g. red vs green contrasts, loud vs soft sounds, sweet vs bitter tastes).
- **Cognitive rigidity.** This is often encountered in these learners, and implies problems in changing certain cognitive and behaviour patterns. It may manifest in the following ways: perseverating with certain actions, an uncritical imitation

of the behaviour of others, oversensitivity to external influences, echolalia (automatic and meaningless copying of other people’s words or sentences), and distractibility instead of focused attention.

17.8.2.3 Learning support for the input phase of information processing

The suggestions offered in the tables below are by no means exhaustive. Additions can be made through own experience as well as through additional reading. More information can be obtained

in Jooste 1997; Perold 1995; Skuy 1997 and Winkler et al. 1998: 8–11.

ACTIVITY

Tshipa finds it difficult to focus attention as well as to concentrate when learning new skills or memorising (working memory) (see section 17.8.2.2).

What strategies are you going to use to support him? (See Table 17.2: Learning support for improving attention – avoid working memory overload)

Table 17.1 Learning support for improving perception

Visual	Auditory	General
<ul style="list-style-type: none"> • Keep all visual information clear and uncluttered. • Ensure enough contrast between background and foreground information. • Seat learners in the best position for optimal visual input. • Present information to learners in the centre of their visual field and not on the periphery. • Encourage learners to describe what they perceive – this helps the teacher to evaluate the perceptual quality of inputs. • Reinforce the importance of self-monitoring through slowing down, working more accurately and self-checking (see Skuy 1991b: 6). • Boost learners’ confidence and encourage independent work. • Refer possible medical problems to medical professionals. • Be mindful that medication or the learner’s present medical condition can also affect vision. • Ensure that interaction between the learner and the teacher is a mediated learning experience (see 17.6.2). 	<ul style="list-style-type: none"> • Speak slowly and articulate very clearly while facing the learner. • Give simple and direct instructions – avoid long and complicated sentences. • Be prepared to repeat or explain something in a different way when necessary. • Seat learners in the best possible position in the class to facilitate proper hearing. • Keep the noise levels in the classroom down. • Make a special effort to help the child to learn to differentiate between different sounds on a tape, CD, video or DVD. • Ensure that interaction between the learner and the teacher is a mediated learning experience (see section 17.6.2). 	<ul style="list-style-type: none"> • Obtain exercises from occupational therapists to improve hypotonia of the muscles. • Remember that general exercises could improve coordination. • Do discrimination exercises using different textures. • Remember that learners with intellectual impairment prefer visual over auditory information – verbal instruction/lectures alone will not be as effective as visual demonstrations or a combination of both. • Use a combination of different senses in the learning process. • Encourage learners to compare by recognising differences and similarities. • Draw attention to relevant information compared to irrelevant information. • Encourage learners to spend enough time and energy on a task. • Encourage learners to first observe/listen carefully before starting to analyse. • Analyse and organise visual and auditory data before attempting a task. • Overcome foreground/background (figure-ground) problems through clear, uncluttered visual information and reducing background noises. • Gently stop perseveration. Guide towards the next activity and explain why that is important. • Create an atmosphere of tolerance and acceptance where all learners are free to explore, make mistakes and learn from them. • Ensure that interaction between the learner and the teacher is a mediated learning experience (see section 17.6.2).

Table 17.2 Learning support for improving attention

<ul style="list-style-type: none"> • Minimise interruptions through careful class management. • Minimise continuous shifting from one task to the next “off task-glancing behaviour” (helplessness) through clear instructions, initial support when starting a task and through continuous encouragement of own learning. • Avoid repetitive, boring activities through positive modelling and by generating enthusiasm for learning. • Ensure the necessary information is available for the completion of the task. • Avoid working memory overload <ul style="list-style-type: none"> – through dividing tasks into smaller steps – by first processing and then memorising – by choosing which task to do first (prioritising) – by deciding whether speed or accuracy is required for successful completion – by evaluating individual topics first before comparing their characteristics. • Discourage impulsivity by <ul style="list-style-type: none"> – reflecting on a task before starting – avoiding speed trials that encourage only a trial-and-error approach to problem solving – drawing attention to not-so-obvious important information when making decisions – planning for success by using realistic steps to progress – continuous failure encourages impulsivity – encouraging the judging of own level of success in each task. • Discourage trial-and-error by <ul style="list-style-type: none"> – choosing appropriate strategies to solve a problem – learning why this strategy is more effective than others – explaining where, when and how to use this strategy in different situations. 	<ul style="list-style-type: none"> • Remember <i>personal</i> motivational factors such as previous successes, personal interests, etc. • Emphasise own ability to control attention appropriately. • Plan own work in a realistic, appropriate, systematic and goal-directed way. • Model cognitive strategies through own work, while explaining why it is successful. • Be aware if learners are nervous, anxious, stressed or tense, or fear criticism or teasing in the classroom situation. • Be aware of poor health, types of chronic medication used, possible side-effects of these medications, etc. • Show patience and understanding. • Be aware that learners with a low level of arousal of the central nervous system require more intense stimuli to overcome the initial barrier to action. • Be aware of learners’ personal attitudes – continuous failure leads to negative attitudes and helplessness. • Consider the unique personality of individual learners – even of those with an intellectual impairment (see section 17.5). • Ensure an emotionally secure learning environment where learners can learn from their mistakes as well as their successes. • Encourage learners to actively use their “brains”. • Do not take over tasks from learners because it is easier to do it for them. Also discourage other learners from doing the same – learners with an intellectual impairment have to be assisted step by step to learn new skills themselves. • Assist and allow them to make their own choices by systematically increasing the difficulty level until they can make complex choices appropriately. • Ensure that interaction between the learner and the teacher is a mediated learning experience (see section 17.6.2).
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17.8.3 The elaboration phase of information processing

The elaboration phase of the systems model is an important and complex phase during which our minds work on the information that we have gathered in the previous phase. This may involve, for example, defining a task or problem, generating alternative solutions to a problem, comparing and integrating relevant sources of information, evaluating different alternatives and choosing the most

appropriate one, planning, hypothesising, and working through problems logically. All this enables us to understand the world around us, to solve the problems that we encounter, to create a personal knowledge base needed for future reference and to adapt to our physical as well as social environment. Owing to the space limitations of this chapter, the following discussion will only be done under two headings, namely thinking, and memorising for long-term memory.

17.8.3.1 *Barriers experienced during thinking*

Learners with an intellectual impairment may find it difficult to effectively use, in the terms of Piaget, assimilation and accommodation to process new information (Jooste 1997: 162–194). They often experience problems such as the following:

(a) *Ineffective symbolic representation*

When thinking takes place, symbolic representations of concrete objects as well as abstract matters are manipulated “inside our heads”. These symbols are images, concepts and language, and learners with an intellectual impairment may experience problems with all three kinds of symbols.

Problems with images are especially obvious when images are spatially rotated as in certain board games, for example chess. In board games one can only act after one has visualised the impact of several moves on their new positions. On an abstract level these learners often experience problems understanding conditional propositions like “if ... then ...”. They tend to have difficulty anticipating problems and planning to avoid them. It is often also difficult for them to understand cause and effect (causality), which is why they do not always understand the consequences of their actions.

Clear concepts are often not formed in addition to ineffective perceptual differentiation because of impulsive actions and lack of reflection, as well as fleeting, diffuse and superficial attention given to information by these learners (see section 17.8.2). Problems with classification and organisation of information are further stumbling blocks in the formation of concepts that are frequently encountered in these learners.

Individuals with an intellectual impairment also experience *problems with receptive as well as expressive language*. Problems with receptive language are often caused by defective language processing, poor knowledge of language construction rules, or emotional factors such as feelings of helplessness and powerlessness. Expressive language problems, on the other hand, are often aggravated by the inability to understand what other people are saying, to formulate own sen-

tences, to articulate clearly, and often because they misjudge signs such as body language, voice pitch and facial expressions.

(b) *Unsuccessfully directed and undirected forms of thinking*

They often experience difficulty with problem solving, reasoning, decision making and creative thinking.

Poor problem solving may occur because of impulsivity; inaccurate encoding of memory information; a slow processing speed; limited working memory capacity that makes it difficult to keep information active long enough to compare, or to judge the alternatives and make future projections; a limited processing capacity that does not allow for an extensive and systematic search in the long-term memory for alternatives; and problems with divergent thinking when more than one solution is possible. Learners with an intellectual impairment are also quite often unaware that a problem even exists.

Ineffective reasoning leading to incorrect deductions occurs because they are often unable to understand, memorise and apply certain logical rules. Problems with reasoning occur when, for example, they have to make transitive deductions. In this case they have to understand that when A is smaller than B and B is smaller than C, then A is also smaller than C. This explains why they find it difficult to understand the consequences of their actions or to make future projections.

Poor decision-making skills often exist because of their difficulty in prioritising between complex alternatives after an evaluation of the different options. In this case these learners often apply a trial-and-error approach. Their problems with divergent thinking, as explained previously, also apply to decision making.

A problem with creative thinking ability is often found when learners with an intellectual impairment find it difficult to think of original ways to solve problems. However, many examples of creative thought and even creative language expressions have also been found in these learners in a classroom setting. **Humour** is also part of creative thinking and is not only observable in abled learners. Persons with an intellectual impairment can also enjoy humour, provided that

they are able to understand ambiguous meanings and puns. The kind of humour that they can appreciate depends on their level of cognitive development (Bjorklund & Bjorklund 1992). Humour can also be used effectively in teaching these learners to overcome various thinking problems.

(c) Lacking a useful knowledge base (long-term memory)

A sound knowledge base is needed when information is manipulated mentally and if important information is lacking, new information cannot easily be assimilated into long-term memory.

(d) Metacognitive problems

These occur when higher-order cognitive control processes needed for planning and decision making are not effective. The following problems are often experienced by learners with an intellectual impairment: (i) they may find it difficult to decide what the nature of the problem is that needs to be solved; (ii) they may take less time searching for information, or planning how to approach a task. The search is often done impulsively – unplanned and unsystematic. On the other hand, they often spend more time in the actual execution of the task because it is done on a trial-and-error basis; (iii) they are often unsuccessful in choosing suitable cognitive strategies for a particular situation; and (iv) they do not always monitor or evaluate their own progress.

17.8.3.2 Barriers experienced during memorising

For the purposes of this chapter, this section will focus only on the long-term memory barriers that learners with an intellectual impairment may experience. Long-term memory consists of two types, namely explicit and implicit memory (Watts & Lazarus 2003).

- **Explicit memory** consists of two subtypes, namely (i) **semantic memory** – generalised knowledge and meanings of the world as well as facts; and (ii) **episodic memory** – specific episodes or events in our personal lives and their meanings, connected with specific dates or situations (Watts & Lazarus 2003: 362). After

new cognitive skills or information is learned, it becomes automatic (routinised) in explicit memory when used, often without needing any attention.

- **Implicit memory** refers to various procedural skills that have been learned. These memories function pre-consciously but can be expressed in observable actions, for example action memories used in walking, talking, writing, playing a violin, etc.

Learners with an intellectual impairment often experience one or more of the following problems with long-term memory:

- They tend to process information more slowly and make more mistakes, which implies that incorrect information is consequently stored in long-term semantic memory.
- They are inclined to store less information in long-term semantic memory, which affects the quality of their knowledge base and the eventual effectiveness of their actions.
- They often find retrieval of information from semantic memory more difficult because they often lack adequate language proficiency, which seems to be an important factor in remembering and retrieving information successfully (Bebko & Luhaorg 1998: 397).
- These learners find explicit memory tasks difficult when controlled effortful processing is required during the acquisition of information, or when a choice of effective strategies for a new situation is required (Bebko & Luhaorg 1998: 397).
- They tend to experience problems with episodic memory because they often have problems integrating information into a meaningful and comprehensive whole (Tulving 1985: 388).

17.8.3.3 Learning support for the elaboration phase of information processing

The suggestions offered in Tables 17.3 and 17.4 are by no means exhaustive. Additional strategies to improve thinking and memory can be obtained through own experience, as well as through additional reading and workshops. In-depth informa-

Table 17.3 Learning support for improving thinking

<p>Definition of the problem</p> <ul style="list-style-type: none"> • Create an atmosphere that encourages learners to ask questions therefore taking responsibility for the clarification of information. • Ensure that the input phase data gathering was accurate – return to this phase if necessary. • Ask questions to arouse curiosity in passive learners and encourage thinking. • Encourage learners to define problems clearly by helping them to analyse information systematically and to think logically and by breaking problems down into smaller units (Skuy 1991b: 30). • Ensure that learners have the necessary vocabulary to understand concepts focused on by the teacher. This will facilitate the learning process in learners from different cultures, as well as those with different cognitive styles. • Help learners to understand concepts like <i>opposite, similar, different</i>, as they are tools for thinking. This will also promote the communication of insights, ideas, answers or solutions. • Develop object constancy: promote understanding of the characteristics of an object even when it changes its physical orientation or abstract characteristics. • Teach learners how to generalise but also how to discriminate (distinguish between characteristics when that is appropriate). <p>Selecting relevant cues</p> <ul style="list-style-type: none"> • Encourage "purposeful perception" – to observe items with the specific aim of discriminating (distinguishing) between them in order to discard irrelevant items (Skuy 1991b: 32). • Teach learners how to search for and discover relationships between bits of information. 	<p>Comparison</p> <ul style="list-style-type: none"> • Explain how comparisons are made by referring to similarities as well as to differences. • Provide enough exercises for comparing various familiar objects. • Explain the criteria to be used in comparison, e.g. a colour like <i>red/green</i> and size like <i>large/small</i> (Skuy 1991b: 34). <p>Grouping (categorising)</p> <ul style="list-style-type: none"> • Give exercises that involve the sorting of different objects according to certain criteria. <p>Internalising events</p> <ul style="list-style-type: none"> • Gradually move from concrete aids to abstraction, e.g. by using counters when doing sums and attempting a similar sum without them. • Encourage visualisation by allowing learners to "see, feel and move objects around in their imagination" (Skuy 1991b: 44). <p>Understanding space and time</p> <ul style="list-style-type: none"> • Effective spatial/time orientation is a precondition for effective thinking. Concepts like <i>left and right; in front of and behind; on top of and underneath</i> are all relevant and must be understood clearly. • Encourage understanding of relationships between objects, people and events regarding sequence, distance, closeness, importance, etc. • Learners with an intellectual impairment can easily see objects or events discretely without any connection to other objects or events and also without any relation to anything in the past or future. This leads to a passive attitude towards own experiences. These will not be organised or compared to any previous experiences and will eventually not be placed in a meaningful context or improved upon (reduced ability to learn from previous mistakes). 	<p>Developing inferential-hypothetical thinking</p> <ul style="list-style-type: none"> • Show learners how to arrive at new conclusions through considering existing information, e.g. <i>if this round shape is a circle, then those round shapes should also be circles</i> (Skuy 1991b: 46). <p>Playing an active role in information processing</p> <ul style="list-style-type: none"> • Encourage learners to become active, because learners with an intellectual impairment as well as learners from a deprived background often see themselves as passive receivers of information and not as generators of ideas and solutions to problems. • Give all learners the opportunity to voice their opinions and express their ideas, regardless of their intellectual ability. <p>General aspects</p> <ul style="list-style-type: none"> • Talk throughout the process of solving a problem in order to model problem-solving processes to learners (Skuy 1991b: 8). • Give learners a plan or model that specifies the steps to apply to problem-solving tasks. Also demonstrate the value of using this model in different problem-solving situations (Skuy 1991b: 8). • Allow learners to evaluate their own efforts and to correct their own errors. • Give immediate feedback regarding incorrect as well as correct responses and explain the reasons why they are correct or incorrect (Skuy 1991b: 8). • Show learners how to plan ahead and evaluate their plans in terms of ability and time (Skuy 1991b: 50). • Also applicable here are support activities to improve attention (see Table 17.2). • Ensure that interaction between the learner and the teacher is a mediated learning experience (see section 17.6.2).
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Table 17.4 Learning support for improving memory

- Ensure that interaction between the learner and the teacher is a mediated learning experience (see section 17.6.2).
- Ensure that proper learning support is given to learners with regard to paying attention (working memory) (see 17.8.2.2). This will help them to establish a reliable knowledge base (long-term memory) from which they can withdraw information when needed.
- Develop a language proficiency level that is needed to enhance memory function.
- Develop strategies like grouping, organisation, association, elaboration and spontaneous verbal rehearsal.
- Alternative communication strategies, e.g. picture symbols, can be used to strengthen memory functions. Symbols can more easily be transferred to long-term memory by various sensory channel rehearsal strategies than words can (Bowler 1991).
- Motivate learners by showing them that they are capable of remembering and that by using suitable memory strategies they have an even better chance of remembering.
- Encourage learners to play memory games, e.g. show them a variety of pictures and ask them to recall them after a certain time lapse, or ask them to recall what happened to them during the school holidays.

tion can be obtained from the original sources: Bendixen (2002), Feuerstein et al. (1980: 74–103), Jooste (1997: 121–214), Perold (1995), Skuy (1991a), Skuy (1997), Watts and Lazarus (2003: 365–371) and Winkler et al. (1998: 8–11).

ACTIVITY

Geraldine could not sort pictures of fruit and vegetables into their respective categories. Why is this difficult for her? Has she formed a clear concept of what fruit and vegetables are? (See 17.8.3.1(a)) How would you help her (i) to select relevant cues, to make comparisons and to group into one category those pictures of objects that belong together, and (ii) remember how to do it? (See learning support for improving (i) thinking (Table 17.3) and (ii) memory (Table 17.4).)

ACTIVITY

Nomsa finds it difficult to remember what she has learned the previous day. What kind of strategies are you going to suggest for improving explicit long-term memory? (See 17.8.3.2 and Table 17.4: Learning support for improving memory.)

17.8.4 The output phase of information processing

When information processing in previous phases has been successfully achieved, the answers given or tasks completed will be correct and make sense, unless learners experience problems expressing themselves or putting thoughts into action.

17.8.4.1 Barriers experienced during communicating (language) and other actions

The problems often experienced by learners with an intellectual impairment are well researched (Fowler 1998; Tager-Flushberg & Sullivan 1998). It has been found that both receptive and expressive language are often impaired in these learners, resulting in faulty cognition. On the other hand, an inadequate knowledge base (long-term memory) and poor cognitive processing have a detrimental impact on language development, creating a vicious circle (Abbeduto & Nuccio 1991: 143–149).

All the sentences that learners hear are new or unfamiliar in some way to them, which implies that the meaning will have to be worked out anew by them. In order to understand verbal communication, the listener often has to guess or predict the meaning. Owing to the many cognitive problems already explained, learners with an intellectual impairment often find attributing meaning to sentences, instructions and discussions a challenging task.

They, however, do understand many of the events around them, even though they are unable to talk about them. Sinason (1993: 3) argues that persons with an intellectual impairment are too often regarded as people that do not have valuable ideas of their own and therefore they “give

up the exhausting and unequal struggle for communication and keep their thoughts locked up in their heads forever". This explains why people with an intellectual impairment appear to be slow at using expressive language. These researchers also strongly emphasise that language development programmes should rather focus on language *processing* and not only on enlarging the child's vocabulary.

17.8.4.2 Learning support for the output phase of information processing

The suggestions offered in Table 17.5 are by no means exhaustive. Additional ideas and strategies can be obtained through own experience, as well as through further reading and workshops. In-depth information can be obtained from the original sources: Fenn (1977), Feuerstein et al. (1980: 74–103), Jooste (1997: 121–124), Skuy (1991b), Skuy (1995), Skuy (1997), Watts and Lazarus (2003: 355–380) and Winkler et al. (1998: 8–11).

ACTIVITY

Both Tshipa and Nomsa find it difficult to express themselves in the language used in the classroom because it is their second language. How can you support them? (See Table 17.5: Learning support for improving communication.)

17.9 CONCLUSION

Learners with an intellectual impairment represent the largest group of learners experiencing intrinsic barriers to learning. In a country where abject poverty occurs, the prevalence of this group is even higher than the available international figures. These learners face very difficult circumstances. Many disabling factors can, however, be counteracted if teachers equip themselves with appropriate knowledge and mediation skills to support these learners, and reflect seriously on their attitudes towards them and on their teaching methods.

Table 17.5 Learning support for improving communication

- Ensure that interaction between learner and teacher is a mediated learning experience (see 17.6.2)
- Encourage learners to express their thoughts and ideas without the teacher being judgemental about their expressions.
- Encourage discussions on a variety of topics in order to build their confidence.
- Determine their competence in the language of instruction. Also accommodate their home language in communication (see Chapters 7 & 8).
- After the learner has demonstrated some progress in communication, use language that is on a slightly higher level than that of the learner in order to encourage language development when addressing a particular learner.
- State the same idea in different ways.
- Reduce the length and complexity of material by making it simpler and shorter.
- Provide concrete material, e.g. illustrations, charts, drama, etc., to explain, reinforce and elaborate on verbal information in discussions.
- Give accurate labels to concepts and use them regularly to reinforce their accurate use. Expect learners to use these concepts as well.
- Relate concepts to the everyday experiences of the particular learner.
- Encourage active discussion and questions during the presentation of information and material.
- Relate unknown words to learners' own vocabulary and encourage them to think and discuss their meanings in different contexts.
- Ensure that all information is age and culture appropriate and present it in a meaningful context related to language proficiency level.
- Encourage learners to listen for meaning by asking questions and ensuring that they understand the meaning intended by the speaker, or ask for clarification to determine the perceptual accuracy of the meaning.
- Develop language comprehension by explaining what the nature of categories, analogies and ambiguities are.
- Focus more on language processing and not only on enlarging the learner's vocabulary.

Questions

- Decide if the following statements are true or false:
 - If a learner finds understanding the teacher in the usual classroom setting a difficult task, the problem lies mostly within the learner. True/False
 - My knowledge and understanding of learners with an intellectual impairment will have a crucial impact on my functioning as a teacher for them. True/False
 - The way I define my role as a teacher has relatively little impact on the way I teach learners with an intellectual impairment. True/False
 - Learners with intellectual impairment are capable of learning far more effectively if their teachers mediate their learning more efficiently. True/False
- Let us put together what was learned in this chapter by using the following case study.

CASE STUDY

The teacher gives clear instructions regarding a task. She also asks the learners to give verbal feedback to her after they have completed the task. Tshipa and Johnny always ask their friends what they must do before they start and hardly ever complete a task successfully on their own. They can also not give clear verbal feedback on how and what they have done. Their teacher is very concerned and after careful observation clearly finds that *both Johnny and Tshipa experience a general barrier in defining and solving a problem*. How can she help them?

- Design a flow chart depicting the process of educational support planned by the teacher for learners like Tshipa and Johnny with a barrier to learning as described above. Remember that the same process will apply to other barriers that learners may encounter. (If you need assistance, compare your notes to the questions in 2 below and the systems model in Figure 17.1.)
- Identify the possible phase/phases in which the specific problem (specific barrier to learning and development) occurs by asking yourself the following questions:
 - What may have possibly gone wrong in the input phase?

- What may have possibly gone wrong in the elaboration phase?
- What may have possibly gone wrong in the output phase?

Based on your previous decisions, what learning support can be offered in every phase?

- Design a learner support plan for Johhy and Tshipa. Keep in mind that there can be various acceptable support plans for a learner. Think carefully before deciding on the best possible lesson plan for Tshipa and Johnny, based on the principles that you have learned. Discuss your ideas with other students in your study group and evaluate each other's lesson plans.

Bibliography

- Abbeduto, L. & Nuccio, J.B. 1991. Relation between receptive language and cognitive maturity in persons with mental retardation. *American Journal on Retardation*, 96(2): 143–149.
- American Association on Mental Retardation (AAMR). 1992. *Mental retardation: definition, classification and systems of supports*, 9th ed. Washington, DC: AAMR.
- American Psychiatric Association (APA). 2000. *Diagnostic and statistical manual of mental disorders. DSM-IV-TR*, 4th ed. Text revision. Washington DC: APA.
- Anastasi, A. & Urbina, S. 1997. *Psychological testing*, 7th ed. Upper Saddle River, NJ: Prentice Hall.
- Archer, M. & Green, L. 1996. Classification of learning difficulties. In Engelbrecht, P., Kriegler, S.M. & Booysen, M.I. (Eds), *Perspectives on learning difficulties: international concerns and South African realities*. Pretoria: Van Schaik, 123–129.
- Bebko, J.M. & Luhaorg, H. 1998. The development of strategy use and meta-cognitive processing in mental retardation: some sources of difficulty. In Burack, J.A., Hodapp, R.M. & Zigler, E. (Eds), *Handbook of mental retardation and development*. New York: Cambridge University Press, 382–407.
- Bendixen, C.H. 2000. *The effects of cognitive factors and personality attributes on learning potential*. MA dissertation. Johannesburg: Rand Afrikaans University.
- Bjorklund, D.F. & Bjorklund, B.R. 1992. *Looking at children: an introduction to child development*. Pacific Grove, CA: Brooks/Cole Publishing Company.
- Blagg, N. 1991. *Can we teach intelligence? A comprehensive evaluation of Feuerstein's instrumental enrichment programme*. Hillsdale, NJ: Erlbaum.
- Bowler, D.M. 1991. Rehearsal training and short-term free-recall of sign and word labels by severely handicapped children. *Journal of Mental Deficiency Research*, 35: 120–121.

- Brooks, P.H., Sperber, R. & McCauley, C. (Eds). 1984. *Learning and cognition in the mentally retarded*. Hillsdale, NJ: Erlbaum.
- Burack, J.A., Hodapp, R.M. & Zigler, E. (Eds). 1998. *Handbook of mental retardation and development*. New York: Cambridge University Press.
- Bybee, J. & Zigler, E. 1998. Outerdirectedness in individuals with and without mental retardation: a review. In Burack, J.A., Hodapp, R.M. & Zigler, E. (Eds), *Handbook of mental retardation and development*. New York: Cambridge University Press, 434–461.
- Culatta, R.A. & Tompkins, J.R. 1999. *Fundamentals of special education – what every teacher needs to know*. Upper Saddle River, NJ: Merrill.
- Department of Education. 2001. *Education White Paper 6: Special Needs Education: building an inclusive education and training system*. Pretoria: Department of Education.
- Department of Education. 2002. *Draft conceptual and operational guidelines for the implementation of inclusive education*, 2nd draft. Pretoria: Department of Education.
- Donald, D.R. 1993. Reconceptualising the nature and extent of special educational need in South Africa. *Perspectives in Education*, 14(2):139–156.
- Du Toit, L. 1991. Verstandelike gestremdheid. In Kapp, J.A. (Ed.), *Kinders met probleme: 'n ortopedagogiese perspektief*. Pretoria: Van Schaik, 298–330.
- Eaton, M.C., Luiz, D.M., Schwellnus, I. & De Klerk, D. 2003. Intelligence and psychological testing. In Nicholas, L. (Ed.), *Introduction to psychology*. Lansdowne: UCT Press.
- Ellis, E., Deshler, D., Lentz, B., Schumaker, J. & Clark, F. 1991. An instruction model for teaching learning strategies. *Focus on Exceptional Children*, 23(6): 1–23.
- Engelbrecht, P., Kriegler, S.M. & Booysen, M.I. (Eds). 1996. *Perspectives on learning difficulties: international concerns and South African realities*. Pretoria: Van Schaik.
- Evans, D.W. 1998. Development of the self-concept in children with mental retardation: organismic and contextual factors. In Burack, J.A., Hodapp, R.M. & Zigler, E. (Eds), *Handbook of mental retardation and development*. New York: Cambridge University Press, 462–480.
- Ezell, D., Klein, C.E. & Ezell-Powell, S. 1999. Empowering students with mental retardation through portfolio assessment: a tool for fostering self-determination skills. *Education and Training in Mental Retardation and Developmental Disabilities*, 34: 453–463.
- Fenn, G. 1977. Against verbal enrichment. In Berry, P. (Ed.), *Language and communication in the mentally handicapped*. London: Edward Arnold, 84–94.
- Feuerstein, R. & Feuerstein, S. 1991. Mediated learning experience: a theoretical overview. In Feuerstein, R., Klein, P.S. & Tannenbaum, A.J. (Eds), *Mediated learning experience (MLE): theoretical, psychosocial and learning implications*. London: Freund Publishing House.
- Feuerstein, R., Rand, Y., Hoffman, M.B. & Miller, R. 1980. *Instrumental enrichment: an intervention program for cognitive modifiability*. Baltimore: University Park Press.
- Fischbacher, E. 1991. The management of epilepsy. In Fraser, W.I., MacGillivray, R.C. & Green, A.M. (Eds), *Hallas' caring for people with mental handicaps*. Oxford: Butterworth Heinemann, 123–131.
- Fowler, A.E. 1998. Language in mental retardation: associations with and dissociations from general cognition. In Burack, J.A., Hodapp, R.M. & Zigler, E. (Eds), *Handbook of mental retardation and development*. New York: Cambridge University Press, 290–333.
- Fraser, W.I. & Green, A.M. 1991. Changing perspectives on mental handicap. In Fraser, W.I., MacGillivray, R.C. & Green, A.M. (Eds), *Hallas' caring for people with mental handicaps*. Oxford: Butterworth Heinemann, 1–7.
- Fry, P.S. 1992. *Fostering children's cognitive competence through mediated learning experience: frontiers and futures*. Springfield, IL: Thomas.
- Glick, V. 1990. Psycho-educational aspects of mental handicap. In Lea, S. & Foster, D. (Eds), *Perspectives on mental handicap in South Africa*. Durban: Butterworths.
- Grantham-McGregor, S., Powell, C., Walker, S., Chang, S. & Fletcher, P. 1994. The long-term follow-up of severely malnourished children who participated in an intervention program. *Child Development*, 65: 428–439.
- Grover, V. 1990. Psycho-educational aspects of mental handicap. In Lea, S. & Foster, D. (Eds), *Perspectives on mental handicap in South Africa*. Durban: Butterworths.
- Hagerman, R. J. 1996. Fragile X syndrome. *Child and Adolescent Psychiatry Clinics of North America*, 5: 895–911.
- Hodapp, R.M., Burack, J.A. & Zigler, E. 1998. Developmental approaches in mental retardation: a short introduction. In Burack, J.A., Hodapp, R.M. & Zigler, E. (Eds), *Handbook of mental retardation and development*. New York: Cambridge University Press, 3–19.
- Horowitz, F.D. & Haritos, C. 1998. The organism and the environment: implications for understanding mental retardation. In Burack, J.A., Hodapp, R.M. & Zigler, E. (Eds), *Handbook of mental retardation and development*. New York: Cambridge University Press, 20–40.
- Iarocci, G. & Burack, J.A. 1998. Attention and mental retardation. In Burack, J.A., Hodapp, R.M. & Zigler, E. (Eds), *Handbook of mental retardation and development*. New York: Cambridge University Press, 349–381.
- Jooste, C. J. 1995. *Die invloed van die tradisionele kognitiewe teorieë op die onderwys van verstandelik gestremdes*. MEd dissertation. Pretoria: Unisa.
- Jooste, C.J. 1997. *Die waarde van Feuerstein se strukturele kognitiewe modifieerbaarheidsteorie vir die onderwys van verstandelik gestremdes*. DEd thesis. Pretoria: Unisa.
- Jooste, M.J.L. 2003a. Sensation and perception. In Nicholas, L. (Ed.), *Introduction to psychology*. Lansdowne: UCT Press, 53–118.
- Jooste, M.J.L. 2003b. *Introduction to psychological testing and assessment in South Africa*. Johannesburg: RAU-PERS.

- Jupp, K. 2002. *Everyone belongs: mainstream education for children with severe and profound learning difficulties*. London: Souvenir Press.
- Lea, S. & Foster, D. (Eds). 1990. *Perspectives on mental handicap in South Africa*. Durban: Butterworths.
- Lefrancois, G.R. 1991. *Psychology for teaching*. Belmont, CA: Wadsworth.
- MacGillivray, R.C. 1991. Diagnostic categories and clinical conditions. In Fraser, W.I., MacGillivray, R.C. & Green, A.M. (Eds), *Hallas' caring for people with mental handicaps*. Oxford: Butterworth Heinemann, 362–383.
- McLoyd, V.C. 1990. The impact of economic hardship on black families and children: psychological distress, parenting, and socioemotional development. *Child Development*, 61: 311–346.
- Merighi, J., Edison, M. & Zigler, E. 1990. The role of motivational factors in the functioning of mentally retarded individuals. In Hodapp, R.M., Burack J.A. & Zigler, E. (Eds), *Issues in the developmental approach to mental retardation*. New York: Cambridge University Press.
- Mwamwenda, T.S. 1995. *Educational psychology: an African perspective*. Durban: Butterworths.
- Nevid, J.S., Rathus, S.A. & Greene, B. 2003. *Abnormal psychology in a changing world*. Upper Saddle River, NJ: Prentice Hall.
- Owens, K. 1993. *The world of the child*. New York: Merrill.
- Pennington, B.F. & Bennetto, L. 1998. The neuropsychology of mental retardation. In Burack, J.A., Hodapp, R.M. & Zigler, E. (Eds), *Handbook of mental retardation and development*. New York: Cambridge University Press, 80–114.
- Perold, C. 1995. *An introduction to remedial approaches and strategies in the classroom: a teacher's workshop manual*. Johannesburg: University of the Witwatersrand, Division of Specialised Education.
- Robinson, N.M. & Robinson, H.B. 1976. *The mentally retarded child*, 2nd ed. New York: McGraw-Hill.
- Simeonsson, R. J. 1983. Developmental processes. In Matson, J.L. & Mulick J.A. (Eds), *Handbook of mental retardation*. New York: Pergamon Press.
- Simeonsson, R.J., Monson, L.B. & Blacher, J. 1984. Social understanding in mental retardation. In Brooks, P.H., Sperber, R. & McCauley, C. (Eds), *Learning and cognition in the mentally retarded*. Hillsdale, NJ: Erlbaum.
- Simonoff, E., Bolton, P. & Rutter, M. 1998. Genetic perspectives on mental retardation. In Burack, R.J., Hodapp, R.M. & Zigler, E. (Eds), *Handbook of mental retardation and development*. New York: Cambridge University Press.
- Sinason, V. 1993. *Mental handicap and the human condition: new approaches from the Tavistock*. London: Free Association Books.
- Skuy, M. & Partington, H. 1990. Special education in South Africa. *International Journal of Disability, Development and Education*, 37(2): 149–157.
- Skuy, M. (Ed.). 1991b. *Volume 1: Mediated learning experience: working manual*. Johannesburg: University of the Witwatersrand, Division of Specialised Education.
- Skuy, M. (Ed.). 1991a. *Volume 2: Cognitive functions and dysfunctions: working manual*. Johannesburg: University of the Witwatersrand, Division of Specialised Education.
- Skuy, M. (Ed.). 1995. *Thinking multiculturally*. Johannesburg: University of the Witwatersrand, Division of Specialised Education.
- Skuy, M. (Ed.). 1997. *Thinking in Africa: teacher's manual*. Johannesburg: University of the Witwatersrand, Division of Specialised Education.
- Smith, T.E.C. & Hilton, A. 1994. Program design for students with mental retardation. *Education and Training in Mental Retardation and Developmental Disabilities*, 29: 3–8.
- Sternberg, R.J. 1995. *In search of the human mind*. Fort Worth: Harcourt Brace College Publishers.
- Sternlicht, M. & Deutsch, M.R. 1972. *Personality development and social behavior in the mentally retarded*. Lexington, MA: Lexington Books.
- Stoneman, Z. 1998. Research on siblings of children with mental retardation: contributions of developmental theory and etiology. In Burack, R.J., Hodapp, A.M. & Zigler, E. (Eds), *Handbook of mental retardation and development*. York: Cambridge University Press, 669–692.
- Tager-Flushberg, H. & Sullivan, K. 1998. Early language development in children with mental retardation. In Burack, R.J., Hodapp, R.M. & Zigler, E. (Eds), *Handbook of mental retardation and development*. New York: Cambridge University Press, 208–239.
- Thapar, A., Gottesman, I.I., Owen, M.J., Donovan, M.C. & McGuffin, P. 1994. The genetics of mental retardation. *British Journal of Psychiatry*, 164: 747–758.
- Tulving, E. 1985. How many memory systems are there? *American Psychologist*, 40(4): 385–398.
- Wahlström, J. 1990. Gene map of mental retardation. *Journal of Mental Deficiency Research*, 34: 11–27.
- Watts, A.D. & Lazarus, T. 2003. Cognitive processes: memory, thinking and language. In Nicholas, L. (Ed.), *Introduction to psychology*. Lansdowne: UCT Press, 355–384.
- Werner, D. 1988. *Disabled village children: a guide for community health workers, rehabilitation workers, and families*. Palo Alto, CA: The Hesperian Foundation.
- Widaman, K.F., Macmillan, D.L., Hemsley, R.E., Little, T.D. & Balow, I.H. 1992. Differences in adolescents' self-concept as a function of academic level, ethnicity, and gender. *American Journal on Mental Retardation*, 96(4): 387–404.
- Winkler, G., Modise, M. & Dawber, A. 1998. *All children can learn: a South African handbook on teaching children with learning difficulties*. Cape Town: Francolin Publishers.
- Winship, W.S. 2003. *Handbook of genetic and congenital syndromes*. Cape Town: Oxford University Press.
- Wolpert, G. 2001. What general educators have to say about successfully including students with Down syndrome in their classes. *Journal of Research in Childhood Education*, 16(1): 28–38.

Zigler, E. 1982. Developmental versus difference theories. In Zigler, E. & Balla, D. (Eds), *Mental retardation: the developmental-difference controversy*. Hillsdale, NJ: Erlbaum.

Zigler, E. & Balla, D. (Eds). 1982. *Mental retardation: the developmental-difference controversy*. Hillsdale, NJ: Erlbaum.

Answers to questions

- 1.(a) False
- (b) True
- (c) False
- (d) True

SEVERE AND MULTIPLE DISABILITIES

KITTY UYS

Learning outcomes

After reading this chapter you should be able to

- ▶ identify the incidence of severe and/or multiple disabilities in South Africa
- ▶ define severe and multiple disabilities, know the differences and similarities between the two population groups, and know the two major classification systems for disability
- ▶ identify and describe the characteristics of learners with severe and/or multiple disabilities
- ▶ discuss how active participation of all learners could be facilitated in the classroom
- ▶ discuss how different learning styles and teaching strategies can support active participation of all learners in the classroom.

Key terms

severe disability ♦ *multiple disabilities* ♦ *teaching strategies* ♦ *adaptation*

CASE STUDY 1

Kagiso

Kagiso is an 8-year-old boy with cerebral palsy, visual impairments and epilepsy which is not under control. He presents with high muscle tone and cannot move into different positions. He is in a wheelchair, but does not have the ability to propel himself forward.

He was born at a teaching hospital by Caesarean section because of foetal distress. The medical staff told the mother that her son would be “slow”. This did not make sense to her as she thought her child would get better with time. However, as Kagiso grew older, his mother

became worried as he did not follow the same developmental stages as his siblings. She was eventually encouraged to put Kagiso into a special school as he was totally dependent but indicated a willingness to learn.

Kagiso started off in a special school for the first year of school, where he obtained a wheelchair for the first time; however, Kagiso had already developed contractures in his lower and upper limbs. As his mother did not learn how to handle him better from the school as it was too far away, she decided to place him in the neighbourhood school. Kagiso’s siblings attend the same school and they take him to school and back.

The mother hears from Kagiso’s siblings that he spends his days sitting in his wheelchair at the back of the classroom and that little or no attention is given to him. Two classmates push him out to the playgrounds during break, but do not play with him because he cannot join in their

activities, like playing soccer. Kagiso's mother says he is getting depressed in this school as he is becoming more withdrawn. At a school meeting, Kagiso's teacher explains that she does not know how to help Kagiso to participate as he cannot write and she does not understand him when he speaks. The teacher is becoming anxious and frustrated about the situation.

CASE STUDY 2

Mike

Mike was born with Usher syndrome. Immediately after birth, the doctor diagnosed a sensory neural hearing loss. He was fitted with hearing aids after six weeks. He received all the intervention needed to develop as a normal child. As his residual hearing was enough to learn to speak, his parents insisted on auditory training and amplification. By school-going age he could communicate with other people. After long conversations with the district-based support team, his parents decided to put him in a newly established full-service school in their neighbourhood. Although he initially struggled to socialise with the other learners and to recognise that he is not the sole receiver of the teacher's attention, he quickly learned his responsibilities towards participation in classroom activities.

When Mike was nine years old, his parents and teachers realised that his vision was also deteriorating. Although he was sitting in the front of the classroom, he could not see the writing on the chalkboard or the images on the overhead projector screen any more. The ophthalmologist diagnosed deteriorating retinitis pigmentosa and recommended that Mike should be taught Braille immediately to open up new modes of communication. Mike and his parents found it very difficult to accept this new obstacle that could prevent him from accessing the learning material.

The district-based support team recommended transfer to the nearest special school where all the facilities and expertise for learners with multiple disabilities are available. However, Mike and his parents were not ready for this move. In collaboration with the district-based support team, the Braille specialist from the special school was transferred to the full-service school until Mike could cope on his own with Braille. Speech reading also became increasingly difficult, so finger and hand spelling became the mode for receptive communication. As Mike

needed more individual attention, a teacher assistant was employed, not only for Mike but also to assist the other learners while the teacher was busy teaching Mike individually. Because his peers accepted him, they also accepted this new setback and helped Mike by occasionally reading the learning material to him when he became tired.

18.1 INTRODUCTION

At the dawn of the new millennium, it was estimated that 80 per cent of all individuals with disabilities live either in Africa or Asia (Iwakuma & Nussbaum 2000). Although this figure is distressing, it is unfortunate that statements such as this are made while there is still so much controversy about exactly what severe and/or multiple disabilities really are. Not unexpectedly, defining disability is not an easy task and many different definitions highlighting different aspects associated with disability (e.g. medical, social, political, etc.) have been used in the past.

In earlier times a medical model was proposed which defined health as the absence of disease (Slajmer-Japeli 1995) and disability as a permanent biological impairment, which put individuals with disabilities in a less favourable position than those who could recover from illness; therefore the problem to be addressed is situated within the individual. As expected, the medical model of disability did not bode well for those who were permanently disabled with conditions that cannot be modified or changed (e.g. those with severe intellectual impairment).

This made way for the social model of disability, which defines health as a human condition which is the result of social, economic and political development (Thomas 1999), and disability is seen as an internal condition which is not necessarily undesirable or in need of remediation. This model sees the incapacity to function as related to a disability-hostile environment in which barriers clash with personal choice. Rather than attempting to change or "fix" the individual with the disability, a social model of disability aims to remove societal or environmental barriers in order to facilitate the full development of the individual's social, physical, vocational and belief systems.

18.2 DEFINITION AND CLASSIFICATION OF SEVERE AND/OR MULTIPLE DISABILITIES

Individuals with severe and/or multiple disabilities have also been commonly referred to as “severely disabled”. The following definition of severe and/or multiple disabilities is provided by Orelove and Sobsey (1996: 1):

Children with multiple disabilities are individuals with

1. “mental retardation requiring extensive or pervasive supports, and
2. one or more significant motor or sensory impairments and/or special health care needs”.

Such a definition makes it clear that this population has a combination of physical, psychological, medical, educational and social-emotional needs. According to Orelove and Sobsey (1996) and Westling and Fox (2000), individuals with multiple disabilities have intellectual impairment (severe to profound), as well as one or more significant motor and/or sensory impairments or special health needs. It is documented that two out of every five children with severe and/or multiple disabilities will have a sensory impairment (Sobsey & Wolf-Schein 1991). The term “severe disabilities” is defined somewhat differently by different people. An individual with a severe disability is often challenged by learning, personal and social skills, and/or sensory and physical development (Westling & Fox 2000). The individual’s health condition impacts on his ability to be independent in activities of daily living (i.e. eating, dressing, grooming, mobility, bathing and communication).

From the above it is evident that defining these terms is no easy task. However, it becomes clear that the term “severe” refers to the extent of the impairment. This is presented in Figure 18.1 where disability can range from minimal to profound.

Severe disability can thus refer to single or multiple problems. The term “multiple disabilities”,



Figure 18.1 Severity scale

on the other hand, refers to concomitant impairments, the combination of which causes such severe educational problems that they cannot be accommodated in special programmes solely for one of the impairments. From these definitions it becomes clear that while there are differences between severe and multiple disabilities, there are also so many similarities that, in discussing the education of these learners, both forms can be accommodated.

The World Health Organization’s classification system, the International Classification of Functioning, Disability and Health (ICF), is also an attempt to highlight the barriers these children experience to participating in activities presented on a daily basis. Another definition provided by TASH (The Association for Persons with Severe Handicaps) emphasises the amount of support required by these individuals. The ICF and TASH attempt to define disabilities respectively according to levels of functioning and necessary support needed. These two systems of defining and classifying disability will now be discussed.

18.2.1 International Classification of Functioning, Disability and Health (ICF)

The World Health Organization made an effort to standardise internationally used terminology to classify individuals with disabilities. The ICF, which was endorsed in May 2001 (WHO 1999), conceptualises disability as occurring at three levels of functioning. This functional outcome is a result of interaction between the individual with a health condition and the environment. “Health condition” is an umbrella term for a disease, disorder, injury or trauma that can be temporary, permanent, intermittent, progressive or merely perceived to be present, including physical and/or mental problems, which is not coded in the ICF. The WHO’s International Classification of Diseases (ICD-10) is used for this purpose.

The WHO uses “functioning” as the encompassing term to indicate positive aspects at three levels of functioning, i.e. body functioning and structure, activity and participation. The term “disability” is the term for the problems experienced at all three levels (WHO 2003). Disability is thus seen

as a multidimensional phenomenon resulting from the impaired interaction between the individual and the environment (Bornman 2004). A graphic presentation of the ICF is given in Figure 18.2.

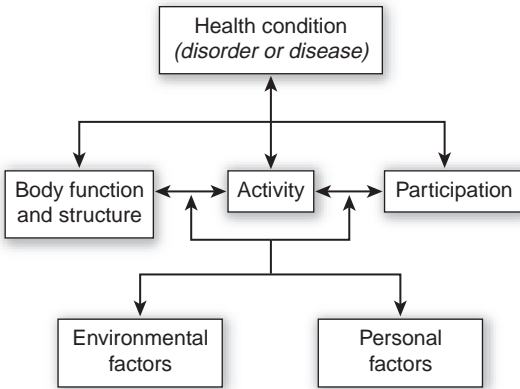


Figure 18.2 Graphic presentation of the ICF Model

Source: WHO 2003. Reprinted with the permission of the World Health Organization (WHO). All rights reserved.

Figure 18.2 indicates the interaction between the health condition and the environmental and personal factors, which results in functioning or disability at one or more of the three levels.

Environmental factors refer to the physical, social and attitudinal environments in which people live and conduct their lives. These are structured from the immediate environment (e.g. a wheelchair) to the general environment (e.g. national policies on inclusive education) (Bornman 2004). Personal factors, on the other hand, refer to the features of the individual that may have an impact on the experience of disability, and include gender, age, other health conditions, fitness, lifestyle, habits, coping styles, social background, education, past and current experience, overall behaviour patterns, individual psychological assets and other characteristics.

18.2.2 The Association for Persons with Severe Handicaps (TASH)

The Association for Persons with Severe Handicaps (TASH) defines severe disability by focusing on the necessary support needed by an individual in more than one major life activity. According to TASH, persons with severe disabilities include

individuals of all ages who require extensive ongoing support in more than one major life activity in order to participate in integrated community settings and enjoy a quality of life that is available to citizens with fewer or no disabilities. Support may be required for life activities such as mobility, communication, self-care, and learning as necessary for independent living, employment and self-sufficiency (Meyer et al. 1991: 19).

The severely disabled population is heterogeneous and therefore the levels of support required to meet the needs vary. Instead of using the traditional classification system for intellectual impairment (mild, moderate, severe and profound), TASH rather defines four levels of support necessary for the integration of the person into the community, i.e. intermittent, limited, extensive and pervasive. Although the type of support varies across individuals, it also varies across the different skills areas impacting on independent living, such as communication skills and self-help skills. Support should be seen as ongoing in nature and the level of support may change over the individual's lifespan.

The ICF and TASH respectively focus on individuals' levels of functioning and levels of support in order to maximise their potential. These two concepts are closely related and educators should acquire sensitivity for learners with severe disabilities' level of functioning so that the necessary support can be provided in the classroom context in order for these learners to function optimally. Different ways of adapting the external environment to maximise the learner's potential will be discussed later in this chapter.

18.3 INCIDENCE

Referring to Iwakuma and Nussbaum's (2000) statement quoted earlier that 80 per cent of all individuals with disabilities live in either Africa or Asia, it is necessary to identify and differentiate persons with multiple disabilities to be found in South Africa. Figure 18.3 presents the percentages of disability according to the population census of 2001 (Statistics South Africa 2004).

Respondents classified 5 per cent of the population as having a serious disability, preventing

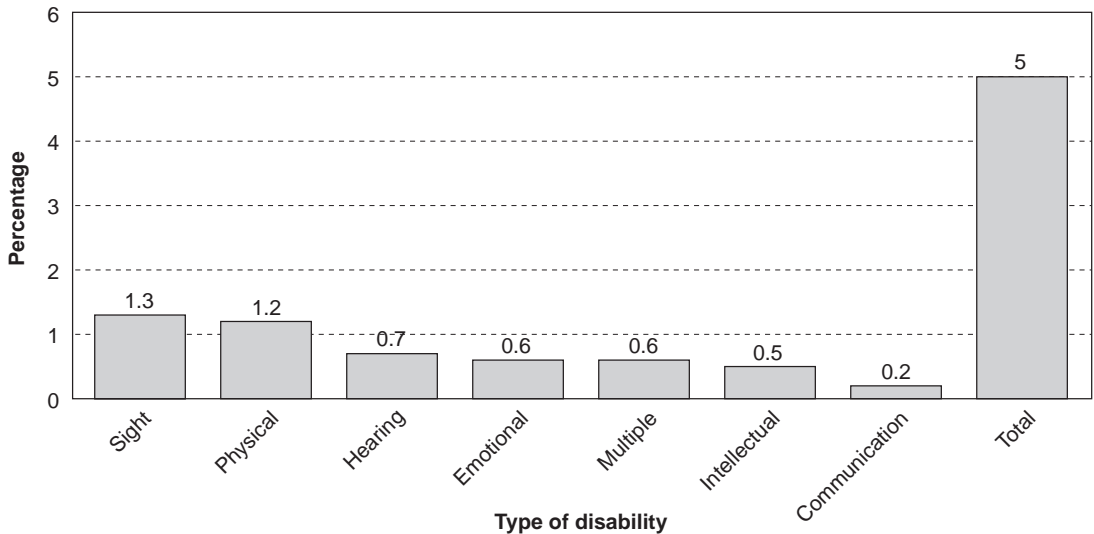


Figure 18.3 Prevalence of disability in South Africa

Source: Statistics South Africa 2004

full participation in life activities, for example, in the educational, work and social spheres. The population of individuals with multiple disabilities comprise 0,6 per cent of the total population of all people with disabilities in South Africa. It is well documented that there is an increase of severe and/or multiple disabilities (Mulligan-Ault et al. 1988; Thompson & Guess 1989). The reason may be two-fold. With the improvement of medical technology and care, there is a decrease in the mortality rate at birth, which means that more learners at risk survive, increasing the prevalence of subsequent disabilities. The second reason is the total increase in the population worldwide, resulting in a proportionate increase of individuals with disabilities.

This growing population of learners with severe and/or multiple disabilities presents an immense challenge to professionals who are responsible for their education. As already mentioned, these learners often are involved in various therapeutic interventions (e.g. occupational therapy, speech therapy, physiotherapy) but in the educational system it becomes important that the role of therapy should be to facilitate and not to replace education. The Integrated National Disability Strategy (INDS) (2004) states that all learners have the right to education. The challenge lies in how to adapt

the classroom context so that learners with severe and/or multiple disabilities can learn at their own rate in the classroom.

18.4 CAUSES

It is not always possible to determine the aetiology of developmental disabilities. We can, however, assign causes of developmental disabilities into two categories, i.e. physiological and environmental. The physiological causes of the conditions interact with the child's environment to aggravate, correct or compensate for the problem. Therefore, we should always view a child with a disability holistically, as the environmental factors can also contribute to the outcome of the condition. Table 18.1 gives an overview of the most common conditions that educators may come across in schools.

Although it is important to recognise a specific disability a child might have (e.g. cerebral palsy), it is more important to understand the effect the disability has on his ability to learn and adapt. In the framework of the social model the emphasis now falls on recognising and developing strengths and capabilities in a child and not only focusing on the inabilities, challenges and areas of weakness.

Table 18.1 Description of most common conditions

Condition	Involvement	Effect
A. Genetic factors		
(i) Chromosomal errors		
Down syndrome	Extra chromosome 21 material	Cognitive impairment (mild to severe), defective heart structure, nystagmus (involuntary movement of the eyes), facial dysmorphism (Bellenir 1996)
Fragile X syndrome	“Fragile” site on the X chromosome (less severe in females)	Cognitive impairment (moderate to profound), autistic behaviour, deficits in visual-spatial perception, speech and language deficits, poor attention and short-term memory, facial dysmorphism (Bellenir 1996)
Prader-Willi syndrome	Genetic abnormality of chromosome 15	Hypotonia (reduced tone in skeletal muscles), cognitive impairment, obsession with food and eating, hypogonadism (diminished sexual development) (Bellenir 1996)
Angelman syndrome	Genetic abnormality of chromosome 15, neurogenetic disorder	Severe cognitive impairments, ataxia (uncoordinated muscular activity), little or no functional speech, seizures, inappropriate laughter
(ii) Other genetic factors		
Usher syndrome		Hearing loss and progressive loss of vision from retinitis pigmentosa (RP), balance problems
De Toni-Fanconi syndrome	Impairment in the proximal tubular function of the kidneys, causing certain compounds to be excreted in the urine instead of being absorbed	Growth failure, decreased and abnormal bone mineralisation (osteomalacia), dehydration
CHARGE syndrome (Brown 1996; Moss s.a.)	C - Coloboma H – Heart defects A – Atresia of the choanae R – Retarded growth G – Genital anomalies E – Ear malformations	A cleft or keyhole-shaped defect occurring in one or more areas of the eye including the iris, retina or lens. Including defects of the cardiac arteries and ventricles Closure of the passages from the back of the nose to the throat which allow breathing through the nose Usually manifests when the child is older; growth is usually retarded by one third Incomplete or underdevelopment of male sexual organs; in girls the labia may be small or even absent May occur in the outer ear, the middle ear (misshapen ossicles) and the inner ear; conductive or sensory hearing loss, or both (mixed hearing loss) may occur
Rett syndrome	Neurodegenerative disorder (exclusively in females)	Cognitive impairment; growth retardation – apparent normal development until age 6–18 months, after which motor skills, social integration and speech and language stagnate, and autistic behaviour, seizures and curvature of the spine develop (Bellenir 1996)



Table 18.1 Continued

Condition	Involvement	Effect
(iii) Metabolic errors		
Sickle-cell anaemia	Abnormal red blood cells which clog blood vessels	Poor delivery of oxygen to the tissues and organs; abnormal red blood cells are easily destroyed and this results in chronic pain in joints; can cause organ damage or a stroke, visual problems (Bellenir 1996)
Galactosemia	Galactose (sugar) increase in the blood	Cognitive impairment, cataracts, liver disease (Bellenir 1996)
Phenylketonuria (PKU)	Abnormal metabolism, too much phenylalanine	If not treated soon after birth – cognitive impairment, seizures, excessive restlessness, irritable behaviour, musty body odour (Bellenir 1996)
B. Other factors (pre-, peri- and postnatal)		
Rubella (German measles)	When the mother is infected with the rubella virus before 20 weeks of gestation, the baby's vital organs can be affected.	Deafness is most common; eye defects, i.e. cataracts, glaucoma; cardiac defects
Rhesus (Rh) factor incompatibility	When the mother's Rh factor is negative and the father's Rh factor is positive, the baby's Rh factor would be positive. When blood of the baby enters the mother's system, she creates antibodies against the Rh positive factor.	Antibodies attack the baby's blood, causing breakdown of red blood cells. Anaemia will develop which can cause brain damage, resulting in neurological impairments.
Malnutrition	Weight loss due to limited intake of proteins	Low energy levels, impact on growth development, psychological problems, e.g. irritability, poor concentration
HIV (Human immunodeficiency virus) Aids (Acquired immune deficiency syndrome)	Virus responsible for the gradual deterioration and disintegration of the cellular immune system (Cusack et al. 1990)	In South Africa 40% of HIV-infected infants have developmental delays (Potterton & Eales 2001); psychological and neurological impairments develop later
Cerebral hypoxia	A decrease of oxygen supply to the brain even though there is adequate blood flow. This occurs due to drowning, strangulation, choking, suffocation, head trauma, etc.	Brain cells die within five minutes without oxygen, which may result in seizures, psychological and/or neurological impairments (Bellenir 1996)
Foetal alcohol syndrome	Damage to a developing foetus due to the consumption of alcohol (or drugs) by the mother	May present with developing disabilities, e.g. intellectual impairment, learning and physical disabilities, attention deficits and impulsivity (Burgess & Streissguth 1992)
Traumatic brain injury (TBI)	Damage to the brain by an external force (not of degenerative or congenital nature)	Impairment of cognitive abilities or physical functioning, leading to functional disabilities and/or psychosocial maladjustment (National Head Injury Foundation 1985)

Educators should be aware of the advantages and disadvantages of using diagnostic categories for learners in their classrooms. The advantage of a diagnosis according to the medical model is that the appropriate medical treatment for the condition can be implemented. The advantage of diagnosing according to the social model becomes clear in the classroom context as such a diagnosis will enable the teacher to view the functioning child as a holistic being in a social context. However, a diagnosis can easily lead to labelling learners with disabilities where the focus then falls on the generic disability and not on individuals with their own strengths and weaknesses. Labels often produce negative attitudes and this might not only cause the educator to overlook the hidden potential of the learner, but also to expect too little from the learner during classroom activities.

Traditionally there are a few conditions that have been associated with severe and/or multiple disabilities. A brief description of some of the most commonly found ones are presented in the next section.

18.5 CHARACTERISTICS OF LEARNERS WHO ARE SEVERELY AND/OR MULTIPLY DISABLED

Learners with severe and/or multiple disabilities are a heterogeneous group presenting with diverse characteristics, abilities and challenges and therefore having different needs. Their problems differ both qualitatively and quantitatively. However, there are similarities, and knowledge about the characteristics of these learners will increase our understanding of how to address them for optimal development and functioning of the learner. Although there are advantages to understanding learners with disabilities, it is always dangerous to label and concentrate only on their challenges and disabilities, thereby ignoring their strengths and abilities. The intelligence of learners with severe physical disabilities and/or sensory impairments can range between below to above average. However, the learners with below-average cognitive abilities are our concern, because they need greater intervention and special adaptation in the classroom. Learners with severe and/or multiple disabilities have signifi-

cantly more difficulty learning than their typically developing peers (Westling & Fox 2000).

According to the definition of severe and/or multiple disabilities, these learners will have two or more of the following characteristics.

18.5.1 Ability to learn

These learners tend to learn new skills and acquire new information much more slowly than the average learner. Their intellectual functioning usually keeps pace with physical growth as learning and experience go hand in hand (Steenkamp & Steenkamp 1992). General development therefore is much slower and more limited and would impact on the time required in the classroom to learn new skills. These learners learn best by imitation, demonstrations, continual practice of skills and unambiguous feedback (Uys 2003) but not so much from observations and incidental learning (Westling & Fox 2000). They need considerably more time to practise skills before they become habitual, and without constant stimulation they tend to forget newly learnt behaviours, i.e. after school holidays it seems as if these learners' performance has declined.

18.5.2 Cognition

The sensorimotor experience of a young learner provides the underlying information which facilitates the interrelated development with other domains, i.e. perception, cognition and language (Dunn 1996: 36). The ability to acquire knowledge through perception, grouping, analysis, synthesis and memorising may be impaired in the learner with multiple disabilities, who develops much more slowly than the typically developing learner. His perceptions are often distorted and therefore he might experience difficulties in learning what particular characteristic gives meaning to an object so that the incoming information will fit the action of the object. For example, if the learner is presented with a watering-can, the action of pouring water should be immediately associated with the object. If not, a poor foundation for concept formation is laid and this can result in impoverished conceptualisation. This explains why this learner will tend to rely on others for solving problems. Problems are observed in all areas of

perceptual development, i.e. basic visual perceptual skills, spatial orientation, figure-ground and form constancy, impacting directly on academic performance.

18.5.3 Physical

Problems in this area are widespread and include poor fine and gross coordination, hyperactivity or hypo-activity, poor balance, disturbances of body image and body scheme, and a tendency to tire easily (emotionally and physically). The clinical picture portrays a wide range of motor abilities, from being a clumsy learner (intellectual impairment) to having severe motor impairment leaving the learner with few functional movements (i.e. cerebral palsy or spina bifida). Other physical problems may include the cardiovascular, respiratory and gastrointestinal systems. (Refer to Chapter 13C to see the impact of abnormal muscle tone on these systems). When a learner has a physical disability, energy is used to “survive” the disability and not for academic learning. Imagine that you are a learner with muscular dystrophy and poor balance. All your energy and concentration are focused on maintaining your balance on the chair and on not falling off. You will have no residual energy to concentrate on academic activities in the classroom.

18.5.4 Sensory

Another term that is used for deaf-blindness is multi-sensory impairment. This name indicates that a person may have the loss or impairment of more than one of his senses, the most common being deaf-blindness. Although deaf-blindness may indicate a total loss of hearing as well as sight, fortunately it is relatively uncommon for learners to exhibit both total deafness and total blindness (Sacks & Silberman 1998: 29). Usually these learners exhibit varying levels of hearing and visual loss. Other impairments, such as intellectual and physical ones, may accompany deaf-blindness. Multi-sensory impairments are, therefore, a heterogeneous group, which is very difficult to define (Murdoch 1997: 356).

The most common global cause of deaf-blindness is when the mother contracts rubella in the first trimester of pregnancy. Other causes are con-

genital syndromes such as, *inter alia*, Usher syndrome, De Toni-Fanconi syndrome, CHARGE syndrome, and Laurence-Moon-Biedl-Bardet syndrome. Usually the child may be born with either a hearing impairment (Usher syndrome) or a visual impairment but may develop a visual impairment (retinitis pigmentosa in the case of Usher syndrome) or a hearing impairment after birth.

Vision and hearing are both called the distance senses because they enable people to receive information from a distance (e.g. one does not have to be near a car to see or hear it coming). Learners with multi-sensory impairments are at a disadvantage to use their distance senses to receive information. Multi-sensory impairment therefore alters the way in which a person receives and sends information, and interacts with the social and physical environment (Murdoch 1997: 356).

ACTIVITY

Please read Chapter 14 on visual impairment and Chapter 15 on hearing impairment. Draw up a table with three columns and write at least *five learning-related needs* unique to learners with visual impairments in the first column, to learners with hearing impairments in the second column, and to learners who are deaf-blind in the last column. See the example below:

Learners with visual impairments	Learners with hearing impairments	Learners who are deaf-blind
Communicate mainly by means of hearing	Communicate mainly by means of vision	Communicate mainly by means of touch

From the table it will be clear that deaf-blindness causes learners to be cut off from other humans, except if people consciously make an effort to establish communication with them. Chen and Haney (1995: 25) summarise the devastating effects of deaf-blindness on a learner’s learning and development as follows:

- Reduced mutual interaction with educators
- Backlogs in the acquisition of attachment to educators

- Acceptance of a passive role of receiving
- Increasing self-stimulating movements
- A reduced repertoire of preverbal communicative behaviour

18.5.5 Language and communication

The young child with severe and/or multiple disabilities thinks in terms of action and images rather than language or symbols (Piaget's pre-conceptual phase of cognitive development). This implies that the child cannot use language maximally in his thinking to replace concrete thought (Burden 1997: 205). Receptive language is influenced as understanding complex verbal language may be impaired. The child does not readily use language for thinking or as a mental tool (Burden 1997: 207). He tends to talk later than typically developing learners, has a very limited and concrete vocabulary, and uses simple sentence construction. Poor articulation and voice disorders are common and these learners usually have little or no functional speech. (Refer to Chapter 9 for an in-depth discussion of the impact of severe disabilities on language development and intervention strategies.)

18.5.6 Social behaviour

Learners with severe and/or multiple disabilities may have problems with social interaction, including poor conversational skills, egocentricity, poor social judgement, inappropriate behaviour, emotional instability and poor decision-making skills. Poor personal habits and appearance have a detrimental effect on their social interaction (Kaplan & Sadock 1982). Gaylor-Ross and Peck (1984) found in a study that the social interaction between people with and without disabilities only increased after both parties had been taught or prompted to interact. This makes us believe that the best precursors of social interaction are opportunity, understanding and common interest (Westing & Fox 2000).

18.5.7 Emotional responses

Emotional responses are of short duration and change readily with poor execution of control. Learners with severe and/or multiple disabilities experience far more anxiety than typically devel-

ACTIVITY

It is always difficult to embrace people with disabilities if one has never been exposed to understanding this sector of the population. How would you prepare learners in the classroom for the arrival of the new learner with severe and/or multiple disabilities? You may start by introducing the new learner to the class by conveying his strengths, likes and dislikes, and explain how the class could contribute to making life easier for the newcomer. Provide enough information on the type of disability (or disabilities) the learner has and give the class time to ask questions about it. It may be necessary to include some of the other members of the school-based support team or even district-based support team for assistance.

oping learners because they cannot meet the demands of the activities. This usually manifests as a lack of interest or diminished attention (Burden 1997). Some learners will demonstrate challenging behaviour (i.e. hand flapping, head banging, hitting other people), but the cause of these types of behaviour is difficult to explain, and it may even be used as a form of communication (i.e. protesting or requesting). (Refer to Chapter 20 for more information on challenging behaviour.)

18.5.8 Motivation and participation

Learners with severe and/or multiple disabilities show considerable lack of inner vitality, meaning that their activity participation level is lower than average. They lack spontaneity and their creative participation is impaired (Pretorius 1997). There should be a direct relationship between the child's skills and the demands of the activity – if the demands are too high the child will not be motivated to participate in the learning experience and will withdraw.

18.5.9 Memory and concentration

Memory and concentration are one of the biggest problems in an educational setting because the

learner with severe and/or multiple disabilities may experience difficulty in screening unnecessary or irrelevant detail and has a short attention span and low resistance to distraction, which imposes strain on the learning process (Pretorius 1997). Burden (1997) indicates that the lower the learner's intellectual ability, the poorer his short-term memory. This might be due to impaired sensory integration and organisation of incoming information. Remembering information that has been learned previously presents a challenge to such learners as they have impaired long-term memory. If skills are not practised and used on a continual basis, they will be forgotten and usually need to be taught again (Westling & Fox 2000).

18.5.10 Self-esteem

During the learning process the typically developing child experiences the pleasure of mastery and the experience of success in activities, which creates a desire to practise and learn more. This process is severely hampered in the child with severe and/or multiple disabilities since, from past experience, he expects to fail and to be unable to complete tasks. This has a negative impact on his self-esteem.

18.5.11 Self-regulation

Sensory regulation is the capacity to regulate the intensity of arousal experienced while remaining engaged in the interaction of activity. It is the internal capacity to tolerate sensory stimulation from the environment and other people. It is the senses working together that form a complete picture of what we are physically, where we are and what goes on around us.

Often learners with severe and/or multiple disabilities cannot adapt to changes in the environment and they need a stronger external structure to regulate their behaviour. For instance, clinging to the mother or carrying a favourite object into a variety of social contexts enhances a feeling of security when environmental changes occur.

18.5.12 Self-help skills

There is a direct relation between the level of motivation, sensorimotor limitations and the level

of independence in all self-help activities. The child with severe and/or multiple disabilities is usually the one with greater sensorimotor involvement and therefore tends to stay dependent on external support to a greater or lesser extent. This tendency of dependency will exclude him from many social experiences and expose him to health hazards if he is unable to perform basic self-help tasks. An unfortunate consequence of overprotection or even impatience by the caregiver is that these learners are never required to help themselves and the phenomenon of learned helplessness will prevent them from reaching a stage of independence.

18.6 ASSESSMENT OF LEARNERS WITH SEVERE AND/OR MULTIPLE DISABILITIES

Learners with severe and/or multiple disabilities are seen as "untestable" due to the influence of their impairments on their performance and therefore the outcomes from traditional methods of assessment, i.e. standardised tests do not reflect the learners' actual abilities or progress. Most of the standardised tests are pen-and-paper ones and it would be unreasonable to expect a learner who has difficulty holding a pencil to carry out such a test. If a learner has a language deficit he may seem to have a cognitive deficit when assessed by traditional measures, because a perceived deficit in one developmental domain may mask abilities in another area. This may lead to misinterpretation of the learner's performance and ultimately to inappropriate planning for the learner's individual support plan. The use of developmental norms is therefore not appropriate, as learners with severe and/or multiple disabilities do not develop in the typical sequence and some of the skills required are physically impossible for them.

The trend is to apply a functional assessment, which should be activity based, and to do the assessment in a natural context as this would increase the authenticity of the assessment. It also underscores the idea of focusing not only on the challenges (inabilities), but also on the capabilities (abilities) of the learner. The team, including parents, caregivers, educators and health care

workers, should select activities that are important for the learner in his particular context (e.g. school). This way they can assess which skills the learner is able to perform as well as the level of his independence. People who are familiar with the learner should be included in the initial assessment to observe functional skills and comprehensively record performance on all developmental domains, namely sensorimotor, cognition, self-care, social-emotional and communication-language (Linder 1993). This means that the parents or caregivers of the learner should be present during the assessment as they can provide qualitative information to the assessment team.

The most important factor to remember is that the main purpose of assessment is to establish educational goals. A “one size fits all” approach could not be applied in the assessment of learners with severe and/or multiple disabilities, and the following readings should be considered: Browder, 1991; Linder 1993; Kleinert et al. 1997.

According to the definitions provided earlier, Kagiso is a learner with severe and/or multiple disabilities (see case study on Kagiso at the beginning of this chapter).

Please read Chapters 12–17 and integrate this knowledge with the abovementioned information as follows:

Draw a table with two columns. In the left column, make a list of the challenges Kagiso will experience. In the right column, give an indication of how each challenge will impact on his independent participation in the classroom.

ACTIVITY

in the classroom context, rather than in isolation in individual therapy sessions. The term “trans-disciplinary team approach” is used in the medical field, but in the educational system the same approach is assumed by the district-based as well as the school-based support team. The educator would be the person to implement the recommendation after being trained. This shift from individual specialist interventions to a more integrative approach supports the practice of educating learners with severe and/or multiple disabilities in general education (Giangreco et al. 1997). For example, a learner with low muscle tone in his trunk as well as poor vision would tend to fall forward during writing activities. The therapist suggests the use of a tilted surface for this learner as this would force him to sit in a more upright position which would improve the cardio-respiratory function and the upper limb function during writing, and the learner would have better eye contact with the educator when being spoken to. Implementing the therapist’s suggestion in the teaching situation (collaborative team work) will be of benefit to the learner in different social contexts.

The use of paraprofessionals is becoming more popular in schools. A paraprofessional is a person who enjoys working with learners with disabilities and functions as an aide to the teacher in the classroom to assist with all the learners. Specialised responsibilities may be assigned to the paraprofessional, i.e. to accompany a learner with severe disabilities throughout the day and assist him with all activities. Although teachers are used to working alone in the classroom, the benefits of an assistant outweigh the disadvantages (Mas-tropieri & Scruggs 2004).

18.7 COLLABORATIVE TEAM WORK

The trans-disciplinary team approach was indicated through research to be an effective method of managing learners with disabilities and their families. According to this approach all team members will view the learner holistically and regard the family as equal partners in the intervention team. The different professionals are all involved in the assessment of the learner and make the necessary recommendations to be implemented

18.8 ADAPTING THE CLASSROOM FOR ACTIVE PARTICIPATION

The goal of teaching is to ensure that all learners actively participate in the classroom and learn. This implies that the teacher of learners with severe and/or multiple disabilities should implement specific strategies so that these learners can also acquire new skills. To ensure active participation, it is necessary to analyse the different aspects involved, i.e. the learner, the teacher, the activity and the method of adaptation. It is only

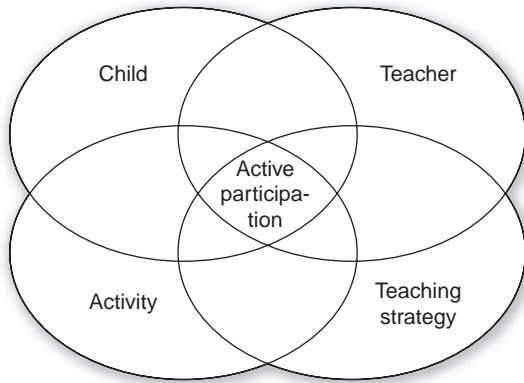


Figure 18.4 Model of active participation

through active participation that a person learns new skills.

Each one of these plays an important role in the outcome to facilitate the learning or acquiring of new skills in the classroom. The school-based support team should know the learner's capabilities and challenges and this can only be obtained after a thorough assessment. When the areas in which the learner does not have adequate skills to do activities have been identified, they should be analysed, and recommendations should be made. The learner with severe and/or multiple disabilities benefits from positive social interactions with peers and it is therefore suggested that peer support networks, friendship and social circles, and participation in after-school activities should be created.

18.8.1 The learner

Because learners with severe and/or multiple disabilities have impaired physical or motor capacity, they are restricted in their movements and their ability to manipulate objects. There are many accommodations – both high and low technology – available to increase active participation in activities. The first aspect is effective positioning (see 18.9.3 for more information).

18.8.2 The activity

The demands of the activities presented to the learners should also match their abilities. If the demands of the activities are too high, they will

not experience success and thus are likely to withdraw and not participate further. Because of the learners' physical limitations and poor coordination, it helps during activities to use non-slip mats and perhaps to have edgings around the working surface to prevent objects from rolling out of reach. Selection and adaptation of the activities should match the abilities and needs of the learners, and each learner should be viewed and treated individually. What works for one person does not necessarily assist another. For example, one principle for improvement of attention is multi-sensory input, as this will keep the learner attentive and interested in the learning process (Muselwhite 1986), but for another learner multi-sensory input could cause over-stimulation resulting in withdrawal. Sometimes it is necessary to allow other learners to do certain steps of the activity for the learner with severe and/or multiple disabilities, e.g. if he cannot fold paper accurately after decorating a card, the classmates could be of assistance. Activities and any adaptations should be safe and durable as these learners can injure themselves on such things as sharp corners. Some may have a problem with swallowing or an over-production of saliva, so materials should be covered in plastic for durability.

18.8.3 Teaching strategies

The third area of adaptation is teaching strategies in the classroom that form the foundation for education of learners with severe and/or multiple disabilities. Downing (2002: 22) identified two "promising" strategies, i.e. cooperative learning and thematic teaching.

Johnson et al. (1993) describe four components of cooperative learning. **Positive interdependence** refers to the learners working together to attain a common goal (group projects). **Individual accountability** means that each learner has a specific task to fulfil to contribute to the group's end product. **Interpersonal and small-group skill development and group processing** refers to a target social skill that is taught in the class. Performance is then assessed at the end of the class. The last component is **face-to-face interactions**, which occur in cooperative groups when learners are working together on projects. The group com-

position should be heterogeneous with a mix of culture, gender and abilities (see Chapter 4).

Kovalik and Olsen (1992) identified eight components that are directly involved in the improvement of the performance of learners. These components are absence of threat, meaning of content, choices, adequate time, enriched environment, collaboration, immediate feedback and mastery. King (1978) also added that the person should be actively participating in the activity in order for learning to take place. These strategies support the second teaching strategy, namely thematic teaching. Thematic teaching centres on a specific theme, is presented in different content areas, corresponds to the way learners naturally learn, allows for greater continuity in the curriculum and ensures generalisation between different contexts. This is important for learners with severe and/or multiple disabilities as they have difficulty generalising to other environments and people.

18.8.4 The educator/teacher

The last component in the equation to ensure active participation is the teacher who should integrate all the above components. Although teamwork is always of the utmost importance in the educational system, the importance of the teacher is evident in that teaching in the classroom is the culmination of the input by all other team members. In the classroom, the implementation of therapeutic strategies will enhance the learner's optimal functioning. Teachers therefore need to be aware of their continuing complex and evolving role in the classroom. This requires the teacher, who needs extra training provided by other team members, to be part of the school-based support team, to trust other team members in any recommendations made for each specific case, to be able to let go of the traditional definitions of the role of a teacher, and to participate in an integral team to ensure an increase in performance of each learner in the classroom.

18.9 ADAPTING TEACHING STRATEGIES

From the above it seems as if learners with severe and/or multiple disabilities do not have potential

for learning, as there are so many influences from their health conditions on their body functions and structural levels. It is difficult to look past the severity of the condition of the learner as it tends to overshadow the potential that is hidden in each one. Learners with severe and/or multiple disabilities do have the potential to learn, but this may not follow the same time span as typically developing learners, and these learners may never reach the same level as their peers. However, we do have to adapt teaching strategies so that they can reach their optimal potential.

Downing (2002), Cohen and Lynch (1991), and Arllen et al. (1996) suggest specific questions a teacher can ask to determine whether adaptations are necessary and which adaptations should be implemented for each learner:

- What are the teaching materials necessary for the lesson?
- Must the teaching materials be adapted for the learner to be able to participate?
- Where will the lesson be taught, and will the learner have access to the environment?
- What is the best position for the learner to be in during the lesson?
- Where is the best position for the learner to be in the classroom during the lesson?
- What is the best learning style for the learner?
- How can the curriculum be adapted so that the learner will be able to learn?
- Would the learner need extra support and if so, who would provide it?
- What methods are provided for the learner to express himself during the lesson?

18.9.1 Learning style

Learners with severe and/or multiple disabilities have at least one sensory limitation together with other disabilities. It is therefore important to remember that these learners each have their own distinct way of learning and we should not work towards making them conform to a specific learning style, but rather help them to be successful in their unique way.

There are, however, general teaching strategies that could be implemented to enhance learning in the classroom:

- **Planning.** Carefully identify the outcomes of each lesson and include the methods of how adaptations should be implemented.
- **Time.** Learners with severe and/or multiple disabilities need more time to process and organise incoming information. Extra time for practising should be included in the planning of the lesson. The time of day is also important in deciding when an activity should be presented. More complex activities should be presented earlier in the day.
- **Management of behaviour.** It is important to have basic rules in the classroom to which everybody should adhere.
- **Instructional groups.** The size of the group should match the objective of the learning activity.
- **Presentation of the learning activity.** Clear directions should be augmented by other teaching aids (auditory, visual, tactile, etc.).
- **Routines.** Establish daily and weekly routines, be prepared for each lesson and have all the necessary materials ready. This will decrease the anxiety and increase the level of performance of the learners (see the following activity box regarding schedule planners).
- **Feedback.** Learners need unambiguous feedback from the teacher and the activity (external) and from his own feelings about the achievement (internal). Feedback should be viewed as a learning opportunity. The performance of the learner will improve if the criteria for achievement are known.
- **Internal locus of control.** This is the relationship between effort and achievement. When a learner learns that mistakes are temporary and can be corrected through hard work, he learns to take responsibility for his actions, and learned helplessness will decrease.
- **Structure of the classroom.** Evaluate the noise levels, other distractions, desk arrangements, lighting, temperature, ventilation and work location that would enhance each learner's performance.
- **Monitor progress.** Because learners with severe and/or multiple disabilities tend to progress at

a slower rate than typically developing learners, modified systems of tracking performance should be implemented. If the learner is not progressing, changes should be made in the method of teaching.

- **Integrate vocational skills into lessons.** Preparation for employment starts at a very early age and activities should be viewed as pre-vocational training. The long-term goal should always be on employment, but the necessary skills should be incorporated in each lesson.
- **Expectations.** What the educator is expecting of the learner has a direct bearing on how much or how little the learner learns. Because of the severity of the disability, we sometimes assume that the learner will not be able to learn, and that influences our realistic expectations.
- **Therapeutic use of self.** The educator's attitude towards the learner influences the learner's performance. The educator should show real concern towards the learner's interests and accomplishments.

For more information on teaching practices, the following literature could be consulted: Sikorski et al. (1996), and Wolery et al. (1992).

Use of schedule planners

Through the use of a schedule planner the learner with severe and/or multiple disabilities learns various skills such as self-control, self-management, communication, as well as reading, writing and mathematics (Massey & Wheeler 2000). A schedule planner is a row of boxes in which an object, picture, word or combination thereof is placed – depending on the learner's development – that represents the activity to be presented in the classroom. Usually only one box is opened at a time and closed before the commencement of the following activity. The whole schedule could be discussed with the learner at the beginning of each day so that he is orientated and can anticipate events of the day. This way disruptive or challenging behaviour is reduced.

Design a schedule planner for your classroom that represents the programme for the whole day. What would you choose to include in each segment to represent the activities and how would you implement this so that communication is also facilitated?

18.9.2 *Adapting teaching strategies for the learner who is deaf-blind*

The same curriculum as that for sighted and hearing learners can be used for learning and development, but it should be adapted, while outcomes should be set according to the learner's level of development.

Augmentative and alternative communication by means of touch cues, tangible symbols (putting a spoon in the learner's hands indicates that it is lunchtime), finger spelling, tactile sign language, Braille, speech, etc. is necessary to communicate with learners who are deaf-blind. They may, however, use different communication modes for receptive and expressive communication. For example, a learner who is deaf-blind may receive information through finger spelling or tactile sign language and tangible symbols but express himself by means of tangible symbols shown to the teacher or through speech (Sacks & Silberman 1998: 146). For reading and written communication they may use Braille or large print and handwriting, depending on their residual vision.

Learners who are deaf-blind need concrete experience to understand new concepts and information. Their teaching should therefore not be bound to the classroom. Models could be used effectively if concrete experience is dangerous or not available. This further implies that teaching is mainly individualised. A teacher assistant would be indispensable in helping the teacher with the transfer and establishment of new concepts while the teacher is teaching the other learners.

Nowadays, many assistive devices, especially in communication, are available for learners who are deaf-blind. Amplification of residual hearing by means of hearing aids and FM systems is available, as well as large print, Braille and optical devices such as closed-circuit television for visual

aids. (Please read Chapters 14 and 15 for more information.)

18.9.3 *Adapting teaching strategies for the learner with physical disabilities*

Correct positioning is the key to optimal functioning of the learner with physical disabilities. Learners should have the opportunity to change positions during the day, as each activity requires a position that matches the learner's ability and the demands of the activity. For example, an upright sitting position should be maintained during reading and writing activities, while a stable supine position on the mat is required during the exercise class, where the necessary head and lateral supports should be provided. Educators should be careful not to keep a learner in one position for too long as this could lead to the shortening of muscles groups (contractures), causing discomfort for the learner who may even develop pressure sores. If a learner is comfortable in his positioning equipment and has the added benefit of optimal movements, he will be able to concentrate on the learning activity presented and not on maintaining balance or on the discomfort in the positioning equipment. (Refer to Chapter 13C for more information on positioning.)

Another adaptation for the learner is the provision of assistive technology so that the learner can participate in activities. There is a wide range available which includes products like pencil grips, Velcro mittens to pick up objects (Beukelman & Mirenda 1998), calculators with extra large numbers, and adapted eating utensils and drinking cups (Beukelman & Mirenda 1998). A wide variety of technologies, for example switches, is available that could be linked to items such as a tape recorder, radio and voice output device (refer to Chapter 9).

If Kagiso and Mike were in your classroom, answer the questions provided in section 18.9 on the adaptation of teaching strategies to indicate how you would address their individual needs.

18.10 CONCLUSION

In a country where the prevalence of severe and/or multiple disabilities is 0,6 per cent of the total population of all people, and where there is a strong indication of an increase in this prevalence, attention must be paid to the development of learners with disabilities in order to improve their quality of life and the roles they will be able to play in society.

Fortunately, the commitment of families and professionals is evident in that service delivery improves daily. We are moving away from traditional, not always appropriate, models of service delivery to collaborative approaches to intervention, constantly identifying factors that contribute to programme efficacy.

Intervention for the learner with severe and/or multiple disabilities involves the input of various professionals, family members and caregivers, in training, teaching, facilitating and supporting the learner to develop his full potential in a variety of social contexts. The vital importance of the input of each team member must always be realised, but in viewing this team approach from an educational point of view, it becomes evident that the role of therapy is to facilitate but never to replace education. It is within the educational context that we find the culmination of the contributions by all the other team members to the enhancement of optimal functioning of the learner with severe and/or multiple disabilities.

Questions

1. There is a distinct difference between the terms “severe disabilities” and “multiple disabilities”. Explain the differences as well as the similarities.
2. The model of active participation prescribes the equal involvement in four areas, i.e. the learner, the activity, teaching strategies and the educator/teacher. When you revisit the case of Kagiso, what will you do with regard to each of these four areas to ensure that Kagiso is actively participating in school?
3. Strategies to enhance teaching in the classroom are used by all teachers. However, when there is a learner with a disability in your class-

room, these teaching strategies need to be adapted to ensure learning also includes learners like Kagiso and Mike. Discuss how teaching strategies should be adapted in the classroom for learners with severe and/or multiple disabilities.

Bibliography

- American Association on Mental Retardation (AAMR). 1992. *Mental retardation: definition, classification, and systems of supports*, 9th ed. Washington, DC: AAMR.
- Arlen, N.L., Gable, R.A. & Hendrickson, J.M. 1996. Accommodating students with special needs in general education classrooms. *Preventing School Failure*, 41(1): 7–13.
- Bellenir, K. 1996. *Genetic disorders sourcebook. Health reference series: Volume 13*. Detroit, MI: Omnigraphics.
- Beukelman, D.R. & Mirenda, P. 1998. *Augmentative and alternative communication: management of severe communication disorders in children and adults*, 2nd ed. Baltimore: Paul H. Brookes.
- Bornman, J. 2004. The World Health Organization’s terminology and classification: application to severe disability. *Disability and Rehabilitation*, 26(3): 182–188.
- Browder, D.M. 1991. *Assessment of individuals with severe disabilities: an applied behaviour approach to life skills assessment*, 2nd ed. Baltimore: Paul H. Brookes.
- Brown, D. 1996. Conditions and syndromes that can result in deafblindness. *Deafblind Education*, January–June: 9–10.
- Burden, A. 1997. *Learners with special educational needs. (Intellectual disability)* (only study guide for FDESEI-H). Pretoria: Unisa.
- Burgess, D.M. & Streissguth, A.P. 1992. Fetal alcohol syndrome and fetal alcohol effects: principles for educators. *Phi Delta Kappan*, 74: 24–29.
- Chen, D. & Haney, M. 1995. An early intervention model for infants who are deaf-blind. *Journal of Visual Impairment and Blindness*. 89(3): 213–221.
- Cohen, S.B. & Lynch, D.K. 1991. An instructional modification process. *Teaching Exceptional Children*, 23(4): 12–18.
- Cusack, L., Phillips, L. & Singh, S. 1990. The role of the occupational therapist in HIV disease and Aids. *British Journal of Occupational Therapy*, 53(5): 181–183.
- Downing, J.E. 2002. *Including students with severe and/or multiple disabilities in typical classrooms: practical strategies for teachers*, 2nd ed. Baltimore: Paul H. Brookes.
- Dunn, W. 1996. The sensorimotor systems: a framework for assessment and intervention. In Orellove, F.P. & Sobsey, D. (Eds), *Educating children with severe and/or multiple disabilities: a transdisciplinary approach*, 3rd ed. Baltimore: Paul H. Brookes, 35–78.
- Gaylor-Ross, R. & Peck, C.A. 1984. Integration efforts for students with severe mental retardation. In Bricker, D. &

- Fuller, J. (Eds), *Severe mental retardation: from theory to practice*. Reston: Division on Mental Retardation of the Council for Exceptional Children, 185–207.
- Giangreco, M.F., Edelman, S.W., MacFarland, S.Z. & Luiselli, T.E. 1997. Attitudes about educational and related service provision for students with deaf-blindness and severe and/or multiple disabilities. *Exceptional Children*, 63: 320–342.
- Integrated National Disability Strategy (INDS). *White Paper*. 2004. Office of the President. s.a. Available at: <http://www.independentliving.org/docs3/sa1997wp.pdf> (Accessed 10 January 2004).
- Iwakuma, M. & Nussbaum, J.F. 2000. Intercultural views of people with disabilities in Asia and Africa. In Braithwaite, D.O. & Thompson, T.L. (Eds), *Handbook of communication and people with disabilities: research and application*. Mahwah, NJ: Lawrence Erlbaum, 239–255.
- Johnson, D.W., Johnson, R.T. & Holubec, E.J. 1993. *Circles of learning: cooperation in the classroom*, 4th ed. Edina, MI: Interactive Book Company.
- Kaplan, H.I. & Sadock, B.J. 1982. *Modern synopsis of comprehensive textbook of psychiatry III*. Baltimore: Williams & Wilkins.
- King, L.J. 1978. Toward a science of adaptive responses – 1978 Eleanor Clarke Slagle lecture. *American Journal of Occupational Therapy*, 32(7): 429–437.
- Kleinert, H.L., Kearns, J.F. & Kennedy, S. 1997. Accountability for all students: Kentucky's alternate portfolio assessment for students with moderate and severe cognitive disabilities. *Journal of the Association for Persons with Severe Handicaps*, 22: 88–101.
- Kovalik, S. & Olsen, K.D. 1992. *Integrated thematic instruction: the model*. Village of Oak Creek, AZ: Susan Kovalik & Associates.
- Linder, T.W. 1993. *Transdisciplinary play-based assessment: a functional approach to working with young children*, revised ed. Baltimore: Paul H. Brookes.
- Massey, N.G. & Wheeler, J.J. 2000. Acquisition and generalization of activity schedules and their effects on task engagement in a young child with autism in an inclusive preschool classroom. *Education and Training in Mental Retardation and Developmental Disabilities*, 35: 326–335.
- Mastropieri, A. & Scruggs, T.E. 2004. *The inclusive classroom: strategies for effective instruction*, 2nd ed. Columbus: Pearson Merrill Prentice Hall.
- Meyer, L.H., Peck, C.A. & Brown, L. (Eds). 1991. *Critical issues in the lives of people with severe disabilities*. Baltimore: Paul H. Brookes.
- Moss, C.S.K. s.a. *Charge syndrome: a booklet for families*. Available at: <http://www.deafblind.com/cskmoss.html> (Accessed 28 August 2004).
- Mulligan-Ault, M., Guess, D., Struth, L. & Thompson, B. 1988. The implementation of health-related procedures in classrooms for students with severe multiple handicaps. *Journal of the Association for Persons with Severe Handicaps*, 13(2): 100–109.
- Murdoch, H. 1997. Multi-sensory impairment. In Mason, H. & McCall, S. (Eds), *Visual impairment – access to education for children and young people*. London: Fulton.
- Musselwhite, C.R. 1986. *Adaptive play for special needs children: strategies to enhance communication and learning*. Austin, TX: Pro-Ed.
- National Head Injury Foundation. 1985. *Questions about traumatic head injury* (brochure). Southboro, MA: National Head Injury Foundation.
- Orelove, F.P. & Sobsey, D. 1996. *Educating children with severe and/or multiple disabilities: a transdisciplinary approach*, 3rd ed. Baltimore: Paul H. Brookes.
- Potterton, J.L. & Eales, C.J. 2001. Prevalence of developmental delay in infants who are HIV positive. *South African Journal of Physiotherapy*, 57(3): 11–15.
- Pretorius, C. 1997. Occupational therapy in the management of the mentally handicapped child. In Crouch, R. & Alers, V. (Eds), *Occupational therapy in psychiatry and mental health*. Johannesburg: Maskew Miller Longman, 203–223.
- Sacks, S.Z. & Silberman, R.K. 1998. *Educating students who have visual impairments with other disabilities*. Baltimore, MA: Paul H. Brookes.
- Sikorski, M.F., Niemiec, R.P. & Walberg, H.J. 1996. A classroom checkup: best teaching practices in special education. *Teaching Exceptional Children*, 29(1): 27–29.
- Slajmer-Japeli, M. 1995. Issues in developing a new model for nursing education. In Modly, D.M., Fitzpatrick, J.J., Poletti, P. & Sanotti, R. (Eds), *Advancing nursing education world-wide*, New York: Springer-Verlag, 105–107.
- Sobsey, D. & Wolf-Schein, E.G. 1991. Sensory impairments. In Orelove, F.P. & Sobsey, D. (Eds), *Educating children with severe disabilities: a transdisciplinary approach*, 2nd ed. Baltimore: Paul H. Brookes, 119–154.
- Statistics South Africa. 2004. Census in brief. In *Census products (Census 2001)*. Available at: <http://www.statssa.gov.za/SpecialProjects/Census2001/Census2001.htm> (Accessed on 15 January 2004).
- Steenkamp, E. & Steenkamp, W. 1992. *The intellectually handicapped child: a manual for parents, teachers and related professionals*. Pretoria: Butterworths.
- Thomas, S.A. 1999. Historical development of community health nursing. In Hitchcock, J.E., Schubert, P.E. & Thomas, S.A. (Eds), *Community health nursing: caring in action*. New York: Delmar, 17–38.
- Thompson, B. & Guess, D. 1989. Students who experience the most profound disabilities: teacher's perspective. In Brown, F. & Lehr, D.H. (Eds), *Persons with profound disabilities: issues and practice*, Baltimore: Paul H. Brookes, 3–41.
- Uys, C.J.E. 2003. *Validation of a play package to facilitate the development of communication-related skills*. Unpublished doctoral thesis. Pretoria: University of Pretoria.
- Westling, D.L. & Fox, L. 2000. *Teaching students with severe disabilities*, 2nd ed. Columbus: Prentice Hall.
- Wolery, M., Ault, M.J. & Doyle, P.M. 1992. *Teaching students with moderate to severe disabilities: use of response prompting strategies*. New York: Longman.

World Health Organization (WHO). 1999. Assessment, classification and epidemiology group. ICDH-2. *International Classification of Functioning and Disability, Beta-2 draft. Full version*. Geneva: WHO, 5–163.

World Health Organization (WHO). 2003. *International Classification of Functioning, Disability and Health (ICF)*. s.a. Accessed 5 April 2003. <http://www.who.int/icidh/index.html>



Section

G

**Addressing
health
problems**

CHRONIC DISEASES

MARLIZE KUNNEKE & JOAN ORR

Learning outcomes

After reading this chapter you should be able to

- ▶ understand how various chronic conditions affect the daily lives of learners
- ▶ describe the impact of chronic illness on the child, related to the child's level of development
- ▶ identify learners in your class who show signs and symptoms of common chronic diseases
- ▶ understand how to support learners with chronic diseases in a classroom situation.

Key terms

chronic disease ♦ illness ♦ disease ♦ learners ♦ infections ♦ human immunodeficiency virus (HIV) ♦ acquired immune deficiency syndrome (Aids) ♦ tuberculosis ♦ malaria ♦ bilharzia ♦ diabetes ♦ hypoglycaemia ♦ hyperglycaemia ♦ asthma ♦ hypothyroidism ♦ hyperthyroidism ♦ gastrointestinal disorders ♦ kidney disorders ♦ nutritional disorders ♦ childhood cancers ♦ common heart disorders ♦ blood disorders ♦ eating disorders

19.1 INTRODUCTION

Since the 1940s, adult and child mortality rates have decreased in most countries due to improvements in community hygiene and advances in biomedical science and technology. This, together with the introduction of immunisation and antibiotics, has brought under control some of the major infectious diseases which had afflicted children and adults in earlier times. More recently, in the early 1980s, a devastating new infection – caused by the human immunodeficiency virus

(HIV) and resulting in a protracted period of chronic illness – emerged as one of the greatest viral health disasters known to mankind (Janse van Rensburg 2000: 267).

Chronic diseases are not easy to eradicate and many of these are still major health problems today. Improvements in health care and medical science have increased the life expectancy of children with life-threatening and/or serious diseases and so have also contributed to the increase in chronic health conditions. Better care of premature babies and the resuscitation of children in near-drowning or life-threatening events now mean that many children who would have previously died will survive, although often with adverse long-term developmental and learning consequences.

While the vast majority of children periodically suffer from acute illnesses which usually do not result in any long-lasting problems, there are some learners whose daily lives are affected by chronic health conditions and who may require special attention by school personnel. Health and

disease are often conceptualised as occurring on a continuum from physical, social and emotional well-being to severe and life-threatening disease. This means that when we talk of striving for optimal health or wellness, we refer to maximising the potential of the individual learner who, despite any pre-existing problems, is able to function optimally and effectively within the environment, according to his own ability, while experiencing a sense of well-being (Kibel & Wagstaff 1995: 4). Learners with chronic diseases are people first, and only then are they individuals who happen to have special health needs which may constitute barriers to learning.

CASE STUDY

David, a Grade 5 learner, had become tired and lethargic when playing outside. He was dropped from the soccer team because the coach claimed that he was not fit. One teacher, however, asked his parents to take him for a medical examination because his schoolwork had also deteriorated. He was then diagnosed with tuberculosis (TB).

Would you regard TB as a chronic disease and if so, why?

19.2 WHAT IS CHRONIC DISEASE?

Some authors differentiate between the terms “illness” and “disease” explaining that illness is what is felt or experienced by the individual whereas disease is what a doctor diagnoses. For example, a person might feel ill without experiencing any disease or may have a disease like high blood pressure without feeling ill (Bender & Sorochan 1997: 158). Chronic disease is usually defined as any disease which interferes with daily functioning for more than three months in a year and which may be “... protracted but stable, or progressive and life threatening, or a non-fatal handicapping condition” (Kibel & Wagstaff 1995: 391). This means that chronic diseases usually have a long-term influence on the lives of affected individuals. Kapp (1994: 157–183) and Funk (1993) state that chronic diseases have the following unique characteristics:

- They require lengthy supervision by the health team.
- They are permanent, of long duration and irreversible.
- They may result in residual impairment.
- They may have multiple causes.
- They have a diversity of symptoms and manifestations.
- They can vary in their intensity and
 - have a slow but lingering course which eventually leads to unpreventable death (e.g. certain cancers, some heart problems and cystic fibrosis – the latter being a hereditary disorder affecting the air passages, pancreas, intestinal tract and sweat glands)
 - have a good prognosis, with severe and acute attacks (e.g. diabetes, porphyria or asthma)
 - go into remission with occasional flare-ups (e.g. tuberculosis)
 - alternate periods of remission with acute periods of disease (e.g. some childhood cancers such as leukaemia and lymphoma)
 - be static with severe impairment (e.g. some genetic syndromes)
 - leave the child with an impairment which may either affect mobility or be disfiguring.

19.3 FACTORS CONTRIBUTING TO CHRONIC DISEASE

There are many factors which may have a profound effect on the ability of a person to grow and develop normally. Any chronic disease present from conception onwards may have an adverse effect on growth and development and the subsequent insult to neurological or other body systems may cause difficulties with physical or cognitive development or socio-emotional adjustment. Some of the common factors which contribute to chronic disease in the child occur as a result of

- **prenatal factors** (affecting the developing foetus from conception until birth) which include infections in pregnancy, poor nutrition or disease of the pregnant mother, substance abuse during pregnancy (alcohol, smoking or illegal drugs)
- **perinatal factors** (occurring around the time of birth) such as jaundice

- **postnatal factors** (after birth) which could include conditions causing damage to the neurological system as a result of infections, poisoning, metabolic disturbances or oxygen depletion
- **environmental and developmental factors** such as overcrowded or inadequate living conditions; land, air and water pollution; lack of sanitation or clean water supplies; poor control of home and workplace environments; rapid urbanisation; poverty; unemployment; and limited access to health resources. These can all impact on the development of certain chronic health conditions such as asthma and allergies, lead poisoning, tuberculosis and malaria.

ACTIVITY

Please read Chapter 2 on poor socio-economic environment.

Find out how many learners in your environment may suffer from chronic diseases as a result of these circumstances.

Many adverse occurrences in pregnancy will have detrimental effects on the baby. One example, found frequently in the Western Cape, is foetal alcohol syndrome (FAS) which leaves children with stunted growth, decreased brain growth as well as various degrees of neurological impairment as a result of maternal alcohol abuse during pregnancy. Better management of severe infections and serious chronic diseases like HIV, childhood cancers and tuberculosis is increasing the number of children who will live for long periods. These learners will usually have a variety of cognitive or adjustment problems, either due to the disease itself or due to prolonged absence from school.

19.4 THE IMPACT OF CHRONIC DISEASE ON THE CHILD AND FAMILY, AND ON SCHOOL SUCCESS

While each chronic disease has its own symptoms, treatment and prognosis, most share common features which cause stress for children and their families. Chronic disease can develop at any stage of childhood, and the way in which the family and child respond to the illness will depend on many factors, some of which are discussed below.

19.4.1 The impact of chronic disease on the child

The factors which account for how the child experiences and responds to a chronic disease are dependent largely upon the child's age, level of language and cognitive development.

ACTIVITY

Before reading any further, jot down those factors that may have an impact on the learner who suffers from a chronic disease such as cancer or HIV/Aids.

Some of the most important of these factors are summarised below (Betz et al. 1994: 658–665; Orr 1992: 65–86):

- The child's understanding of illness is determined mainly by his cognitive maturity and can be explained in terms of Piaget's stages of cognitive development, where the child progresses from egocentric reasoning to a more abstract view. It is only when the child reaches the stage of concrete operational thought (6–12 years) that we can expect him to begin to understand the relationship between symptoms and treatment.
- Pain is a common stressor for both adults and children because of the unpleasant sensory, physical, emotional or motor responses it evokes. Likewise, most young children will consider intrusive medical procedures (e.g. taking blood samples or giving injections) as acts of hostility which threaten their self-integrity and self-esteem.
- Children who are hospitalised frequently may feel that they have no control over what is done to them. Protracted periods of hospitalisation may isolate the child from his family and peers and this could lead to serious adjustment problems when the child returns to school.
- Chronic diseases may also interfere with the achievement of some of the physical, psychosocial and intellectual tasks of infancy, childhood and adolescence. Table 19.1 gives an indication of some of the ways in which this can happen (Betz et al. 1994; Jackson & Saunders 1993: 502–507).

Table 19.1 The effect of chronic disease on developmental achievements

Stage of development	Developmental task	Effect of chronic disease
Infancy	Developing an attachment relationship (bonding) with a primary caregiver	Hospitalisation may interfere with the development of attachment relationships, and parental anxiety, grief and guilt may cause emotional withdrawal.
	Developing a sense of trust	Separation from parents and inconsistent care by many caregivers may lead to mistrust.
	Learning through sensori-motor exploration, and cause and effect	The physical restrictions imposed by the illness may reduce opportunities for learning through mouthing, manipulation and exploration activities.
Toddler	Developing autonomy and independence, and testing social limits	Medical procedures and frequent health care may inhibit the development of autonomy. Overprotective parents may prevent the child from becoming independent and may also fail to set realistic limits for acceptable behaviour.
	Acquiring language and motor skills	Illness which causes limitations in large and fine motor activity may deprive the toddler of social, physical and sensory stimulation which is necessary for optimal development.
Preschool age	Learning self-care skills	Parents may overprotect the child and regression may occur after periods of hospitalisation.
	Developing initiative	Social isolation may deprive the child of exposure to new experiences and may prevent the child from learning social skills. Where possible attendance at early childhood development (ECD) centres should be encouraged.
	Development of pre-operational thought and learning through play	The child may attribute the cause of illness to his bad behaviour. Play could be used to relieve stress and improve coping mechanisms.
Middle childhood	Using concrete operations and thinking abstractly	School, hobbies and peer interaction will help achieve these tasks. Irregular school attendance and social isolation will inhibit these achievements.
	Developing industry and initiative	Children should have some control over what happens to them by participating, under supervision, in their own care and medication administration. They need factual, honest information about their condition.
	Need to feel accepted by peer group	Illness may decrease peer interactions and make the child feel different. Chronically ill learners may not progress with their peers to the next grade and this increases their social isolation. Social interaction with peers should be facilitated through appropriate school and recreational activities.
Adolescence	Establishing independence	Compliance with medical treatment often becomes a problem, and relationships with parents and health care providers may become hostile. Health care requirements often prolong dependency upon parents. Teens with a terminal disease may lack the motivation to learn if they feel they have no adult future.
	Developing a good body image and self-image	Illness may make the teenager feel different from his peers. Visible physical defects often result in anger and grief.
	Developing formal-operational thought	Problems in previous developmental stages may lead to cognitive and emotional immaturity. In order to mature, teenagers require opportunities to interact, confront and cooperate with peers, and illness often deprives them of these opportunities.

19.4.2 *The impact of chronic disease on the family*

Chronic disease may place enormous financial, time and emotional burdens on family members, and may strain parental and sibling relationships. It is often an ongoing struggle for a family to reach a balance between normal functioning and remaining sensitive to the particular needs of a child with a chronic disease. For families to survive these stresses they need to be supported by family members, peers, the health team, support groups and other social structures like the school and church. The attitudes of parents play a critical role in ensuring school success for the child with a chronic disease. Chronic disease may impact on the family as follows:

- Certain chronic diseases may result in families becoming socially isolated because of the fear, anxiety and embarrassment caused in the social environment. For example, families with HIV-infected children may be socially ostracised because of unrealistic fears of contagion, and this discrimination and stigma is often worse than the illness itself. Likewise some families may withdraw socially because of the distress caused when taking children out who are physically disabled.
- With more serious chronic diseases families may go through a grieving process and experience chronic sorrow interspersed with feelings of anger, denial, guilt and blame. High rates of maternal depression as well as marital problems are also found in families who have chronically ill children. Support and counselling is often helpful to enable family members to cope with these stressors.
- Families may suffer from burnout due to the continual demands of a child requiring much physical care. Respite care by relatives or other caregivers can help relieve this and provide the family with some time alone. Likewise the time spent by a chronically ill child in an early childhood development (ECD) centre or at school can help families to cope better.
- Siblings might feel resentful of the extra time and money spent by parents on the care of a chronically ill child. They may also feel guilty if

they are healthy while their sibling experiences problems due to chronic ill health or terminal illness. Many siblings will benefit from counselling or sibling support groups where they can express their emotions (fear, anger or guilt) in a non-threatening environment.

19.4.3 *The impact of chronic disease on school success*

It is commonly agreed that success at school depends upon a number of factors such as reasonable school attendance, the psychological well-being of the learner, parental attitudes which value school attendance, the attitudes of teachers towards the chronically ill learner, as well as good peer group relationships.

- The teacher and parent should collaborate to minimise barriers to school attendance as the “... school provides opportunities ... [for the learner] ... to learn, socialize with peers, experience success, and develop increased independence and control over their environments” (Sexson & Dingle 2001: 31).
- Many learners with chronic diseases, despite normal intelligence and a lack of cognitive impairments, may experience academic difficulties. Factors which can detract from the learning process include fatigue (tiredness), pain, infrequent school attendance, embarrassment about physical appearance (e.g. hair loss caused by drug therapy for cancer), and discrimination and ridicule by peers.
- Certain medications used to treat chronic diseases may also directly or indirectly affect school performance. For example, certain anti-hypertensive drugs (to treat high blood pressure) may cause depression, nightmares, sedation, agitation and increased activity levels (Sexson & Dingle 2001: 40).
- Teachers are often unsure of how to deal with the chronically ill child and may be overly sympathetic or, conversely, not take into account the effect that the disease has on the learner's school experiences. Teachers may also lack expertise in how to integrate the child with a chronic disease into the classroom and to facilitate good peer relationships with healthy

learners. Good communication and team work between the family, teacher, the health team, and the school-based and district-based support teams will provide assistance to the teacher which will ultimately also benefit the chronically ill child.

19.5 SOME COMMON CHRONIC DISEASES

19.5.1 Infection with the human immunodeficiency virus (HIV)

What is HIV/Aids?

Aids (acquired immune deficiency syndrome) is caused by infection with the HI virus which increasingly destroys certain types of blood cells whose function is to protect the body against infection. Over a period of five to ten years, immunity progressively deteriorates until the person becomes immune deficient (unable to fight infections). Most HIV-infected persons do not die from the virus itself, but from infections that would not normally pose a risk to a healthy person. Aids is the final stage of HIV infection which will eventually result in death.

How do learners become infected with HIV?

- The majority of learners under the age of 13 with HIV/Aids will have been infected by the HI virus as a result of mother-to-child transmission during pregnancy, during the birth process or during breastfeeding. We refer to this as “vertical transmission of infection”. Without anti-retroviral drug therapy (ART), many of these children will die within the first two to three years of life. South Africa introduced ART into the public health system in April 2004 and this should increase the life expectancy of HIV-infected children.
- Learners may become infected through unprotected hetero- or homosexual intercourse with an infected person. This could include rape or sexual abuse.
- A less common form of infection could be through unsafe health and cultural practices which allow direct blood-to-blood or blood-to-mucous membrane contact. Examples here include the use of contaminated or unscreened blood products, the reuse of blood-contaminated syringes and needles during health proce-

dures or drug abuse, or the reusing of blood-contaminated instruments during cultural practices like circumcision or scarification.

Common health problems of the HIV-infected learner

HIV/Aids is a multi-system disorder and the HI virus affects most parts of the body. Early manifestations of infection include enlarged parotid glands (in the neck area), low grade fever, failure to gain weight, and liver and spleen enlargement. As the infection progresses, the child may experience frequent ear, chest, throat and urinary tract infections as well as mouth problems (e.g. bleeding gums, and candida or thrush infection of the mouth and oesophagus). HIV-infected persons also experience multiple problems with general health such as chronic fatigue (tiredness), wheezing and shortness of breath, tuberculosis, malnutrition, chronic diarrhoea, and skin problems. One of the virus’s most detrimental effects is on the nervous system, often causing irreversible damage despite anti-retroviral treatment. HIV infection affects myelination of the nerves (see section 12.2.1 of Chapter 12) and also damages the neurons (cells of the central nervous system), which causes a wide spectrum of problems with great variation among children. The most severe problem is HIV-encephalopathy caused by irreversible demyelination and calcification of parts of the brain (usually the basal ganglia and areas controlling movement). This results in severe cognitive impairment and spasticity (greatly increased muscle tone) leading to movement and muscle tone disorders which deteriorate over time. All HIV-infected children will have some neurological sequelae, which can progress slowly, rapidly or have plateau periods. As a result of this brain involvement, learners may present with a wide spectrum of problems affecting behaviour and intellectual function such as learning disabilities, hyperactivity, speech problems or motor problems (which could include toe-walking, in-toeing and increased tone or spasticity).

Educational implications of HIV/Aids

- Teachers must ensure that they are familiar with the educational legislation regarding HIV/Aids, which should be available in each school.

National policy on HIV/Aids for learners and educators in public schools and students and educators in Further Education and Training institutions, Notice 1926 of 1999. *Government Gazette*, 410(20372), 10 August 1999. Pretoria: Government Printer.

This document deals with HIV/Aids issues in the school pertaining to non-discrimination, testing, school attendance, disclosure of HIV/Aids-related information, confidentiality, maintenance of a safe school environment, prevention of transmission during play and sport, education about HIV/Aids, duties and responsibilities of learners, educators and parents as well as school implementation plans. Some important issues are:

- Teachers and learners should be familiar with *Universal Precautions* (7.1.1 of Notice 1926 of 1999) which relate to the handling of any blood-related injuries or blood-contaminated items occurring in the classroom, during sporting activities or on educational outings. *Universal Precautions* should be used with all learners and educators at all times as it is impossible to know who is HIV infected or who not. More information appears in the National Policy on HIV/Aids, Notice 1926 of 1999 of the National Education Policy Act 27 of 1996 (Department of Education 1999).
- Parental and learner education is required to ensure correct knowledge and attitudes about HIV/Aids are internalised by the school community. This includes making realistic information available to all about the negligible risk of infection during normal social contact in the school environment.
- One issue commonly causing unnecessary hysteria in ECD environments is the problem of toddler biting, and some ECD centres are excluding HIV-infected children under the age of three from their facilities. If one carefully considers the issue, it is only when an uninfected child bites a HIV-infected child and there is an exchange of infected with uninfected blood that a possible risk of HIV exposure might occur. This unlikely possibility could occur as follows: the uninfected child would have to bite the HIV-infected child so seriously that the skin is broken, and blood from the infected child enters the uninfected child's mouth. There would then have to be a blood-to-blood or blood-to-mucous membrane exchange. If a HIV-infected child bit an uninfected child, the following would have to occur: the infected child would have to have fresh blood in his mouth and break the skin of the uninfected child, mixing the infected blood directly with the uninfected blood – a most unlikely situation (Black 1999: 39–45). ECD practitioners should nevertheless be very vigilant when any biting injury occurs in which the skin of any child is broken and blood is present in the biter's mouth (an extremely rare occurrence) as the HIV status of most children is not normally known. This information should be immediately documented in writing and reported to the principal and parents who should get expert medical advice (within 12 hours) regarding the need for post-exposure prophylaxis.
- The implications of HIV infection for learning can be quite diverse and may also vary over time in the same child. Certain children may be developmentally delayed from birth and present with language problems and a low IQ. Others would start to develop normally and then their development would plateau off in school with subtle language, behavioural or learning disabilities. Many HIV-infected children suffer from attention deficit disorders with the spectrum of low tone, posturing and learning problems accompanying the syndrome.
- Frequent infections and malnutrition may lead to a chronically fatigued child who is unable to concentrate and learn. Supplementary nutrition as well as extra rest periods may need to be provided during the school day.
- The teacher should make allowances for a HIV-infected child who needs to take anti-retroviral medication during the school day, while maintaining confidentiality. It is important that this medication is taken on time and that any food-related instructions are followed carefully (some medications need to be taken with

food). ECD and foundation phase teachers might need to take responsibility for administering medication to younger learners.

- Recent research has demonstrated that despite central nervous system (CNS) pathology in the child, certain parental factors like alcohol and drug abuse, low socio-economic status (SES), low levels of parental education and parental HIV-related illness may increase the child's vulnerability to intellectual dysfunction, while parenting education and the provision of stimulating toys can enhance the child's cognitive skills (Coscia et al. 2001: 321–329; Knight et al. 2000: 583–587). ECD practitioners should monitor the developmental progress of all children, as well as known HIV-infected children, to enable them to provide early supportive intervention for developmental delays. ECD centres could also plan and present parenting programmes within their communities to teach parents how to provide inexpensive and educationally stimulating experiences for young children and so optimise their development.
- The teacher should refer any child who requires special intervention to the appropriate professionals such as occupational therapists, speech therapists and learning support teachers. Assistance from the school-based and district-based support teams could be invaluable for the teacher of the school-age learner.

ACTIVITY

What is your view on the dissemination of information about the HIV status of a learner in your class? Do you think it is necessary for you to know who the HIV-positive learners are? Do you know that the *Promotion of Equality and Prevention of Unfair Discrimination Act* of 2000 refers in particular to unfair practices in education?

19.5.2 Tuberculosis

What is tuberculosis?

Tuberculosis (TB) is a common disease in South Africa which mainly affects the lungs, but may also involve the kidneys, heart, skeletal system, brain and meninges (brain lining). TB is a chronic

infection which may re-activate in any organ at any time. TB meningitis may cause serious neurological effects, while TB of the spine may lead to kyphosis. TB is caused by the mycobacterium tuberculosis organism which is usually found in the sputum of infected persons. The germ is spread into the air when infected people cough, sneeze or spit and then it is breathed in by others. TB occurs more frequently in poor socio-economic circumstances and spreads rapidly when people live in overcrowded areas, are malnourished, or live in close proximity to someone who has untreated TB. People with HIV infection are at high risk for contracting TB due to their poor immune status.

Common health problems of a learner with TB

The usual symptoms suggestive of TB in young children are weight loss for more than one month (seen as a decline in mass in the “road to health” card), a cough lasting more than three weeks, chronic ill health, and failure to thrive (grow normally). Some of the more prominent symptoms in older persons include a persistent cough, coughing up of blood, weight loss, night sweats, poor appetite, breathing difficulties and lack of energy.

Educational implications of TB

- Fatigue, secondary to chronic ill health, as well as coughing at night might result in an inability to concentrate and learn.
- TB meningitis usually has severe long-term effects varying from mild learning disabilities to severe retardation. These learners will need special educational services.
- Before young children are admitted to ECD centres, educators should check that their BCG immunisation was done (this is usually done soon after birth).
- ECD practitioners should encourage parents to take their children regularly to health clinics to be immunised, to monitor growth and to treat any health problems at an early stage.
- All learners should be educated about the importance of good hygiene practices such as the proper disposal of tissues and not spitting.
- Learners from impoverished socio-economic environments should receive referral to the

necessary sources for supplementary nutrition or be encouraged to start food gardens.

ACTIVITY

The principal of a school in a disadvantaged community allows a group of unemployed parents to start a vegetable garden on the school premises. The mothers prepare food for learners to enjoy during break while the remaining vegetables are taken home or sold to generate income. Can you give any examples of what is happening in your community to supplement nutrition for needy learners?

19.5.3 Malaria

What is malaria?

Malaria is a notifiable disease which is endemic in some north-eastern areas of South Africa. It is caused by the malaria parasite (*Plasmodium falciparum*, *Plasmodium vivax* or *Plasmodium ovale*), which is transmitted to humans by the bite of an infected female anopheles mosquito. Symptoms of malaria include fever, chills, sweating, severe headaches, convulsions, jaundice, loss of appetite, nausea and vomiting. These symptoms often occur in one- to three-day cycles. Cerebral malaria can cause acute neurological damage resulting in long-term intellectual impairment of various degrees.

Educational implications of malaria

Cerebral malaria can cause acute neurological damage with long-term cognitive effects, depending on how early treatment was initiated. Educators should provide specific education about how to decrease the risk of malaria especially if going on excursions or school tours to a malarial area. The most important preventative measures include

- taking preventative drugs when visiting a malarial area
- avoiding tours or excursions to malarial areas during the rainy season
- using window and door screens in malarial areas (also at schools) to prevent mosquitoes from coming indoors

- using insect-repellent creams on exposed skin, and covering exposed skin with light clothing
- avoiding going outdoors at dusk when mosquitoes are most prevalent
- using insecticide-treated mosquito nets when sleeping
- getting immediate medical attention if any flu-like symptoms develop after a visit to a malarial area.

19.5.4 Bilharzia

What is bilharzia?

Bilharzia (*schistosomiasis*) is a disease caused by a parasitic fluke (trematode worm) which completes its life cycle both in a human host as well as in freshwater snails. Bilharzia infects a large percentage of school children in some north-eastern regions of South Africa e.g. KwaZulu-Natal and Limpopo province (Kibel & Wagstaff 1995: 268).

How do learners become infected with bilharzia?

Ova (or eggs) of the parasite contaminate rivers and dams when humans urinate or defecate in or near surface water sources. Larvae hatch from these ova and enter freshwater snails where they develop further. Small larvae, called *cercariae*, are released by the snails and penetrate the skin of persons who wade, swim or wash in infected water. Once inside the body, the flukes lay eggs in the bladder and intestines and the whole process is repeated if the ova re-enter the water supply during urination or defecation.

Common health problems caused by bilharzia

Manifestations of bilharzia infestation are fever, local skin irritation, enlarged glands, blood in the urine, a swollen abdomen and chronic diarrhoea. In many cases the liver, spleen and brain are also affected.

Educational implications of bilharzia infection

- Teachers should ensure that there is an uncontaminated water supply and proper toilet facilities for school use.
- Adults and children should avoid wading or swimming in contaminated water when on outings or school tours.

- Learners should be educated about proper sanitation practices and informed about the danger of urinating or defecating near water sources, as this can cause a number of serious diseases.

19.5.5 Other infections

Infections by a variety of pathogens (viruses, bacteria or parasites) during pregnancy or after birth can cause long-lasting ill health, physical or learning impairments, and/or a slow death.

- Some **viruses** causing this type of damage are HIV, rubella, cytomegalovirus, herpes, polio, Epstein-Barr virus, varicella, and hepatitis B and C.
- **Bacteria** which cause neurological and developmental sequelae are *haemophilus influenzae* and streptococcal infections. *Haemophilus influenzae* can cause severe upper respiratory infections as well as meningitis. The introduction of immunisation with the Hib vaccine is reducing the incidence of this infection among young children. Acute streptococcal infections can leave an individual with severe sensory or intellectual impairments or cause chronic kidney or heart problems.
- A serious **parasitic infection** is caused by the *echinococcus* (a type of tapeworm) which is found in dogs. When tapeworm eggs are swallowed by adults or children, larvae develop which enter the walls of the intestines and migrate to the brain, liver and lungs. Large cysts may develop in the brain which slowly enlarge and cause brain oedema (swelling) which may result in epileptic seizures and hydrocephalus. Teachers need to educate children, from ECD level onwards, about the importance of washing their hands after handling pets.

19.5.6 Diabetes mellitus

What is diabetes?

This disease is caused by a malfunction of the insulin-producing cells in the pancreas. The hormone insulin is required for the uptake of glucose into the body cells. When too little insulin is produced, glucose builds up in the bloodstream,

causing hyperglycaemia (or high blood sugar) and spills over into the urine. When the body cannot utilise or store glucose due to the absence of insulin, it uses fat and proteins as an energy source. Manifestations which might indicate that a learner has developed diabetes are rapid weight loss despite increased hunger, more frequent urination and increased thirst, tiredness and weakness, nausea, vomiting or dehydration, dry and itchy skin, recurrent infections such as boils and deteriorating visual acuity.

It is difficult to effectively control diabetes in children (Type 1 diabetes) because of variations in their activity levels and problems with regulating their food intake. To control diabetes, the blood sugar should be kept within normal limits and this is assessed every day using urine or blood tests. Proper control of diabetes is essential to prevent complications affecting the eyes, kidneys, nerves and blood vessels. Creating a balance between food intake, insulin administration and exercise levels will achieve control. Food intake increases blood sugar levels while exercise and insulin decrease it. Thus insufficient food and excessive exercise, or insufficient food and excessive insulin can cause blood sugar levels to drop. Likewise, too much food and insufficient insulin will lead to a rise in blood sugar levels. When blood sugar levels are too high (hyperglycaemia), a diabetic coma can develop as a result of the build-up of ketones in the blood which are a by-product of fat metabolism. When blood sugar levels are too low (hypoglycaemia), the child will also become comatose but with severe and ongoing damage to brain cells resulting in convulsions and death if not treated early. Table 19.2 summarises what the teacher should know about these two complications of diabetes (Marotz et al. 2001: 232).

Educational implications of diabetes

- The teacher should liaise with the parents and child regarding a suitable routine at school to maintain a balance between the amount and timing of meals, insulin and exercise. Discuss suitable foods to carry in case of a low blood sugar level with parents and the learner. It is recommended that these foods are kept in the classroom and are easy to open so that the whole class is not disrupted.

Table 19.2 Complications of high and low blood sugar

Hyperglycaemia (high blood sugar levels), also called ketoacidotic coma	Hypoglycaemia (low blood sugar levels), also called insulin shock or insulin reaction
Caused by too little insulin, a missed dose of insulin, too much food, anorexia, illness or stress	Caused by too much insulin, too little food or a missed meal, unexpected strenuous exercise or underlying illness
Manifestations of high blood sugar • develops slowly • slow and deep breathing • dry and flushed skin • increased thirst • increased urination (also at night) • blurred vision • confusion and drowsiness • fruity, sweet-smelling breath • nausea and vomiting • abdominal pain • coma	Manifestations of low blood sugar • develops suddenly • pale, cool and clammy skin • extreme hunger • headache, dizziness and blurred vision • shakiness, tiredness, lack of concentration and coordination • restlessness and sudden behaviour change – may give strange answers to questions and speech may be slurred • confusion and aggression • rapid and shallow breathing • convulsions • unconsciousness
What to do • Contact parents. • Get medical help quickly as the child will need to have insulin. • Be aware that it may take the learner a few days to recover and get blood sugar levels under control.	What to do • If conscious, give learner some concentrated glucose like a glucose sweet or a sugary drink. Call parents. • If learner is unconscious, watch breathing and rush the child to hospital or call an ambulance. Contact parents. • The learner should recover within minutes.

- The teacher should be able to recognise the early manifestations of and provide emergency treatment for hyperglycaemia and hypoglycaemia. Attention problems or aggression just before meals or during periods of increased exercise could indicate low blood sugar levels.
- Learners may need to be reminded to have their regular snacks if they are very involved in an activity or if they are becoming confused due to low blood sugar levels.
- Consider the child's dietary limitations and arrange for suitable alternatives when planning food-related activities or celebrations in the classroom.
- When going on overnight school tours, the teacher should find out when and how the learner's insulin injections need to be given and blood sugar levels monitored. Some provision will also need to be made regarding the storage of insulin as it has to be kept cold. For the younger learner the teacher might offer to learn how to give the child his insulin injections so that he can accompany the class on the trip.
- Allow the child to have a snack if regular meal-times are delayed. The teacher should always have a quick energy snack available during gym

periods, on the sports field or when going on an excursion or tour. If learners must stay after school for any reason, they must have extra food with them.

- Implement the "buddy" system when the diabetic learner swims or is on a group outing so that he is never alone in a situation where low blood sugar may result. It is advisable for a learner with diabetes to wear a Medic-Alert bracelet or neck chain so that if he is found unconscious then suitable treatment can be given.
- Provide careful treatment of any injuries, as persons with diabetes often have problems with the healing of wounds.

ACTIVITY

You are the teacher of a Grade 5 class and are planning a three-day school tour to the Kruger National Park during the month of March. You are aware that one of the learners in your class has diabetes and at least one of the other learners in the class is HIV infected. What particular planning will you do for this trip to make it possible for everyone to attend?

19.5.7 Asthma

What is asthma?

Asthma is a chronic disease characterised by hyperactivity of the airways causing reversible airway obstruction.

Asthma causes a constriction and narrowing of the muscles of the air passages (bronchi and bronchioles) in the lungs which become swollen and clogged by mucous, causing breathing difficulties. It is a serious condition which can cause many lost school days and result in much suffering and even death. Up to 60 children die annually in the UK following an acute asthma attack. Most asthmatics have chronic bronchial irritation and a variety of trigger factors can cause periodic acute asthmatic attacks. Some common ones are

- allergenic foods such as nuts, milk, wheat, citrus, preservatives or colourants
- airborne allergens such as mould spores, dust, animal dander, perfumes, strong-smelling chemicals, or pollen from grasses, trees or flowers
- sudden changes in the weather such as cold or wind
- second-hand smoke from cigarettes, pipes or cigars
- chest infections like colds and bronchitis
- excessive or vigorous exercise.

Manifestations of asthma are wheezing, coughing and difficulty in breathing (especially expiration or breathing out). Breathing problems at night often result in disturbed sleep, and distressed and tired learners will find it difficult to concentrate on schoolwork. Some children appear to outgrow their asthma during the middle childhood years, while others require daily medication for life to prevent asthmatic attacks. These learners need to be diligent about taking their asthma therapy for life and maintaining a healthy balance with appropriate, but not excessive, exercise. It is often a problem taking the metered dose inhalers regularly, especially at school as the spacer device used with young children is large and difficult to carry around. During the teenage years problems with treatment compliance often occur and there is a high incidence of death in asthmatic teenagers (Kibel & Wagstaff 1995: 232).

Educational implications of asthma

- Wherever possible, the teacher should minimise the presence of known triggers in the school environment. The classroom should be kept clear of unnecessary airborne pollutants such as chalk dust, mould spores (found in dried flowers and soft toys) and animal dander. ECD and foundation phase classrooms with carpets should be vacuumed daily. Curtains, cushions and soft toys should be washed regularly.
- The teacher should always supervise young asthmatic children during movement and sport activities, and allow for a warm-up period. Cycling, swimming and walking can improve fitness, while running for extended periods may increase the possibility of an asthma attack. Learners should be reminded to take any necessary medication before undertaking exercise.
- The teacher should find out from parents how to recognise the early warning signs of an asthma episode, and how to manage an asthmatic attack and provide necessary emergency treatment. This may include the following:
 - Staying calm, reassuring the child and letting him sit upright while you administer any prescribed medication (one dose only).
 - Contacting the parents and emergency services if the child does not improve, or gets worse after the medication. Immediate help is required if the learner becomes very anxious and restless, becomes blue (cyanosis) around the lips or nails, or loses consciousness.
- Side effects of medication may affect learning, and teachers should find out what these are (e.g. medication used to dilate the air passages (bronchodilators) may cause tremors, rapid heart beat and agitation).
- The teacher should provide the learner with quiet learning activities while he is recovering after an acute asthma attack. At other times the learner should be treated normally and not be allowed to use this condition as a means of manipulation.

19.5.8 Hypothyroidism and hyperthyroidism

The thyroid gland produces a hormone which

controls the basal metabolic rate of the body. Hypothyroidism (a low level of thyroid hormone) is usually congenital and if it is not diagnosed soon after birth may lead to growth retardation and severe and non-reversible neurological impairment. This condition will require long-term medication.

Hyperthyroidism (excessive levels of thyroid hormone) causes severe hyperactivity, tachycardia (rapid heart beat) and irritability, and the child can appear sweaty and anxious and have difficulty concentrating. This condition requires medical treatment which may include surgery or radiation treatment.

19.5.9 Common gastrointestinal disorders

Chronic inflammation of the bowel causes diseases such as Crohn's disease and ulcerative colitis. These are seen most often in older boys and cause acute attacks of severe abdominal pain and anorexia (poor appetite) that can result in lengthy absences from school. These conditions are often exacerbated by stress and require dietary treatment. Preadolescents and adolescents often become angry and frustrated when they are unable to participate in their normal activities during an acute stage of the disease. The teacher must be sensitive to the needs of the learner which might include frequent visits to the toilet and dietary considerations.

Other chronic gastrointestinal problems include malabsorption disorders as a result of pancreatic insufficiency (cystic fibrosis); liver pathology (bile duct atresia, hepatitis); anatomical abnormalities of the bowel (resection post obstruction, infection, volvulus, intussusception); mucosal problems, e.g. celiac disease (gluten intolerance); and disaccharidase deficiencies, all with an extremely chronic course and needing follow-up investigations and treatment, as well as lifelong dietary manipulation. The teacher must take this into consideration when planning learning activities related to food.

Liver diseases caused by infections, congenital structural defects, tumours or toxin-induced damage need specific mention as they are usually associated with severe discomfort and a long-term chronic-to-fatal course, and often result in

disfiguration, jaundice and severe malabsorption as well as vitamin deficiencies due to the inability to absorb fat-soluble vitamins. Learners with liver disease are often very tired and may require extra rest or a shortened school day. Teachers should be aware of dietary limitations imposed by liver problems. Teachers should also include education related to good personal hygiene habits like hand-washing, universal precautions with regard to the handling of body fluids, and drug abuse prevention. Young children with liver failure may be at risk for delays in intellectual and motor development (Kline et al. 2001: 39).

19.5.10 Kidney (renal) disorders

Renal pathology is seen less often than disorders of other body systems. Individuals with chronic nephritis (kidney disease) may develop renal failure and need regular kidney dialysis. Children present with oedema (swelling), hypertension (high blood pressure) and/or the loss of vast amounts of protein or blood in the urine. Hypertensive encephalopathy (affecting the brain) is always a risk, and fluid intake and blood pressure should be managed properly. In the event of renal failure, the outcome is not good and children would need renal transplantation to survive. Steroid use leads to changes in appearance, with puffiness of the face, a prominent neck and abdomen, thinning of the legs and arms, and often stretch marks and purple discolouration of certain areas of the skin. Teachers should ensure that classmates understand these physical changes and do not ridicule the affected learner. Research has suggested that learners with kidney failure frequently have impairments in language and mathematical skills and that after successful renal transplant, cognitive functioning may improve (Kline et al. 2001: 39). Absenteeism due to dialysis or surgery may interrupt the learner's academic progress.

19.5.11 Common nutritional disorders

Nutritional disorders usually occur due to deficiencies of certain nutrients in the diet, an unbalanced diet or a diet deficient in kilojoules (calories). Different presentations are seen, from stunting and wasting to water retention and severe oedema. Skin lesions can look a lot like burns, or

the skin can be dry and scaly resembling pellagra. The heart muscle is affected and severe malnutrition can often lead to death. Intelligence is affected but this seems to be reversible; however, long-term starving or repeated malnutrition can lead to permanent brain damage. Children who are malnourished often live in poor socio-economic circumstances with little developmental stimulation and nurturing. The teacher has an important role to play in identifying learners who require enrolment in feeding programmes. Learning activities will be affected as hungry children can be very fidgety, apathetic and listless, and may also have concentration problems.

Vitamin deficiencies are commonly associated with malnutrition and the following are common:

- Vitamin D deficiency is common in Africa in the first year of life and leads to rickets, with bowing of the legs in older children, softening of the skull bones, broadening of the wrists and thickening of certain parts of the ribcage in smaller children.
- Night blindness is the classical feature of vitamin A deficiency in adults and older learners, while varying degrees of damage to the cornea is seen in younger children and infants. The affected corneal damage can be reversible in the early stages but irreversible corneal ulceration and blindness will occur in later stages.
- Deficiencies of the B complex vitamins are common, with nicotinic acid deficiency presenting with pellagra, riboflavin deficiency presenting with skin lesions and pyridoxine deficiency presenting with convulsions. Treatment is with B complex preparations and is mostly reversible.
- Vitamin C deficiency usually presents in infancy between 4–10 months of age and may thus not be a problem in the school population.

Anorexia nervosa and bulimia nervosa are eating disorders associated with adolescents (and even younger children) of all types of background and ethnic groups.

Although anorexia nervosa begins as a diet with restricted kilojoule intake, it ends up as a psychological disturbance. These learners are usually very determined and motivated when taking on a challenge such as losing weight. They can no longer keep up with their other positive achievements because of a lack of nutritional food, dizziness and poor concentration (Krüger & Groenewald. 2004: 24; Mental Health Information Centre 2004: 1–2). Learners with anorexia usually have a low self-esteem and they may feel that the only control they have over their lives is their weight and the amount of food they eat. They often do not recognise that they are underweight. They may even enjoy exercising control over the hunger pains until they subside. They usually resist any attempt of help because to them, help is synonymous with being forced to eat.

Bulimia, on the other hand, is characterised by periods of starving followed by periods of overeating and then vomiting. Laxatives and diuretics are also used in excess to get rid of the amount of food that is consumed.

Signs of anorexia nervosa and bulimia are

- excessive weight loss
- excessive exercise (especially those who suffer from anorexia nervosa)
- wearing clothes that are too large to cover up weight loss
- frequent excuses for not attending meals (“I will eat later; I am not hungry now”)
- dry hair and skin
- complaining of severe stomach-ache (bulimia)
- tooth decay (because of vomiting)

Mary, a 15-year-old girl, has gradually become very moody and is never satisfied with her performance. Her friends say that she visited the gym every day until a month previously. You notice that she is wearing loose clothes and has lost weight. When you speak to her parents about her weight loss, the mother replies that Mary is never hungry. When she is called for supper, her reply is that she is not hungry and that she will eat later. They are worried about her general health. What warning signs of an eating disorder can you find in this case study?

- complaining of being too fat, although they are excessively thin
- obsession with food, kilojoules and recipes
- depression, mood swings, etc.
- secretiveness about eating patterns, etc.

ACTIVITY

Can you think of more signs that you should be aware of that may result in anorexia nervosa and bulimia?

Teachers should be aware of the signs of anorexia nervosa and bulimia nervosa. Parents or guardians should be informed about any signs that may be indicative of eating disorders. Medical as well as psychiatric support is necessary. Teachers cannot do much except observe and accept the learner. It helps to recognise that those suffering from anorexia and bulimia are engaged in a battle and can be helped in the following ways (Krüger & Groenewald, 2004: 26):

- Avoid topics concerning food as well as balanced diets. They will not listen.
- Act absolutely normally towards that person.
- Do not join in gossip groups – there are many other reasons why people might lose a lot of weight.
- Try to understand their depression, inner emptiness, poor self-image, anxiety and fears.
- Appreciate their special qualities and strong points and build on them to enhance their self-esteem.

19.5.12 Common childhood cancers

Childhood cancers, such as leukaemia (cancer of the blood-forming tissues), lymphomas (tumours of the lymph glands and lymph nodes), retinoblastoma (tumour arising from retina of the eye), neuroblastoma (tumour of the sympathetic nervous system), rhabdomyosarcoma (malignancy of striated muscle cells) and osteosarcoma (tumour of the bone), are usually not cured, but go into remission and require vigorous treatment which will have the child in hospital for lengthy periods, often months at a time. The treatment is often as disfiguring and painful to the child as the disease

itself, with long courses of chemotherapy, radical surgery and irradiation. Irradiation has a direct effect on the central nervous system, resulting in behavioural, concentration and memory problems. The child will often lose his hair as a result of treatment and will have an increased susceptibility to infection. Exhaustion is common. The teacher can play an important role in reducing the child's social isolation and helping the reintegration of the learner into the class by maintaining contact with the individual when he is absent from school through visits, letters or manageable school projects. If a child with cancer dies, the teacher may need to support parents and other learners through their grieving process.

19.5.13 Common heart disorders

Cardiac pathology (heart problems) covers a wide spectrum of diseases such as acute rheumatic fever resulting in chronic heart valve lesions, congenital cyanotic defects (allowing unoxygenated blood to circulate through the body, causing a decrease in oxygen in the tissues) and acyanotic lesions (causing impairment of blood flow within the heart or great blood vessels), as well as heart muscle disorders (e.g. cardiomyopathies). Most heart problems result in exercise intolerance, tiredness, cyanosis (blue discolouration of lips and nail beds), strict adherence to medication and/or heart surgery with long periods of hospitalisation, and sometimes an insidious course leading to death. Abnormalities with the heart's rhythm (conduction disorders) can be treated with a pacemaker, which will prevent the child from doing any contact sport. Rhythm disturbances are sometimes associated with deafness. Often heart problems are part of a syndrome and associated with renal (kidney), vertebral and gastrointestinal pathology, leading to many surgical procedures over many years.

The teacher needs to be aware of any restrictions with regard to physical activities as well as the need for any medication which must be taken during the school day. Children who have heart surgery will be absent from school for extended periods and the teacher needs to maintain contact with the child and provide appropriate learning activities if the child's condition permits.

19.5.14 Blood disorders

Haematological (blood) abnormalities cover a wide spectrum of diseases which include iron-deficiency anaemia as a result of malnutrition, severe and chronic deficiency of platelets (idiopathic thrombocytopenia), deficiency of clotting factors (haemophilia), and bone marrow suppression (aplastic anaemia), to mention a few. All these abnormalities lead to either an increased risk of infection, chronic fatigue or a high tendency to bleed. According to Kline et al. (2001: 37), learners with blood disorders have a high risk of educational, psychosocial and behavioural problems. These authors recommend careful educational assessment for the early identification of academic difficulties. The teacher will often be the first person to notice that a learner is lethargic, pale and unusually tired, and should consult with the parents if these symptoms persist for any length of time without a reasonable explanation.

19.6 LEARNING SUPPORT TO LEARNERS WITH CHRONIC DISEASES

- The teacher should be able to assess the academic performance of the child with a chronic illness and then develop, in collaboration with parents, an educational plan to foster success at school while promoting all aspects of the child's development. This should include identifying strengths of the learner and building on them while giving positive feedback for effort and success. Learner assessment should be ongoing so that adaptations can be made to learning activities to meet any changing educational needs of the child as a result of declining health (e.g. a chronically tired learner or one whose fine motor hand skills are deteriorating may require extra time to complete assignments or tests). Both the school-based and the district-based support teams can be approached to give advice with regard to learner assessment and educational support, and the teacher should also consult the *Curriculum 2005 assessment guidelines for inclusion* (Department of Education 2002).
- Frieman and Settel (1994: 199) remind us that the learner with a chronic disease should not

be "... defined by his disease". The same standards of behaviour should be expected from all learners, and the teacher should consistently implement classroom and school rules for all learners. Some teachers may question why learners with life-threatening diseases should spend any effort on schoolwork if the child has no long-term future. Research with terminally ill children has shown that, wherever possible, even chronically ill persons want to live normal lives and that the "... removal of the normal challenges, disciplines and expectations of school life can be worrying; similarly, unlimited treats and uncritical acceptance of misbehaviour can cause anxiety" (Jeffrey 1990: 135).

- Teachers should be able to recognise the most usual manifestations of common chronic diseases which might affect learners in their class and refer these individuals, via their parents or guardians, to appropriate health and/or support services. Classroom teachers are in a good position to observe all learners every day and they should be able to notice changes in the behaviour, health (such as losing weight) and academic performance of individual learners in the classroom.
- Should teachers be aware of any learners with a chronic disease in their classes, they have a responsibility to obtain current information from the learners' parents or health care provider (only with parental permission) about the disease and how to manage it in the classroom situation. The teacher should cultivate a good relationship with the parents or guardians of a learner, as in many cases parents become experts in the day-to-day management of the particular chronic illness. The teacher will need information about any medication, diet or exercise requirements during the school day. Regular contact should be maintained with parents, who should be requested to communicate any important information about the learner to the school which might affect the child's learning experiences and/or time at school. This should include information related to medical appointments, changes in medication, special adjustments required to the school environment or school programme, and deterioration in physical health.

- The teacher should keep updated telephone numbers of the learner's parents or guardian as well as emergency medical contacts in an accessible place for use in an emergency. Details like medical aid name and number, and/or hospital or clinic number are important to have at school if the learner has to be taken by school personnel in an emergency to hospital. Likewise, written parental consent for emergency medical treatment should be available on the learner's file.
- The teacher should check with parents whether any particular precautions are required for excursions or any other unusual school or sporting events. Everything possible should be done to include learners with chronic diseases in these aspects of school life.
- The teacher should be prepared to cope with any health emergencies related to a specific chronic disease (e.g. hypoglycaemia or an asthmatic attack). This might include providing initial emergency care, or contacting emergency health services and parents.
- Teachers should try unobtrusively to integrate some of the less-involved medical treatments into the everyday classroom routine (e.g. the administering of medication) without unduly disrupting the classroom activities or embarrassing the affected learner. The learner may require privacy at certain times of the day for the administration of chronic medication like insulin injections or asthma medication using a spacer device.
- The teacher should keep written and dated records of all medication administered during school hours by staff and immediately report any unusual side effects to the parents. It is important to ask parents to provide a doctor's prescription for any medication which must be given to the learner during school hours. This should clearly list the name of the learner, the name of the medication, the time the medication should be given, the amount to be given (dose) and how it should be given. Some thought should be given to where and under what conditions medication will be stored so that it does not lose its potency and so that it is not accessible to younger learners (e.g. insulin and antibiotics need to be stored in a refrigerator).
- The family (parents and siblings) may need extra support to cope with the emotional and psychosocial demands of a chronically ill child, and the teacher can encourage all family members to join support groups to help them share their feelings and learn from others who are experiencing similar situations.
- Teachers might also be asked by doctors to provide feedback on the effectiveness of medications used to improve behaviour, concentration or learning. Information about a learner may only be obtained from, or supplied to, health or other professionals, with the permission of the parent or legal guardian. Any information obtained about the health status of a particular learner should be confidential and shared only within the school on a "need-to-know" basis with the written permission of the parents or legal guardian. Although this is particularly relevant to chronic diseases like HIV/Aids, it also applies to any other health impairment.
- The teacher should find out from the parents what the child knows and understands about his chronic disease. It is not the role of the teacher to disclose any personal health information to a chronically ill learner unless this is done in collaboration with the family. For example, many young children who are HIV infected and not yet ill will not necessarily know their diagnosis and the teacher must ensure that this information is not inadvertently disclosed to the learner.
- The teacher should ensure that the classroom environment, where possible, makes allowances for the specific child's chronic disease. For example, pets should be removed from a classroom if a learner is allergic to animal dander. Toys and learning materials should be appropriate to the developmental level of the chronically ill child and extra uncluttered space allowed for learners in wheelchairs or with poor motor coordination. Suitable developmentally appropriate opportunities should be

available for learners to express feelings and frustrations in an acceptable way. Music, fantasy play, puppet play and sensopathic activities (water, sand and play-dough) are wonderful, legitimate ways in which to release tension and express negative emotions.

- The teacher should make allowances for deviations in the school routine, such as permitting the learner to visit the toilet more frequently if required (e.g. learners with high blood sugar levels may need to urinate more frequently, while persons on certain medications or who are HIV infected may have chronic diarrhoea). Extra rest periods or snacks might need to be provided for some chronically ill learners during the day.
- The teacher should be on the lookout for any overt or covert discrimination against or ridicule of learners with chronic diseases, and should integrate positive education messages about chronic diseases into the learning programme. It is important for classmates to become compassionate and supportive of the learner who experiences a medical emergency during the school day.
- If a learner is absent from school for a lengthy period of time, the teacher should liaise with parents about whether it is appropriate to send learning activities home. Likewise, written messages and drawings from classmates can be sent to the child to help decrease social isolation from school and the peer group. A welcome-back activity on the day of a learner's return to school will help to facilitate reintegration into the class.
- Finally, if a learner should die, the teacher should be able to help the class deal with this experience in a developmentally appropriate way, bearing in mind that there are a variety of different religious and cultural beliefs and rituals about death. Appropriate interventions might include attending the funeral, sending letters or drawings to the family, talking about the missed classmate or reading stories to younger children that deal with loss, death or dying.

19.7 CONCLUSION

Teachers are in contact daily with many learners, some of whom will have chronic health problems. Meeting the needs of all learners in the classroom implies that teachers have to expand their traditional roles and become competent in recognising chronic health problems which affect learners, while optimising learning experiences for these individuals. An inclusive approach to education means that all learners, including those with chronic diseases, have the right and ability to benefit from appropriate learning experiences provided in the school setting.

Questions

1. What resources are available in your community to help teachers learn more about the following chronic health diseases: asthma, diabetes, HIV/Aids? Develop a resource file with useful information for teachers about some of the chronic diseases mentioned in this chapter.
2. Write a short article for the staff newsletter about the general educational implications of chronic diseases in the school situation.

Bibliography

- American Academy of Pediatrics. 1999. Issues related to human immunodeficiency virus transmission in schools, child care, medical settings, the home and community. *Pediatrics*, 104(2): 318–324.
- Baum, J.D., Dominica, F. & Woodward, R. (Eds). 1990. *Listen my child has a lot of living to do: caring for children with life-threatening conditions*. Oxford: Oxford University Press.
- Bender, S.J. & Sorochan, W.D. 1997. *Teaching health science: elementary and middle school*, 4th ed. Boston, MA: Jones & Bartlett.
- Betz, C.L., Hunsberger, M. & Wright, S. 1994. *Family-centered nursing care of children*, 2nd ed. Philadelphia: W.B. Saunders.
- Bigge, J.L., Best, S.J. & Heller, K.W. 2001. *Teaching individuals with physical, health or multiple disabilities*, 4th ed. Columbus, OH: Merrill Prentice Hall.
- Black, S. 1999. HIV/Aids in early childhood centres. *Young Children*, 54(2): 39–45.
- Coscia, J.M., Christensen, B.K., Henry, R.R., Wallston, K., Radcliffe, J. & Rutstein, R. 2001. Effects of home environment, socioeconomic status, and health status on cogni-

- tive functioning in children with HIV-1 infection. *Journal of Pediatric Psychology*, 26(6): 321–329.
- Department of Education. 1999. National policy on HIV/Aids for learners and educators in public schools and students and educators in Further Education and Training institutions, Notice 1926 of 1999. *Government Gazette*, Volume 410(20372). Pretoria: Government Printer.
- Department of Education. 2002. *Curriculum 2005 assessment guidelines for inclusion*. Available at: <http://education.pwv.gov.za/index.asp?src=rsea> (accessed 29 August 2004).
- Department of Health. 2001. *HIV/Aids: care and support of infected and affected learners*. Pretoria: Government Printer.
- Frieman, B.B. & Settel, J. 1994. What the classroom teacher needs to know about children with chronic medical problems. *Childhood Education*, 70(4): 196–201.
- Funk, S.G. (Ed.). 1993. *Key aspects of caring for the chronically ill: hospital and home*. New York: Springer.
- Jackson, D.B. & Saunders, R.B. 1993. *Child health nursing: a comprehensive approach to the care of children and their families*. Philadelphia: Lippencott.
- Janse van Rensburg, E. 2000. The origin of HIV. *South African Journal of Science*, 96(6): 267–269.
- Jeffrey, P. 1990. Enhancing their lives: a challenge for education. In Baum, J.D., Dominica, F. & Woodward, R. (Eds), 1990. *Listen my child has a lot of living to do: caring for children with life-threatening conditions*. Oxford: Oxford University Press, 133–137.
- Kapp, J.A. (Ed.). 1994. *Children with problems: an orthopedagogical perspective*. Pretoria: Van Schaik.
- Kibel, M.A. & Wagstaff, L.A. (Eds). 1995. *Child health for all: a manual for southern Africa*, 2nd ed. Cape Town: Oxford University Press.
- Kline, F.M., Silver, L.B & Russell, S.C. (Eds). 2001. *The educator's guide to medical issues in the classroom*. Baltimore, MA: Paul H. Brookes.
- Knight, W.G., Mellins, C.A., Levenson, R.L., Arpadi, S.M. & Kairam, R. 2000. Effects of pediatric HIV infection on mental and psychomotor development. *Journal of Pediatric Psychology*, 25(8): 583–587.
- Krüger, D. & Groenewald, S. 2004. *A practical guide for learners to accommodate diversities in inclusive education – secondary schools and colleges*. Bapsfontein: OBE Publishers.
- Lewis, S.Y. 2001. Coping over the long haul: understanding and supporting children and families affected by HIV disease. *Journal of Pediatric Psychology*, 26(6): 359–361.
- Marotz, L.R., Cross, M.Z. & Rush, J.M. 2001. *Health, safety and nutrition for the young child*, 5th ed. Albany, NY: Delmar.
- Mental Health Information Centre. 2004. *What is an eating disorder?* Available at: <http://www.sun.ac.za/mental-health/eating.htm> (accessed 15 June 2004).
- Orr, J.P. 1992. *A nursing model for the care of the hospitalised preschool child*. Unpublished MA dissertation. Pretoria: Unisa.
- Perrin, E.C. & Gerrity, P.S. 1981. There's a demon in your belly: children's understanding of illness. *Pediatrics*, 67(6): 841–849.
- Sexson, S.B. & Dingle, A.D. 2001. Medical disorders. In Kline, F.M., Silver, L.B. & Russell, S.C. (Eds), *The educator's guide to medical issues in the classroom*. Baltimore, MA: Paul H. Brookes.
- Synoground, S.G. & Kelsey, M.C. 1990. *Health care problems in the classroom: a reference manual for school personnel emphasizing teacher classroom observations and management techniques*. Springfield, IL: Charles C. Thomas.
- Tompkins, W. & Shannon, T. 1993. *Student health problems: an educator's reference*. Albany, NY: Delmar.
- Wolery, M. & Wilbers, J.S. (Eds). 1994. *Including children with special needs in early childhood programs*. Washington, DC: NAEYC.



Section

H

**Addressing
challenging
behaviour**

ADDRESSING CHALLENGING BEHAVIOUR IN THE CLASSROOM

20

ERNA PRINSLOO

Learning outcomes

After reading this chapter you should be able to

- ▶ understand the nature and extent of challenging behaviour and its causes
- ▶ recognise the roles of home, school and society in creating behavioural and discipline problems
- ▶ identify some common mistakes teachers make when they discipline learners
- ▶ understand and implement useful strategies in preventing disruptive and challenging behaviour.

Having learners who show disruptive behaviour is not new.

Our approach to helping them has changed dramatically.

Key terms

challenging behaviour ♦ disruptive behaviour ♦ problem behaviour ♦ causes of problem behaviour ♦ manifestations of problem behaviour ♦ teacher mistakes ♦ strategies to prevent problem behaviour ♦ positive reinforcement ♦ punishment ♦ token economy programme

20.1 INTRODUCTION

One of the most important problems facing teachers in the new education dispensation in South Africa is challenging behaviour in the classroom. There is a general climate of undisciplined behaviour and an aversion to the acceptance of authority, which results in the disempowerment of teachers and a lack of successful learning of too many learners in South African schools.

The reasons for this rising tide of unruliness are manifold. The origin of the problem lies in the total disruption of **family life** in the postmodern world. Safe and secure family circumstances where parents and grandparents inculcate values and serve as role models for children are fast disappearing. The lack of warmth, acceptance and provision of basic needs has caused a climate of physical and emotional insecurity, which has led to hostile and unruly behaviour of children. Low economic status of families and communities has influenced children's lives and behaviour. Single parenthood, stressful life experiences and violence in everyday life contribute to feelings of insecurity and isolation and aggravated problem behaviour (Najman et al. 2000: 439).

The problem is further aggravated by a situation in **schools** that is not conducive to positive character development or the stimulation of creative cognitive development. Teachers are often not well qualified. They lack the knowledge of different teaching methods, and they are demotivated by the large number of learners in their classrooms, by the lack of parent involvement in the

learning process, and by the challenges of outcomes-based education and the new National Curriculum.

The 21st century has also brought an important change in **communal life** in the country. The emphasis on human rights and the decline of norms and values have resulted in moral and sexual licentiousness. The demand for human and children's rights without the acknowledgement of the responsibilities expected from members of the community encourages rebellious behaviour. Materialism, abject poverty and the influence of globalisation on communal life and the economy contribute to the spirit of selfish individualism, desperation and the lack of involvement in the cognitive, moral and social development of children.

ACTIVITY

The most recent documents of the Department of Education (2001; 2002) speak of "challenging behaviour" instead of behaviour problems. What is your view on this?

20.2 CAUSE, NATURE AND EXTENT OF TYPICAL CHALLENGING BEHAVIOUR IN THE CLASSROOM

20.2.1 Causative factors

Learners may display challenging behaviour and emotional problems for a variety of reasons. These can be caused by factors that are intrinsic or extrinsic. Usually the factors are mutually interactive and although we cannot really separate them, the following main groups are distinguished for the sake of clarity:

20.2.1.1 Intrinsic factors

Intrinsic factors that impact on learners' behaviour include hearing and vision impairments, food intolerance, autism, medical conditions (e.g. epilepsy and brain damage, heart diseases, and disturbances of glandular activity and blood sugar), and psychological conditions (e.g. low self-esteem, difficult temperament, psychotic disorders and levels of intelligence). Teachers have little influence on these conditions – except for direct support in cases of difficult temperament and low self-esteem – but it is necessary to know

that they exist and can cause perceptual problems, attention deficits, hyperactivity, lack of social perception and a general lack of perception of proper behaviour in the classroom. Detailed information on the nature and effects of intrinsic factors causing challenging behaviour, as well as guidelines on dealing with these problems, can be found in Chapters 12–19.

20.2.1.2 Extrinsic factors

The home environment and the school determine the emotional and social adjustment of children and these factors interact with the genetic predisposition in shaping behaviour (Farrell 1995: 3).

Family factors

The most important function of a family is to provide parents and children with love, emotional support and security. It serves to guide the children to behave in a socially acceptable manner according to the values and norms of their society and to provide for the basic physiological needs of all its members (Wood 1991: 414). Researchers such as Rizzo and Zabel (1988) and Weeks (2000) identify the experience of a variety of needs in the developmental years of children and adolescents: they want to be accepted and needed by their families, they want to be cared for and protected, they want to be treated with respect and dignity, they want to experience a sense of belonging and feel valuable to their families, they want to be educated and guided to act in a socially acceptable way and they want to benefit from opportunities which will provide them with a feeling of self-actualisation by being creative and having done useful work (Weeks 2000: 215). It is essential that the atmosphere in the home be of such a nature that children can develop a sense of trust and positive self-esteem and a feeling of independence and self-actualisation.

The **home environment** in South Africa, as in the rest of the postmodern world, fails to a large extent to provide children with the background that is conducive to harmonious development and positive behaviour patterns. Parents are often beset with a spirit of selfishness and materialism and are so busy with their own expectations that they do not have time to pay attention to their children. They neglect their responsibility to

inculcate norms and values and serve as role models. The children are not regarded as worthy of attention and are deprived of emotional support. The rising number of divorces causes a large number of single-parent households where children have little opportunity of experiencing parental involvement and security.

The **rising tide of poverty** in South Africa has a devastating effect on the developmental environment in many homes. Poverty manifests in ill health, undernourishment, deprivation of privileges, unsupportive environments in informal settlements and squatter camps, language deficiencies, limited social status and a negative view of the future. Technological backwardness, an opportunity-deprived existence, conflict, violence, crime, substance abuse and psychological deprivation aggravate the problem and form an escalating cycle of deprivation. The increasing number of Aids deaths in the country has the effect that more and more children are becoming the heads of households where they must assume the financial and emotional responsibility of providing for younger members of the family without any kind of support system. Children in such circumstances are vulnerable and isolated and very often the victims of physical, emotional and sexual abuse. A negative personal and academic self-concept, a low level of motivation, accumulated scholastic backlogs and frequent early school leaving are all problems that these children are forced to deal with. Educators have to be aware of the circumstances of these disadvantaged learners and also realise that they constitute the vast majority of the school population in the country (Prinsloo in Van Wyk & Lemmer 2002: 66). Dignified and respectful conduct towards teachers and peers at school becomes an empty ideal that has no place in their frame of reference.

Educational neglect implies, as a matter of course, that little or no demands are made on children regarding self-discipline. They do not acquire positive norms and they are not required to comply with demands. The influence of the home on the development of children's conscience therefore remains incomplete. Kapp (2002: 116) explains that educational neglect like this may lead to serious deficiencies in children's psychological lives. On the one hand, their emo-

tional life will lack depth because of emotional neglect. On the other hand, their understanding of norms will be poor because of a lack of involvement and role modelling. Such children often display a weak will, lack of moral feeling and self-control, and little empathy with others. They find it difficult to integrate into society, and experience dissatisfaction and frustration with resultant misbehaviour or deviant behaviour as an expression of inner conflict. This in turn may lead to clashes with educators and sometimes also with the law (Kapp 1999: 116).

ACTIVITY

Make a list of the factors that make family life in your community dysfunctional. Can the school or other community structures be mobilised into improving the situation?

School factors

Some children display challenging behaviour when entering school, while challenging behaviour of others commences during their school years, often simply as the result of unfavourable experiences at school. Children experiencing challenging behaviour create problems for teachers as well as for classmates. They are not easily accepted into the class community and feel unwanted, belittled and alone. They cannot fully participate in class life and are deprived of the opportunity to acquire the necessary cognitive and social skills to establish self-confidence, a sense of worthiness, effective communication, harmonious relationships and eventual self-actualisation.

Factors that may contribute to emotional and behaviour problems in schools are the following:

The curriculum

Learning content must be embedded in the context of the children's culture and life world in order to be meaningful to them. Learners who find the curriculum pointless and meaningless and not targeted at an appropriate level, or who even view it as irrelevant to their future work-related needs, distance themselves from the task of learning and may as a consequence display various forms of unacceptable behaviour. Such behaviour

may typically include not paying attention in class, not completing their homework, not preparing for tests, and in certain circumstances, even truancy (Jones & Charlton 1996: 19).

Curriculum renewal has become a top priority in South Africa's education policy since 1994. The present curriculum strives to reflect learners' culture, unique history, familiar life experiences and future work-related needs. Great emphasis is placed on the teacher's task to present the study material in a manner that is in line with learners' life world and is engendered with meaning and relevance. Learners need to be encouraged to critically evaluate their study material and to be involved in the implementation of it in their frame of reference. Teachers have to ensure that all content is presented in a learner-oriented way by using examples and assignments that relate to learners' life worlds. The new National Curriculum changed the focus in the classroom from content to vocational training, and emphasises the developmental outcomes of each phase. In culturally diverse classes, however, where learners are not taught in their mother tongue, this is no small task. In the present inclusive educational scene with its large classes and increasing levels of diversity, this task has become extremely complex.

School organisation

The organisation and rules of the school should make sense to learners. Where they do not fit into the general pattern or where they feel that they are not important and not accepted in their unique circumstances, they will be uncooperative and display unacceptable behaviour. The way in which discipline is maintained in the school and in the classroom often contributes to the encouragement of misbehaviour. Discipline should never be too lax, too rigid or inconsistent. Too often misbehaving children are rewarded with recognition and attention in the form of criticism or punishment while the children who behave well are ignored.

Treat people as if they were what they ought to be and you help them become what they are capable of becoming.

ACTIVITY

Consider the situation at your school and then point out in what way the organisation of the school can be modified to improve learning success and to produce better-behaved learners.

The school personnel

The attitude and behaviour of the principal and the class teachers have an important influence on the attitude and behaviour of the learners in the school.

A principal who is rigid, autocratic and unwilling to listen to teachers and learners, and who conveys the message that he is not interested in promoting the interests of learners and teachers, encourages demotivation and misbehaviour from all members of the school community. The principal should at all times be dedicated, enthusiastic and willing to motivate learners, teachers and parents. The whole school development, which is the natural result of this approach, is described in Chapter 1.

Teachers are the people who have the most influence on learners' behaviour and performance. They determine the class atmosphere and take the initiative for relationships between themselves and each of the learners. They decide how the class routine and activities will be organised, in what way they will present the curriculum, which teaching methods they will apply and what kind of behaviour they will expect and tolerate in their classrooms. Teachers should have the necessary knowledge of the learning areas they teach, the skills to observe and assess undesirable behaviour, and the ability to design suitable strategies to prevent and alter misbehaviour. Teachers who are not well qualified and who lack the necessary skills to understand different learning styles and use different teaching styles are too often so unsure of themselves that they have little positive influence on learners. Their lack of motivation, enthusiasm and interest in the learners encourages negative behaviour in the class. Children need a supporting atmosphere of emotional warmth, encouragement, high expectations and active guidance in the development of a positive self-concept. Where such an atmosphere is

lacking, they are naturally inclined towards an unwillingness to learn and towards negative behaviour.

ACTIVITY

The demands of inclusive education, outcomes-based teaching, new forms of assessment and the new National Curriculum often serve to demotivate teachers – especially where they struggle with large classes of 40 and more learners.

Do you have any suggestions on how teachers can succeed in meeting the new demands and keep up a positive, self-motivated and enthusiastic attitude in class?

Community factors

Post-industrial life in the 21st century is determined by continuous and dramatic changes.

Social structures in South Africa have undergone a radical change in terms of rapid and unplanned urbanisation, a breakdown in family life, a new permissiveness regarding moral values and the HIV/Aids pandemic. Moreover, the 21st century is characterised by a production-oriented materialism and accelerated technological advances. Developments in the mass media with specific reference to the Internet and television make it possible to be instantly aware of what is happening in every corner of the earth. The boundaries between peoples, nations, religions, value systems and lifestyles are collapsing, thereby creating a cosmopolitan world order. Society is confronted by a powerful, often confusing diversity of values. Influences of the mass media, and the advertising, fashion and entertainment world are often in direct conflict with the values of traditional cultures in South Africa. The continuous confrontation with a multiplicity of lifestyles and pluralistic values has had its impact on society. A countrywide survey conducted in 1998 brought the following sad picture to light:

There is an increasing loss of honesty, integrity, chastity, diligence, a pride in work well done, and respect for the lives and possessions of others. The rising wave of corruption, crime, violence, moral and sexual

licentiousness and the egotism and greedy materialism of the new South African society come to the fore in the responses of 87 per cent of the participants in the survey (Prinsloo 1998: 19).

A misinterpretation of the privileges of human rights has resulted in disharmonious relationships between parents and children. Traditional morals have been discarded for a more permissive way of life. Parents in all areas report an often unbridgeable gap between them and their children. They complain that children are becoming increasingly difficult to control and disrespectful of elders.

Restoring the value system and moral fibre of society is a challenge of the highest priority for South Africans in general and the education sector in particular. The Minister of Education and the Department of Education have accepted this challenge and stated that our entire reconstruction and development project in the 21st century will depend upon our determination and creativity in addressing the complicated area of values education (Republic of South Africa 2000: 3).

ACTIVITY

When you think about everyday life in your community, can you point out specific attempts of families, schools and community structures like churches and cultural or sport organisations to inculcate proper values in the lives of children? Write down your thoughts on the degree of success you think your community structures are achieving.

Apart from the abovementioned contextual situations, learners are also more inclined to develop challenging behaviour, according to the Royal College of Psychiatrists (1999), if they

- always had difficult personalities
- have learning and reading problems which make it difficult for them to participate in class activities – they become bored and feel inferior
- are inclined to be depressed
- are abused or bullied
- are hyperactive, which causes a lack of self-discipline, and the inability to concentrate and obey rules.

20.3 MANIFESTATIONS OF CHALLENGING BEHAVIOUR IN SCHOOLS

Challenging behaviour is encountered in learners of all ages. The following research findings are but a few examples illustrating the different perspectives from which challenging behaviour is viewed. In these perspectives are elements of labelling in terms of sex, age and characteristics of behaviour patterns, as well as elements of moral judgement. According to Herbert (in Weeks 2000: 167), the art of labelling is rooted in social judgements made on the basis of social criteria embedded in society, while moral judgements are based on good or bad behaviour which is founded on moral values. Weeks (2000: 167–168) summarised the findings of Barker, Herbert, McNamara, Montgomery, Conway, and Lewis and Doorlag as follows, and stated that some of these viewpoints might be contradictory and not applicable to all learners or groups of learners:

- Behavioural problems are more common among secondary than among primary school learners.
- Boys are more likely than girls to display problem behaviour. They are also more frequently involved in juvenile delinquency.
- Boys are more inclined to exhibit disruptive behaviour than girls.
- Challenging behaviour occurs more frequently in urban than in rural areas.
- Certain types of challenging behaviour tend to occur in certain combinations. For instance, aggressive behaviour is associated with juvenile delinquency and the use of addictive substances. Lying is often associated with theft and other severe challenging behaviour. Types of challenging behaviour are interrelated and should be treated as such.
- Challenging behaviour often makes its first appearance within the home where the earliest symptoms can be detected – lies, disobedience, and verbal or physical aggressiveness towards family members. As the problem gets worse, it begins to manifest outside the home environment.
- Disruptive behaviour in the classroom is the most common challenging behaviour that teachers encounter in practice.

- There is a continuation of early challenging behaviour into later juvenile delinquent behaviour during adolescence.

Teachers from all areas in South Africa report that the most common problems which they encounter in the classroom are attention-seeking and disruptive behaviour. Other common problems in the classroom are

- attention deficit
- aggressiveness
- stubborn disobedience and a refusal to accept discipline
- negativity – a refusal to strive towards achievement or to work and cooperate with others
- depression
- anxiety
- lack of motivation and interest
- talking out of turn and hampering other learners
- inadequate peer relations.

Lying, stealing, truancy, fighting, use of addictive substances, rape, arson and vandalism are more serious problems which are very often part of the school scene in the country, but such behaviour patterns do not interfere with the everyday classroom routine to the same extent as the above-mentioned problems do.

20.3.1 Effects of disruptive behaviour on teachers, learners and the country

ACTIVITY

Before reading this paragraph, make a list of the types of behaviour that you encounter in your classroom (or have encountered in the class during your school-going years) that you regard as most problematic for teachers. What do you think can be done about it? Are teachers in any way empowered to deal with problems which have their cause in factors often completely out of their sphere of influence?

Disruptive behaviour includes any kind of behaviour that has a negative effect on the learning process in the classroom. Teachers mention the

following as examples of common types of behaviour that disturb their lessons. A refusal to obey requests and commands; noisiness; showing off; teasing; irritating or disturbing other learners; leaving their seats without permission; talking out of turn; calling out when the teacher is speaking; making improper noises; not paying attention; storming out of the classroom, and even knife attacks. These forms of challenging behaviour establish patterns that occur all the time and make it virtually impossible for teachers to teach properly. Teachers are unable to pay the necessary attention to any other learners who are in need of support, the learners who engage in such behaviour get no benefit from the learning material, the attention of all the other learners is distracted and the atmosphere in the class is negatively affected. Teachers are often so discouraged by this loss of control that they lose their enthusiasm and motivation, and the entire learning process is hampered.

A lack of enthusiasm to teach and the lack of proper circumstances to learn inevitably lead to underachievement and aggravate the lack of a culture of learning and teaching which has become the one problem that will have the most profound influence on South Africa's future development. Underachievers usually leave school early or unqualified, find it difficult to secure employment, easily become trapped in poverty, participate in negative social practices and crime, and are unable to control their own lives. Often they become part of that growing social grouping in the community that does not make a positive contribution to the social and economic welfare of the country, but remains dependent on the state's health and welfare services that cater for the poor. It is therefore of the utmost importance that teachers are trained and empowered to successfully deal with challenging behaviour in the classroom.

ACTIVITY

Consider all the aspects of your past or current training as a teacher. Write down everything that has helped you (or will help you) to cope with difficult situations in the classroom. What would you like to add to your training to enable you to deal more effectively with learners' challenging behaviour?

20.4 STRATEGIES IN DEALING WITH CHALLENGING BEHAVIOUR IN THE CLASSROOM

Discipline problems in schools can in many ways be categorised into some general types. It is, however, virtually impossible to anticipate particular problems and to employ predetermined strategies of intervention. Teachers need to become proficient in using a hierarchy of discipline strategies and to be comfortable with responding in particular situations to a multitude of unique and unexpected situations. In order to do this effectively, it is important for teachers to develop a sound theoretical foundation from which to approach each unique learner's discipline problem.

As teachers manage their classroom rules and procedures, they periodically encounter various kinds of misbehaviour. If such discipline problems have not been prevented, they must be managed when they occur. There are a variety of specific strategies, ranging from non-intrusive to very intrusive, that teachers can employ to effectively deal with the various discipline problems they will encounter. It is essential for teachers to correctly choose and effectively employ the appropriate strategy. It is important not to overreact to a situation with an intervention that is too heavy-handed, and similarly, it is necessary not to under-respond to a situation and let it get out of hand.

The most important thing that teachers have to remember is that they always have to respond to learners in a totally consistent manner. In terms of discipline, all children must be treated exactly the same all the time. The next most important thing in maintaining discipline is the issue of respect. If teachers are respected by their learners, they will have fewer discipline problems to deal with and will be more effective in handling those that occur. The first and most important step in earning learners' respect is to respect them. Respect in its turn evokes a relationship of trust, and with mutual respect and trust the cornerstones are laid for a classroom atmosphere of warmth and caring which is necessary for successful learning to take place.

Prevention is always better than cure. Teachers should plan the classroom procedure and

atmosphere beforehand in order to prevent, as far as possible, discipline problems before they occur.

20.4.1 Prevention of challenging behaviour

The discipline situation in many schools in South Africa is definitely not conducive to teacher enthusiasm in conveying learning material. Teachers often despair because of the large numbers of learners in the classrooms and the difficulties they have in trying to control all types of disruptive behaviour.

There are, however, a number of important steps teachers can take to prevent discipline problems from developing. In all effective schools the following qualities of teachers are implicit:

- Teachers should have high expectations of learners.
- They should communicate such expectations regularly.
- They should monitor learner behaviour consistently.
- They must share the responsibility for discipline with principals and vice-principals.
- They should foster home–school relations by keeping parents/caregivers involved and informed.

Discipline problems can be prevented to a large extent by the establishment and maintenance of an effective and efficient system of classroom management. Discipline and classroom management are not the same thing. Discipline is a major part of classroom management but it is reactive in nature. Teachers react to learner behaviour that disrupts the good order of the classroom, whereas classroom management is proactive. It is preventative and its goal is self-control on the part of the learners.

According to Eggen and Kauchak (in Campbell 1999: 45) the two major goals of classroom management are the following:

- To create the best learning environment possible (This does not necessarily refer to supplies and equipment but rather to an atmosphere of warmth and care, of respect and trust.)

- To develop learner responsibility and self-regulation

Classroom management means establishing and maintaining a routine in the classroom that allows teaching and learning to proceed effectively. An important component of classroom management is *planning*.

20.4.1.1 Planning

Well-managed classrooms do not happen automatically; a shrewd teacher plans everything, from the seating arrangements to what happens when the bell rings at the end of a period.

Important questions that should be considered are the following:

- How do I develop healthy, appropriate relationships with learners? (Should I try to be popular or should I be firm and knowledgeable so that they can respect me first and then hope for trust and liking?)
- In what different ways can I communicate with learners (spoken words; eye contact, body language; written words)?
- What do I have to do to keep the learners busy all the time?
- What rules should I have in my classroom?
- Should I employ particular seating arrangements and when should I change them?
- What issues should I consider in grouping learners for academic work and social activities?
- What should I require or allow when learners finish their work before the other learners?
- What should I require or allow when learners enter the class and when the bell rings at the end of the day or the end of a period?
- In what ways can I make learners feel good about themselves and experience success in the learning process?

Planning a system of classroom management requires, according to Campbell (1999: 45), both *reflection* and *anticipation*. It is important to reflect on previous experiences and to think about the possible problems that could occur if teachers have not prepared for them.

Have you ever considered any one of these questions before entering your classroom? Do you think that it is necessary to do so? Have you ever found yourself displaying a defensive reaction to disruptive learners in any one of these abovementioned situations?

Two important aspects of a system of classroom management that require planning are the classroom rules and the procedures that will be employed in the classroom. Consideration of the type of learners the teacher will have (foundation phase, intermediate phase, senior phase) and the total ecology of the classroom are necessary in order to develop appropriate rules.

Possibilities within the school organisation that can be exploited to give learners a better chance of successful learning and positive behaviour are, for instance, the following:

- Learners may be grouped in classes according to their performance in a learning area – i.e. ability grouping (e.g. their reading ability). Groups may also be deliberately mixed, grouping stronger and weaker learners together so that the stronger performers can help the weaker ones.
- Teacher assistants can be used to increase the teaching time of teachers.
- More flexible examination procedures can be adopted so that learners who do not pass certain learning areas/subjects can continue with their other learning areas/subjects while getting another chance to repeat anything they have failed. This will bring about modified forms of transfer and prevent the discouragement of the repetition of a full year.
- School timetables can be modified to fit learners' circumstances. In rural areas schools can open later at certain times of the year.
- A rule system for the school may be developed in cooperation with the learners, or with the class leaders and/or learner council. Always ensure that there is some form of recognition and reward for learners who are well behaved and have a positive attitude.

- A culture of warmth, caring and academic excellence should be deliberately created so that learners feel important, respected and motivated towards a hopeful future.

20.4.1.2 Classroom rules

Rules can be considered the standards of acceptable behaviour in the classroom. The learners should be helped to realise that rules are necessary and fair, and they should be encouraged to participate in the development of the classroom rules (Campbell 1999: 47). It is common knowledge that learners are far more willing to comply with rules they have helped to plan than with those that are forced on them.

A wise teacher will get the learners together on the first day of school to discuss and develop the rules that are necessary in their particular classroom. Teachers should always remember that consistency is perhaps the most important factor in enforcing classroom rules. All learners must be treated in exactly the same way when enforcing the rules. Any exception should be clearly understood and agreed upon by the entire class. Learners who regard a teacher as unfair will be most unwilling to obey any of that teacher's rules or commands. Disruptive learners especially will see this as a reason and opportunity to disobey. Classroom rules should also be consistent with the school rules, and learners should have that consistency emphasised for them. Teachers must also ensure that learners understand the reasons behind the rules, which will be so much easier if learners are given the opportunity to help develop and formulate them. Learners must also be helped to understand that rules are expectations of positive behaviour and not a list of "do nots".

Rules should be clear and concise and the list of rules must be kept *short*. A short list stated as positive expectations of behaviour will be easy to understand and remember.

20.4.1.3 Procedures (or classroom routines)

Classroom procedures are the routine learners will have to follow in order to fulfil all the responsibilities implied by the rules. Established procedures are not only helpful but necessary to establish order in the classroom. This is especially

important in South Africa where there are large numbers of learners in most classrooms. Campbell (1999: 49–51) states the following as situations in the classroom requiring carefully developed procedures:

- Learner arrival and acceptable activities while waiting for the teacher to begin
- What learners may do when they have completed their work
- How homework and class work are to be handed in
- To what extent learners are allowed to talk quietly occasionally, or whether they are expected to remain totally silent all the time
- How to ask for help from the teacher
- How to clean up at the end of the day
- How a teacher can work successfully with one group of learners in a cooperative learning situation, and also monitor the behaviour of the rest of the class

Teachers who anticipate situations that will require set routines and develop such routines in advance will have these situations unfold in an orderly manner in most cases (Campbell 1999: 54). Once routines have been established – even with the senior learners in secondary school – they should be rehearsed until they become automatic. Teachers have to stand absolutely firm on all issues of classroom management.

This brings us to the important issue of the personality of the teacher and the teacher's ability to successfully establish a relationship of respect and trust with learners.

20.4.1.4 Teacher–learner relationships

Teachers all have different types of personalities. Whether you are a cheerful extrovert or a serious introvert does make a difference to the way in which you initiate relationships with your learners. Naturally you will fall somewhere on the continuum of autocratic to democratic. You have to keep in mind, however, that your position on this continuum will create certain consequences in your classroom. If you attempt to be too autocratic, you will invite many confrontations with your learners and the older the learners, the more

problematic such confrontations will be. If you are too democratic you may invite anarchy. How, then, should you create this atmosphere of warmth, sympathy and enthusiastic support – the most important facet of successful teaching and learning – in your classroom?

Eggen and Kauchak (1997) suggest three important teacher skills that are helpful in creating such an atmosphere and in preventing discipline problems. These skills are organisation, lesson flow and communication

Organisation

Organisation refers to the fact that teachers should *know the learning material well and be prepared to teach it well* in each separate lesson. To be unprepared in any way is an invitation for disorder and disruption. Lessons must be carefully planned and teaching materials well prepared and ready to use. If you are unsure of how to proceed with the lesson or if you do not have the learners' books ready to pass out, you create the opportunity for disruption. Learners who are continuously kept involved in the learning activity will not easily disrupt others or start whispering to a friend.

A second organisational skill that helps prevent discipline problems is the *effective use of time*. Begin the day and all lessons *on time* and keep the learners involved for the duration of each activity. Learners who are waiting for a teacher or have nothing to do will make mischief and create disruptions.

Lesson flow

The skill and efficiency with which a teacher keeps the lesson moving determine the involvement of the learners and the prevention of disturbances. This skill comes with time and experience and is often difficult for new teachers. You should, however, be aware of its importance and purposefully strive to achieve it. Also, teachers' ability to know what is going on everywhere in the classroom – even when they are occupied – is an important skill in preventing all kinds of disruptions. Kounin (in Campbell 1999: 54) coined the term “withitness” to describe the art of conveying to the learners that you know what is

going on all the time. “Withitness” helps immeasurably in preventing discipline problems.

Communication

The way in which teachers express themselves to their learners is another important skill that helps in the prevention of disruptive behaviour. “Tone of voice, body posture, and facial expression are powerful tools of communication that teachers can use strategically to prevent problems before they blow up” (Campbell 1999: 54). It is always better to prevent problems in the classroom than to deal with them when they occur.

It is important to remember that the *personality of the teacher* is certainly the most important factor in preventing challenging behaviour. Teachers who earn the respect of their learners and who are trusted to guide them will have fewer discipline problems than those who are not respected. Teachers should earn learners’ respect by respecting them. Treat them fairly and courteously. Be consistent in the enforcement of rules and treat all learners in exactly the same way. Set an example in diligence and work well done and create a classroom atmosphere where the learners feel welcome and appreciated. Create opportunities for success for all learners – no matter what their potential – and praise them individually within the hearing of the peer group. *Nothing succeeds like success* and the experience of success in classroom activities will inspire the learners to try their hand more at learning and not so much at mischief.

20.4.1.5 Parent involvement

Parents and teachers working together can produce more effective changes in a learner’s behaviour than either party can when grappling with the problem alone.

Children learn socially acceptable behaviour in the home. Parents/caregivers invest psychic energy in certain modes of conduct and the child emulates these. Moral, cognitive and spiritual aspects are learned through parental models. Social development is also closely related to normative education. Examples of behaviour traits learned by children from parents/primary educators include cooperation, responsibility, unselfishness,

punctuality, obedience, loyalty and neatness. Parents’ relationships with their children influence the learning process and children’s behaviour at school. Children who grow up in a home where there is understanding, love, trust, confidence, warmth and acceptance are well adjusted. They develop positive self-concepts and are diligent, obedient and responsible learners in the classroom.

Success at school depends on a triangle of interaction of three components, namely the teacher, the parent and the child. A working partnership between parents and teachers enhances the chances of successfully helping the child to learn and to develop positive behaviour.

Parental involvement in education can be explained in terms of *intentional* and *functional* education roles. An intentional education role is the purposeful intervention of parents with a view to agree with, prevent or correct specific behaviour of their children. Functional education results from the presence of the educator. The mere presence of parents and the norms they embody sometimes has a greater influence than intentional education. Parents’ or – as is mostly the case in South Africa – caregivers’ physical presence at school, interest in school activities and contributions through governing bodies, task groups and security offices can be regarded as functional education. This greatly facilitates the children’s educational development and behaviour patterns. Read more about parental and community involvement in the learning situation in Chapter 11.

There are many ways in which parents or caregivers can be involved in school life:

- They can be involved in activities such as parent–teacher associations, education committees, supervision of the school library or study periods in the afternoon, social events, fund raising and classroom activities.
- They can support school activities when they accompany teachers and learners to the local library, the park, the zoo or a more distant outing.
- They can act as teacher assistants in the inclusive classrooms where there are usually learners who need individual attention.

- They can assist in the organisation and management of extracurricular activities such as sports coaching, fund raising and assisting with school newsletters and magazines.
- They can also help with the day-to-day running of the school, e.g. the maintenance and repair of school facilities, protection of the school facilities and gardening.

ACTIVITY

A rural primary school in Mpumalanga called upon all the grandmothers in the school area to help with the establishment of a vegetable garden on the school grounds. The aim was to use the vegetables to cook soup for the children who often came to school with empty stomachs. The grandmothers were also asked to be present at the school gates early in the morning to welcome the children and to hug those who looked dejected and miserable. The results were remarkable: learners and *teachers* started to arrive on time and the younger learners were very eager to receive their morning hug. Spirits rose and the atmosphere of warmth and caring at the school changed not only the behaviour of the learners but also their academic achievements.

It is often very difficult to involve the parents in South Africa in school life. In the rural areas children live with grandparents who are too old to travel the far distances to the school. In urban areas parents work such long hours that they seldom have the time to become involved in the running of the school or even in assisting or motivating their children with their academic work. Nevertheless, in spite of all the difficulties, the school personnel of every school should strive towards involving the parents as far as possible. Such involvement eliminates conflicts, strain and controversy between teachers and parents or caregivers, and it ensures effective control of the school system as well as the control and discipline of unacceptable behaviour patterns. The support system created in this way makes life that much easier for teachers, parents and learners.

ACTIVITY

Write down the attempts made by your school in involving parents in the learning process. How successful are these attempts? Do you have any proposals of your own about the way in which parents can be involved in the learning process and in the control of challenging behaviour?

20.4.2 Dealing with challenging behaviour

One of the most efficient strategies for altering behaviours is to alter the consequences that follow it.

“Positive discipline should suggest a range of practices that contribute to a well-managed classroom in which students enjoy going about the business of learning” (Smith & Misra 1992 : 353). Children and adolescents are seldom well behaved all the time. For the past two decades in South Africa – as in the rest of the world – teachers and parents have experienced an increase in disruptive, aggressive and violent behaviour from learners. Major problems in classrooms include open defiance, violence, possession of drugs, rape, insubordination, vandalism and stealing. There are also a number of less serious but more frequent behavioural problems that teachers have to deal with such as sulking, interrupting, seat leaving, talking out and open lack of interest.

The way in which teachers respond to challenging behaviour should always depend on the type of problem exhibited. One cannot react to an episode of interruption in the same way as one does to an act of vandalism or violence. Teachers should never overreact, but should respond appropriately to discipline problems.

A number of efficient intervention strategies that teachers should keep in mind and implement at the right moment are the following:

- Positive reinforcement
- Punishment
- Token economy programme

20.4.2.1 Positive reinforcement

A reinforcer is any stimulus that follows the occurrence of certain behaviour and increases the

probability and rate of that behaviour (Burke 1992: 64). In order to alter negative behaviour patterns, a teacher should alter the consequences that follow such behaviour. Consequences may include obtaining a preferred object, participating in a fun activity or receiving additional attention from a teacher or from other learners. Any event, object or activity that is preferred by a learner can be used as a reinforcer. It is unfortunately so that teachers often reinforce negative behaviour by rewarding it. How often have you noticed yourself or other educators rewarding a disobedient or argumentative learner with extra attention? Learners are very seldom noticed and praised for sitting quietly or paying enthusiastic attention or completing a task eagerly and quickly. It is usually the learner who behaves disruptively who is noticed and addressed. Learners with emotional problems who are in need of attention will specifically use this kind of manipulation to get the attention they want.

Teachers should be alert to the fact that reinforcement must be given to positive behaviour. Specific attention of the teacher and the classmates is a very strong reinforcer. Once teachers start using reinforcers to strengthen positive behaviour and discourage negative behaviour, there are a number of them that they can keep in mind. Depending on the age of the learner the following may be used:

- **Edible** reinforcers, such as raisins, nuts, cookies or candies
- **Sensory** reinforcers, such as listening to music, watching a colourful display or puppet show, riding a bike or scooter
- **Secondary** reinforcers such as toys, balloons, happy-face stickers, star stickers, more time to use a computer in the classroom or being class leader for a day/week
- **Direct** reinforcers, which are those which are directly related to the task or activity the learner is working on. For example, the Grade 7s are given an assignment to write a report on the care of wild animals in a zoo. Following the completion of their reports on a Friday they are allowed to attend a special trip to visit the zoo or even a nearby museum where wild animals are exhibited. Many learners who usually fail to complete their reports/essays on time will be motivated to complete their work in order to enjoy such a pleasurable reward (reinforcer). Clever teachers will plan academic activities in a manner that leads to learners' receiving a natural or direct reinforcer as a consequence for demonstrating positive classroom behaviour.

Guidelines to follow when using this strategy are the following:

- **Reinforcers must be preferred by a learner.** A learner must really want the item or desire to participate in the activity, otherwise the attempt will not serve as a reinforcer. Teachers should choose reinforcers mostly on an individualised basis to ensure that the learner really likes it.
- **Reinforcers must be checked during the time of use.** This implies that the teacher must re-evaluate the strength of a reinforcer over time and, if necessary, incorporate other items or activities.
- **Reinforcers must convey a direct message.** When teachers use social attention (a word of praise, a pat on the back, etc.) as a reinforcer, the type of attention should not be ambiguous. Saying: "Excellent work, Thabo!" with a frown or a dull voice may in fact serve as a punisher. A word of praise as a message should be very clear in words, tone of voice and body language. Social attention is usually highly desired by all learners and teachers should attempt to use positive social attention frequently as a consequence for appropriate behaviour.
- **Reinforcers should be given immediately.** Teachers need to deliver a reinforcer immediately following the learner's positive behaviour. This will help the learner to see the connection between the appropriate behaviour and the positive consequence. Senior learners in Grades 11 and 12 also like to receive reinforcers soon after performing a difficult or challenging task. Teachers should, however, pay careful attention to the selection of reinforcers for older learners.

Consider the ages and personalities of the learners in the classes you are responsible for. Then make a list of reinforcers that would work well in the process of motivation of positive behaviour for the class as a whole and for specific individuals (the difficult ones). Motivate why such reinforcers may work well and specify under what circumstances you will use them.

20.4.2.2 Punishment

Competent teachers will use rewards more often than punitive measures in managing learner behaviour. Yet even the best of teachers will have to use aversive strategies to suppress undesired behaviour. Punishment involves a wide variety of practices that learners find unpleasant. Teachers should, however, be reminded that corporal punishment is totally against the law in South Africa. Since punishment is a complex and unpredictable phenomenon, it must be used sparingly, skilfully and carefully. In some circumstances it is the best choice for dealing with learners who frequently behave disruptively. The use of punishment enables the teacher to suppress unacceptable behaviour at least temporarily, thereby creating an opportunity to establish more suitable behaviour through the use of reward.

The punishment of specific responses is informative to the learner, since it teaches what was wrong. It also has the advantage of stopping misbehaviour immediately and, as every teacher knows, there are occasions when this is necessary. Teachers should remember that the negative consequences meted out for deviant behaviour can serve as a lesson to the rest of the class. Learners are less apt to imitate a given misbehaviour once they have seen a classmate punished for it, but they are inclined to imitate disruptive behaviour if their classmate goes unpunished.

The warning of using punishment skilfully and sparingly must, however, always be remembered by all teachers. If you inflict pain through frequent criticism, sarcasm or the removal of a reward/privilege too often, you may draw the learners together in a defence mechanism and

they will deliberately repeat the misbehaviour and frustrate all your attempts to control the class atmosphere.

Factors that influence the rate and effectiveness of punishment are timing, frequency, intensity, consistency, the nature of the punishment (presentation of a painful stimulus vs removal of rewards), the affectionate relationship between the teacher and the learner, and the strength and nature of the behaviour being punished. According to Clarizio (1980: 161), punishment should have the following characteristics if it is to be used in aiding self-control:

- It should be related in form to the misbehaviour.
- It must be certain and consistent.
- It must be fair and just.
- It must be impersonal.
- It must be constructive and conducive to better self-control.
- It should avoid the arousal of fear.
- It should not involve the assignment of extra work that is unrelated to the act for which the learner is being punished.

Within the school climate of today it is sometimes difficult to decide what form of punishment will serve a situation the best. Teachers report that the removal of rewards or privileges is widely used and serves well to encourage learners to forego undesirable behaviour. Teachers who occasionally mete out punishment against the background of a school and class atmosphere of warmth and care where learners *feel welcome*, where they *trust teachers to help them to build positive self-concepts*, where they are *motivated to feel pride in work well done*, where they *experience success* and where the teachers are good role models of *diligence and responsibility*, seldom fail in their attempts to use punishment positively.

The following types of punishment can be used positively:

Time-out procedures

A learner who violates the rights of the teacher or the classmates is isolated from the group for 15 to 45 minutes, depending on the age of the learner. The learner must be placed in a position where he

is not able to talk to others, to look at friends, to laugh at or with them, or have any communication with them at all. An ideal way to achieve this end is to place a screen at the back of the classroom in such a position that the learner is out of sight of the peers but in sight of the teacher. A small place between the wall and the filing cabinet can also serve this purpose.

The teacher must not yell or scold but should dismiss the troublemaker as quietly as possible. Be consistent and isolate learners immediately who break specific rules (which have been agreed upon by learners and teachers at the beginning of the year). It is a good idea to give one (but only one) warning before isolation. The warning is often sufficiently punishing to eliminate the need for the time-out procedure.

Teachers who use the technique of allowing learners to wear ribbon wristbands that would entitle them to certain rewards can also do the following. Remove the wristband when the learner misbehaves. During this specified period when the wristband is removed, all rewards would be temporarily suspended.

Isolation within the classroom works best with primary school learners.

Withdrawing a privilege

Free time or recess or other preferred class activities such as physical education, art, field trips or music may be taken away. Recalcitrant learners can also be denied participation in activities such as cheerleading, learner government, the school yearbook or the school newspaper. The more meaningful the activity to a particular learner, the more useful the technique is in forcing the learner to comply.

Detention

Staying after school may take place under the teacher's direction, or learners may spend their detention time in the principal's office. Sometimes there is a special room in school set aside for detention. A detention room is a particularly effective punishment for learners who do not complete their assignments during class time as their detention time can be used to finish their work. It also provides opportunities for extramu-

ral help with problem areas when teachers take turns to invigilate detention classes. This is a particularly good strategy in urban schools where children live fairly near to the school.

Being sent to the principal's office

Larger schools have vice-principals who take primary responsibility for solving discipline problems. Such managers are able to employ more drastic measurements than teachers can. They can administer detention, in-school suspension, suspension from school, transfer to another school, expulsion and referral to other professionals.

Sending learners to another class

Learners ordinarily do not like being sent away to another class. Such a technique will help them to understand that inappropriate behaviour will not be tolerated. They would be sent away for the purpose of doing assigned work. Prior arrangements must be made with the other teacher.

20.4.2.3 Token economy programme

One of the most commonly used behaviour management systems is the "token economy" programme that was initiated by Kazdin (in Burke 1992: 95). A token economy system is a programme that is based on economic principles. A learner earns tokens for displaying a wide variety of appropriate classroom behaviours including task completion, responding to instructions and communicating appropriately with others. The tokens are acquired contingently and immediately after learners display such behaviour. The tokens can be used at a later time to purchase preferred items in the reinforcement store (books, pens, pencils, etc.), to obtain more time to play a computer game, or to participate in an extracurricular activity such as an outing. In addition, a learner can lose tokens for displaying disruptive behaviours or for not cooperating with the teacher. If a learner breaks a rule, he can be fined and lose a number of tokens. Each learner can earn, spend or lose tokens in an individualised manner; therefore a token economy programme can be a valuable method for promoting positive classroom skills and decreasing disrupt-

tive and non-compliant behaviour. Considerable planning is necessary to ensure that such a programme is effectively initiated and maintained. The following guidelines for implementing a token economy programme were determined by Burke (1992: 100):

- The programme should emphasise behaviours that are considered positive.
- Initially, learners should be rewarded for positive behaviours throughout the day.
- The amount of the reinforcement should be in direct proportion to the amount of good behaviour shown during the time period (e.g. day, week), and in relation to the backup reinforcers that are being used (e.g. extra time to play on the computer).
- Learners must be taught that tokens are valued. This can be done by allowing learners frequent opportunities to exchange them during the initial phase.
- Learners must be taught to save tokens and to wait for increasingly longer periods of time to exchange them for a backup reinforcer.
- A token economy programme has to be individualised for learners who experience barriers to learning.

20.5 CONCLUSION

Challenging behaviour in the school and classroom forms a serious barrier to learning in the present school situation. The general climate of undisciplined behaviour and the increasing aversion to the acceptance of authority in schools necessitate the urgent attention of educators and policy-makers. Teachers spend too much time dealing with disruptive behaviour. They have to be empowered to meet this challenge in such a way that the academic performance of learners is no longer adversely affected. Understanding and managing challenging behaviour by focusing on the active promotion of desirable behaviour constitutes a new way of thinking for many teachers. It is the intention of this chapter to guide teachers and education planners to rethink the way in which strategies to prevent challenging behaviour are implemented.

Questions

1. Explain in what way family circumstances can influence children's lives and how they can contribute to children showing challenging behaviour.
2. Schools can be responsible for challenging behaviour of children. Do you agree with this statement? Motivate your answer.
3. Discuss the strategies implemented in your school to prevent challenging behaviour.
4. What do you think of positive reinforcement as strategy to create positive behaviour patterns?
5. Discuss the degree of success you achieve with the types of punishment you use in your classroom.

Bibliography

- Burke, J.C. 1992. *Decreasing classroom behaviour problems*. San Diego, CA: Singular Publishing Group.
- Campbell, J. 1999. *Student discipline and classroom management*. Springfield, IL: Thomas.
- Clarizio, H.F. 1980. *Toward positive classroom discipline*. New York: Wiley.
- Department of Education. 2001. *Education White Paper 6: Special Needs Education: building an inclusive education and training system*. Pretoria: Department of Education.
- Department of Education. 2002. *Draft guidelines for the implementation of inclusive education (second draft)*. Pretoria: Department of Education.
- Edwards, C.H. 1993. *Classroom discipline and management*. New York: Macmillan.
- EGgen, P. & Kauchak, D. 1997. *Educational psychology: windows on classrooms*. Upper Saddle River, NJ: Prentice Hall.
- Farrell, P. 1995. *Children with emotional and behavioural difficulties: strategies for assessment and intervention*. Washington, DC: Palmer Press.
- Jones, K. & Charlton, T. 1996. *Overcoming learning and behaviour difficulties: partnership with pupils*. London: Routledge.
- Kapp, J.A. 1999. *Children with problems: an orthopedagogical perspective*. Pretoria: Van Schaik.
- Kounin, J. 1970. *Discipline and group management in the classroom*. New York: Holt Rinehart.
- Najman, J.M., Bor, W., Anderson, M.J., O'Callaghan, M. & Williams, G.M. 2000. Preschool children and behaviour problems. *Childhood: a Global Journal of Child Research*, 7(4): 439–466.

Prinsloo, E. 1998. Social change in South Africa: opportunity or crisis? *Society in Transition*, 29: 1–2.

Republic of South Africa. 2000. *Education in a global era*. Country paper delivered at the 14th Conference of Commonwealth Education Ministers. Canada, June 2000.

Rizzo, J.V. & Zabel, R.H. 1988. *Educating children and adolescents with behavioural disorders: an integrative approach*. Boston: Allyn & Bacon.

Royal College of Psychiatrists. 1999. *Mental health and growing up: behavioural problems and conduct disorder*. Available at: <http://www.rcpsych.ac.uk/info/mhgu/newmhgu4.htm> (accessed 20 May 2003).

Smith, M. & Misra, A. 1992. A comprehensive management system for students in regular classrooms. *Elementary School Journal* 92(3): 353–372.

Van Wyk, N. & Lemmer, E.M. 2002. *Transforming education: the South African experience*. New York: Nova Science.

Weeks, F.H. 2000. *Behaviour problems in the classroom: a model for teachers to assist learners with unmet emotional needs*. DEd thesis. Pretoria: Unisa.

Wood, J. 1991. *Adapting instruction for main-streamed at risk students*. New York: Macmillan.



Section

I

Addressing giftedness

ADDRESSING GIFTEDNESS

SHIRLEY KOKOT

Learning outcomes

After reading this chapter you should be able to

- ▶ recognise signs of gifted behaviour in learners
- ▶ relate their special needs to aspects of education and personal development
- ▶ design lesson plans and use teaching strategies to better accommodate gifted learners in the classroom
- ▶ understand how a curriculum model may be used for enrichment within a school environment
- ▶ experience a positive attitude towards gifted learners.

True democracy demands that every child, whether superior, average or inferior in ability be given the fullest opportunity to develop to the limit of his (her) mental capacity. It is the gifted child, more than any other, who has hitherto lacked this opportunity (Lewis M. Terman cited in Seagoe 1975: 80).

Key terms

giftedness ♦ acceleration ♦ enrichment ♦ teaching strategies

21.1 INTRODUCTION

The words in the above quote may have been written many years ago, but the sentiment still holds true. In the preface to his monumental work on giftedness in 1925, Terman stated:

It should go without saying that a nation's resources of intellectual talent are among the most precious it will ever have. The ori-

gin of genius, the natural laws of its development, and the environmental influence by which it may be affected for good or ill, are scientific problems of almost unequalled importance for human welfare (Terman 1925).

Through the intervening years, no one has challenged this statement and the world is as sorely in need of people with high ability now as it was 80 years ago! Problems experienced in the medical, economic, political and scientific fields await a solution from children who are still busy developing that extra something needed for great contributions to mankind.

South Africa is no exception. Yet, in spite of a worldwide consensus regarding the value of giftedness, there are still those politicians who fail to take the needs of gifted learners into account in educational policies; there are still teachers, ignorant through faulty training, who believe that there is no need to study giftedness or cater for

the gifted learner in the classroom. There are even those who still persist in regarding giftedness as an elitist concept. They need to be reminded that in terms of human rights, equal opportunity for all should not mean obstruction of opportunity for some because of diverse levels of ability (Brunault 2003). If consideration is given to learners with intellectual impairments, how can it be justified that no consideration is given to learners at the other end of the scale who have high abilities requiring specialised help? There is a danger that in the new dispensation, highly able learners may be stifled rather than be encouraged to develop their potential. Like their counterparts in other parts of the world (see, for instance, Persson 1999: 6), South African teachers seem to suffer mostly from a lack of adequate information on the needs and educational provision of gifted learners. This chapter aims at helping those who are interested in gaining insight into the gifted learner so that they, as educators or other helping professionals, may ensure that the education or help provided to these learners will allow them to become fully functioning adults who will use their gifts to the benefit of society.

In this chapter, we will first be dealing with the concept of giftedness – its meaning and identifying characteristics. Following this, we will consider the particular challenges faced by gifted learners. Finally, we offer some teaching approaches that may be used to accommodate the needs of gifted learners in an inclusive classroom.

21.2 WHAT IS “GIFTEDNESS”?

To explain giftedness, we need to describe what is necessary for a child, first of all, to show early promise and then to be able to achieve excellence in a culturally valued area of activity. Abraham Tannenbaum (1991: 89) describes the essentials of giftedness as a filigree of factors which have to be “interwoven most elegantly for a child to become truly gifted”.

A South African view of giftedness (Kokot 2000: 43–45) that recognises this view sees giftedness as dependent on the interactions between the child and the environment. Accordingly, giftedness can be explained in terms of an interrelated system.

21.2.1 Giftedness as an interrelated system

High ability is seen to be biologically rooted in the child and develops as an expression of a system of interrelated influences within the child’s inner and outer environment. This means that children may be born with the genetic potential for giftedness in one or more fields in their neurological structures, but this potential needs to be nurtured to fruition by and within children’s life-worlds.

ACTIVITY

Consider the meaning of the phrase “biologically rooted”. What does this mean?

What is meant by the “inner and outer environment”?

What is a child’s life-world?

Please read Chapter 1 regarding Bronfenbrenner’s bio-ecological approach.

The life-world is composed of a network of relationships: children form relationships with the inner self as well as with all the people, objects, concepts and other aspects of reality that constitute their environments (including home, school and social environments).

The relationships with outer reality must be of a nature and quality that challenge and foster the realisation of the giftedness within the child’s inner reality (the emotional, motivational, intellectual and physical aspects), thus creating conditions that are necessary for giftedness. But children’s relationships with the inner self must also be satisfactory to allow affirmation of their abilities in their relationships with outer reality; hence the critical interaction. Figure 21.1 represents this view.

When children are born, a biological potential for giftedness may exist. Relationships with people, ideas, objects and the self begin to influence their emotional, intellectual, motivational and physical aspects. These interactions (which are in turn influenced by further networks of relationships within the broader context) must create the conditions needed within these aspects to fan and nurture the biological spark of giftedness. In

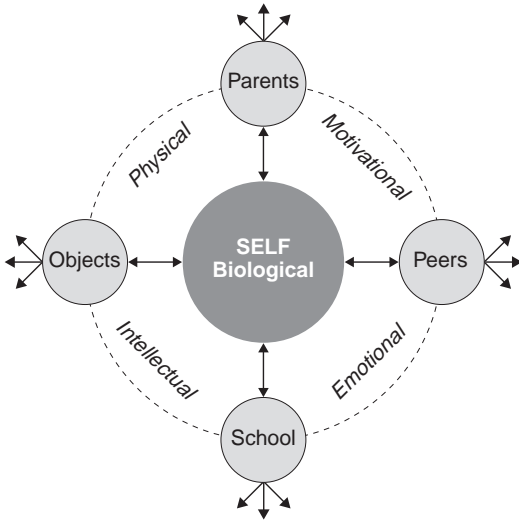


Figure 21.1 An ecosystemic view of giftedness

return, this giftedness will express itself in and influence the aforementioned relationships.

Conditions that are necessary for giftedness are found within the aspects that make up the child's total self. The potential for developing these conditions lies within the biological structure of the brain, but they are created and nurtured by the child's relationship formation. At least some of the conditions must be present in each of the aspects of self for giftedness to be realised. Some of these conditions relevant to aspects of the child are briefly discussed as follows:

- **Emotional.** This aspect refers to those emotional factors that are needed for the emergence of giftedness, including confidence, self-awareness, courage, perseverance, security, sensitivity, intensity, energy and so on.
- **Motivational.** Conditions here include a will to be involved, the motivation towards self-actualisation and commitment to tasks; an interest in the meta-needs of society (moral issues, justice, truth); a willingness to be open to experiences as well as religious beliefs.
- **Intellectual.** This refers to the ability to understand and integrate information from the environment and to use such knowledge to produce or create new information, either in terms of general abilities or in specific fields. This

aspect may thus develop a high academic ability or a high ability in one or more specialised areas.

- **Physical.** Good health and correct nutrition are important if the child is to develop giftedness. Integration between body and mind can develop high levels of physical ability in some or other area, for instance athletic or sporting ability, dancing or ballet, or a particular dexterity in hand-eye coordination.

The relationships that are considered to be important for the development of all children and equally important for the realisation of giftedness in potentially able children are the following:

- **Relationships with significant people.** These include firstly the child's caregivers and family members who satisfy basic needs, create an enriched environment and serve as role models. The presence and attitude of peers both in and out of the classroom is important, as is the interaction with teachers. It is by meeting their needs within these relationships that children develop emotional and motivational conditions necessary for giftedness to emerge.
- **Relationships with school, concepts and other resources.** The quality of education and the stimulation and encouragement of curiosity foster sound relationships with the world of ideas. Access to cultural resources such as museums and libraries are also important to the developing child. No child can form a relationship with the written language without access to books.
- **Relationships with objects.** These include all the objects in the world including pens, paint-brushes, computers and soccer balls. Many a young gifted child with a highly developed intellectual ability has been emotionally affected by an inability to perform adequately on the sports field. For this reason, one has to take note of the child's relationships with the "hardware".
- **Relationship with self.** Realising the potential for giftedness takes courage, perseverance and confidence, among other personal qualities. The development of these qualities depends on

a sound relationship with self which is characterised by an ever-increasing realistic knowledge and acceptance of the self. Children who have a positive self-relationship will tell themselves that they can achieve.

This view highlights why it is impossible to prescribe a formula for giftedness because so many variables exist within, firstly, the child and secondly, within so many relationships that will be formed. It does offer a framework for understanding gifted learners as they are in their personal realities and also for understanding why learners who show the potential for giftedness may not be able to realise that potential.

21.2.2 A definition of giftedness as an interrelated system

On the basis of the view given above, giftedness can be defined as an inherent potential, latent or realised, for extraordinary achievement in one or more areas that have value for a specific culture. The realisation of this potential is dependent on the nature and quality of the individual's relationships with aspects of reality in the home, school, society and the self throughout the lifespan.

ACTIVITY

Before reading further, write down your ideas of what giftedness is. Does it only refer, for example, to learners who are exceptionally good in mathematics or who are talented in music?

21.2.3 Characteristics of giftedness

There is a fine line between being an intelligent, capable human being (as is the majority of the population) and one with really high potential that we call giftedness. Because the potential for giftedness has to do with a quick rate of development, it helps to compare the mental development of possibly more advanced children with what is considered "normal" for a particular age.

Early use of advanced vocabulary

Early language development is a very reliable sign of developing high potential. Many gifted children

begin communicating with words long before their first birthday. Of course, not all gifted children are verbal or show early use of language.

Keen observation and curiosity

A potentially gifted child may ask questions that are unusual (e.g. What makes sticky tape sticky on one side and smooth on the other?). They also ask many searching questions about topics in which young children do not ordinarily have an interest. A gifted child will also observe details. At a very young age, the child might remember where all the toys go on a shelf and replace everything correctly.

Retention of a variety of information

Gifted children amaze parents and teachers by recalling details of past experiences. At two-and-a-half, Obed, when being instructed why streets were dangerous, remembered a parade he had watched six months previously and said those people should not have been walking in the street.

Periods of intense concentration

A potentially gifted one-year-old might sit for five minutes or more listening attentively to a story being read to an older sibling. Older gifted children can become engrossed in a project, totally oblivious of the events happening around them.

Ability to understand complex concepts, perceive relationships and think abstractly

Although an average four-year-old looks through a picture book of baby and mother animals with interest, a gifted four-year-old is more likely to observe concepts such as how much animal mothers and babies look alike except that the baby is smaller. If a Grade 5 class had to write a story about what it is like to be poor, most of them would comment on the concrete issues, such as hunger, not having enough money, and so on. A gifted child may tend to view the problem more abstractly and might write: "Being poor would only be a problem if others were not poor. If everyone else also had very little money, then we would all have less to spend and things would be cheaper."

A broad and changing spectrum of interests

Gifted children often show an intense interest in a subject (perhaps dinosaurs) one month, then turn to a totally different subject (racing cars, for instance) the next.

Strong critical thinking skills and self-criticism

Gifted children evaluate themselves and others. They notice discrepancies between what people say and what they do. They can be very disappointed if their parents or teachers fail to carry through on their promises. They can also be very critical of themselves.

To summarise, the characteristics most frequently seen in young gifted children are as follows:

- unusual alertness during infancy
- long attention span
- high activity level
- less need for sleep
- advanced development through milestones
- keen powers of observation
- extreme curiosity
- excellent memory
- early and excellent vocabulary development
- rapid learning ability
- abstract reasoning
- sensitivity
- perfectionism
- advanced ability to play with puzzles, mazes or numbers

21.2.4 The two-sided coin

It is worth remembering that gifted children do not always show positive characteristics. Sometimes it is hard to be gifted and the very potential these children possess may manifest itself in less acceptable ways – especially if needs are not met at school or in the home. Table 21.1 shows some positive characteristics with the possible negative consequences of those characteristics on the opposite side. The negative ones are very often seen and in fact eclipse the special abilities –

especially in educational and other settings that do not understand giftedness and so fail to give the child the necessary support.

Table 21.1 The two sides of the coin

Positive	Negative
Learning comes easily	Develops carelessness; is lazy; omits details; resists guidance
Has abstract reasoning abilities	Tends to pseudo-intellectualise; makes excuses; loses contact with reality
Has a questioning attitude and critical thinking skills	Is impatient and critical of others; being “different” creates peer problems
Has the ability to work independently; has unique ideas	Can become an elitist, misfit or a nonconformist
Possesses a keen sense of humour	Can be sarcastic to the point of cruelty
Has a good memory; is strong in analysing and synthesising	Dislikes routine or drill; is unwilling to get down to tasks; easily becomes bored
Displays good task commitment; is goal directed	Is stubborn; often refuses to change direction
Has a variety of interests	Interests can take a single, narrow and inflexible path; is uninterested in all else
Is eager and alert; has high energy levels	Is frustrated when things do not go own way
Is sensitive and empathic	Has a fragile ego; displays extreme sensitivity to criticism

One of the greatest misconceptions that interferes with our provision for the needs of high ability or gifted learners is that they will make it on their own. A typical comment overheard by many is “They’re so clever they can learn the work by themselves – why must they distract the teacher from helping those learners who struggle to understand? Let them help the teacher and contribute by supporting those who are less able.” Indeed, many case studies can be used to show how this attitude, coupled with an inadequate and unchallenging school curriculum and emotional difficulties can all but extinguish the spark

of potential excellence in individuals. It can also cause severe stress, as the following story illustrates:

Our son suffered tummy aches all through Grade 4. The school wouldn't listen to our pleas for more enriched work or at least a change from a fairly average class to one containing a few children who could challenge or at least work with ours (and whose teacher would possibly listen to us). His role in class was that of "junior teacher" and he was expected to help the weaker children for most of the time. In desperation, the doctor eventually operated and when he removed a perfectly healthy appendix, we knew that the school would have to get our message loud and clear. We insisted on a change, and got it. That was the end of the tummy aches. We learned the hard way about the effect of boredom and frustration on a gifted child.

The following will consider some of the special challenges that gifted learners face in the light of their needs.

21.3 UNIQUE NEEDS OF GIFTED LEARNERS

Gifted individuals are identifiable by their exceptional competency in some area of ability or performance. It is this unusual quality or area of talent that makes them different from others. The key to understanding giftedness lies in understanding the unusual, extraordinary nature of gifted behaviour, whether it be exceptional creativity, musical talent, leadership qualities, sporting ability or intellectual reasoning ability. Being gifted means being different from others with respect to the particular area of talent.

It is possibly the "differentness" inherent in the nature of giftedness that causes gifted children to face certain difficulties, particularly in social and emotional development. The differences make them vulnerable to problems resulting, *inter alia*, from myths surrounding giftedness, unrealistic expectations regarding their behaviour, pressure to perform and/or conform, constant criticism or praise, and difficulty finding friends. The greater the degree of giftedness, the greater the differ-

ence from the norm, so it is the exceptionally gifted child who in particular may face problems in coping with psychological conflict or stress.

It would be wrong to suggest that all gifted children have problems. Most of these children find effective ways of coping with any problems with very little negative effect. You will find many studies that show gifted children as making good social adjustment and having healthy, positive self-concepts. It is also true that a nurturing, supportive environment at home and at school will enhance and facilitate the gifted child's total development. It is with this goal in mind that an understanding of the possible areas of emotional vulnerability and stress are required by the adult to help the child's development of self-knowledge, and sound interpersonal and other relationships.

21.3.1 Characteristics as a source of problems

Sensitivity

The emotional supersensitivity that we mentioned in section 21.2 and the intensity of feeling that accompanies it is one cause of the problems gifted children experience. Kline and Meckstroth (in Kokot 2000: 183) write:

What is passed over as trivial by others may be the cause for severe emotional response. Parents say: "He's always been so old, old, old"; "I just wish he weren't so sensitive"; "She understands other children, but they don't understand her"; "He's eight years old and it's as if he has the weight of the world on his shoulders."

Sensitive, compassionate gifted children may show a great amount of empathy. This is not merely knowing what others feel, but actually feeling like the person themselves. So whereas most children know when a parent is angry, sensitive gifted children feel the anger inside themselves. They are sensitive to others' being hurt, to injustice and also to criticism and pain. Sensitivity can be a sense of identification with other people, animals, nature and the universe by being able to associate on a deep level with the things that make up the world.

Kate, aged 7, being a gifted child with great compassion and intuition, regularly rescues bees with broken wings or other injuries and brings them into the house for rest. Strangely, she has almost never been stung. When asked to verify this statement she answered: "A bee only stung me once but he was in great pain and had to blame me for it."

Like supersensitivity, other characteristics of giftedness are the source of many problems. Some of these, in conjunction with their attendant problems, may be discussed so that it is easier to understand why gifted children have unique needs.

Perfectionism

Some gifted children are perfectionists, others are idealists. Perfectionism is the conflict between "what is" and "what ought to be". In these terms, it is a positive quality – an energy or a striving for something better that drives the individual towards a higher level of functioning or development. It is perfectionism that is responsible for humanity's progress, so we should not want to "cure" children of this. However, it certainly is not easy to live with, and children need help in using this trait to their advantage, rather than considering it a negative thing that one uses to berate oneself for futile attempts or past mistakes.

Some strategies for helping a perfectionist learner include the following:

- Help to set priorities.
- Help to set reasonable and reachable expectations.
- Refrain from criticism.
- Show that your caring or interest has nothing to do with performance.
- Create a safe environment where effort is more important than winning or losing.
- Focus on strengths and successes.
- Help to set goals (or plan rewards) that do not require perfection.

Values and morals

The values and attitudes of the gifted child can deviate from the norm. The moral concerns of

gifted children are important indications of advanced development, yet may cause problems for such children. At a much earlier age than their peers, these children seem to be less self-centred and become troubled over problems of morality, religion and world peace. Interest in problems in their societies is common in even very young, foundation-phase learners.

Perceptiveness

Related to their rapid moral development is the characteristic of perceptiveness. This means that several points of view may be understood simultaneously; the core of an issue may be quickly perceived. In interpersonal situations, such perceptiveness helps gifted children see beyond the superficiality of a situation to the person beneath. It is commonly called *insight* and allows such children to quickly assess people and situations. In fact, they are skilled at sensing the difference between social facades and real thoughts and feelings.

Such perceptiveness gives rise to certain values in gifted individuals: they recognise and need truth, justice and fairness and these become issues to them. They clearly see the unfairness in the way people are treated and sometimes the idea of showing different "faces" to the world is puzzling to them. These children regard truth as an absolute and both look for and tell the truth – sometimes with devastating results. This shows at an early age: sometimes it seems as if a gifted child's first words are "it's not fair". This is in response to injustices to themselves and others that they notice when still very young. This keen sense of injustice inevitably leads to the questioning of rules and authority figures. Adults can help in this regard by discussing issues about the concept of fairness. Often books, films and real-life situations with this as a theme can be shared. Ask such children: "When is mercy more appropriate than justice?" When younger children cry: "It's not fair", try to introduce the idea of other people being involved. Ask the child: "Is what you want fair for yourself only, or is it fair for everyone involved?" Gifted children have the advanced reasoning ability to cope with discussions about global interdependence and the need for cooperation to replace competition in order for planet

earth to survive. Children who must win every argument and who are threatened unless they are right all the time are displaying the signs of a low self-concept. Some counselling may be needed to get to the bottom of the problem.

Questioning authority

Following on the previous paragraph, perhaps more should be said about the gifted child's tendency to question authority – even in cultural groups that strongly discourage this. Most inquisitive children question everything. Questioning and arguing are forms of mental exercise for gifted children that they engage in for pure pleasure, for learning purposes or simply to win a point. Children with devastating logic and highly developed intuition are simply born to argue, and usually win. Often, highly intuitive children will play devil's advocate and argue an opposing point of view merely to hear the other person's rationale. These children can be very intimidating to others. If they have underdeveloped emotional sensitivity they may be highly competitive and too bent on winning at all costs. Their argumentative and verbally aggressive skills need to be tempered with understanding of other people's feelings and reactions to their argumentativeness.

Imagination

Highly imaginative children tend to fantasise. This can be interpreted as daydreaming, immaturity and laziness.

Need for self-expression

A facet of gifted children that makes them vulnerable to stress is their need for creative self-expression. Gifted people need psychological freedom to express themselves in the world: they need the opportunity to perform brilliantly and to experience success. Often they tend to organise, control, challenge, manage, correct or otherwise improve other people, who do not appreciate this behaviour. The response is often one of rigid expectations, work constraints, stifled self-expression and demands for conformity. These are "stressors" that will impact on social and emotional development.

Vulnerability to stress

Gifted children are as susceptible to stress as anyone else is – in fact, because of their uneven development, sensitivity and perfectionism, they may be even more vulnerable. In extreme cases stress has even led to ideas of and attempts at suicide. Some common stressors associated with giftedness are loneliness, feeling the need to hide abilities in order to be accepted, excessively high standards and academic pressure. Extreme emotional intensity and a tendency to become easily over-stimulated help to make life stressful for these children.

Another important source of stress in the lives of many gifted children is that they are often asked to make decisions that are simply beyond their capabilities. This is perhaps because of the "mental age" trap. Adults expect that children can make difficult decisions because of their excellent reasoning abilities. These advanced abilities are of no help in weighing emotions, and if children are given choices beyond their maturity they may react with avoidance, confusion and anxiety. In this case, the solution is to allow the child to be part of the decision-making process but to carefully guide the child towards a healthy decision.

21.3.2 Relationships as a source of problems

21.3.2.1 The relationship with peers

Gifted children do not always feel superior to their peers. Because giftedness enables children to realise the consequences of behaviour, they are often over-careful and this may lead to despondency and doubt. In turn, this results in a lack of self-assurance, especially in the face of more careless and daring peers. Gifted children may also lack practical ability or physical prowess and this can also lead to feelings of inferiority. Such feelings affect relationships negatively. To compensate, some children apply themselves exclusively to their particular area of giftedness and withdraw from social interaction.

When exceptionally gifted children become aware that other people do not perceive or even experience the world as they do, they find their isolation intensified. Some of the more frequently reported social problems are

- social isolation (lack of true peers)
- bullying by older classmates
- play interests that cannot be shared
- few peers with whom to share interests
- great dependence on parents for companionship
- high expectations from others
- hostility from others towards their abilities.

However, many gifted children have wide circles of friends and are generally popular – particularly if they are extroverted and have had the chance to develop good social skills. Their imaginations make them fascinating playmates who are never at a loss for new games or pranks, and their sensitivity means that they know how to make sure others are included in the game.

The social needs that have been identified with regard to peers are as follows (Steinberg 1996):

- The need to accept the abilities, interests and shortcomings of others and to be able to communicate with others.
- The need to work independently, which causes them to fail to respond positively to interests or enterprises of their peers. They need to be helped to strike a balance between their own activities and constructive interaction with others. On the other hand, constant group work where they are forced always to “pool” their efforts is not recommended.
- The need for help in forming appropriate social relationships. This does not mean that they should be pressurised into spending most of their time with chronological peers. Gifted children typically choose friends who are similar in mental or developmental age. Their peer groups may consist of same-aged peers with whom they skateboard, for example, as well as older groups with whom they share an intellectual interest that cannot be shared with younger peers.
- The need for social skills. They should be helped to understand the differences between cooperation and competition and when each may be appropriate. They need to learn the art of compromise and to adapt successfully in varying situations.

21.3.2.2 The relationship with self

In terms of emotional need, gifted children need marked amounts of acceptance and approval as *people*. Too often, their feelings of self-worth are tied up with accomplishments, performances or products. Damage to the self-concept can happen if learners feel that others value them only because they are clever, get good reports or perform well. Gifted learners may sometimes wonder if they will be loved if they stop achieving.

The following have been identified as needs in this relationship area:

- **The need to know and accept themselves.** This includes knowing their abilities, interests, personality traits and shortcomings.
- **The need to understand their own feelings.** Gifted learners should know their similarities to and differences from other people and feel pride in their abilities rather than guilt or anxiety. Too often gifted learners have been known to blame themselves for being different.
- **The need to assert own needs and feelings non-defensively.** It would be pointless if gifted learners were to be helped to know themselves if they are denied the right to express their personal needs. The community should recognise and respect their special needs.
- **The need to acquire appropriate values.** Gifted learners search intensively for information, knowledge, understanding, beauty, truth, reason, meaning and so on. This quest may result in disillusionment and rebellion against the established norms and values of society which are not always practised as professed.
- **The need to remain a child.** Gifted learners are no less children than others and should be given every opportunity to enjoy their childhood. They are entitled to do childlike things.
- **The need for appropriate identification figures.** Gifted learners sometimes have difficulty in finding suitable role models. Mentors can be of great help here.

21.3.2.3 The relationship with parents and teachers

The advanced abilities of particularly intellectual-gifted children enable them to evaluate their

parents, other family members and teachers sooner than the average child does. At an early stage they identify parental weaknesses and incongruities and notice irrational, hypocritical and discriminatory behaviour. If parents notice outstanding intellectual potential in their child, they have a tremendous responsibility to behave in such a way that the child can identify with them and be helped to understand the reasons behind perceived incorrect behaviour.

A major problem in the education of many gifted learners is inadequate parental interest, or an indifferent and passive attitude to suitable stimulation of their gifted child's abilities. Sometimes the behaviour of parents is ambiguous. They are proud of their child's abilities but may either over- or underestimate their value and potential. Either way, this can be a cause of stress in the child.

Some teachers feel inferior in the presence of a highly intelligent child. They are often reluctant to provide cooperation and guidance, and even humiliate the child in front of others. The result is that the child may withdraw into his shell and prefer to be "like the others" to avoid being singled out.

Parents and/or teachers who may feel threatened by such children should keep the following in mind:

- Your maturity and experience of life should enable you to cope with gifted children's apparently superior intellectual abilities. Your professional training, reading and study should also give you the confidence and competence you need.
- If you know the characteristics listed, you can be the one to identify the gifted learner through your observation and thus you are very important to these learners.
- One of the barriers to learners' intellectual growth in our schools is not the problem of equipment and organisations but rather the reluctance of teachers to "let their learners go".
- Poor families and school communities can also adapt to the presence of a gifted child. A wealth of knowledge, information and enrichment can be found in old newspapers and even old magazines. Challenges, wonder, mystery and stimu-

lation can be found in, for example, a beetle, a stone, a leaf or a seed.

- If gifted learners challenge you because of a mistake you may have made, admit your error and thank them for their correction.
- Insist on their completing the basic work in the curriculum correctly, otherwise they will be handicapped if they are given enrichment programmes or accelerated.
- Avoid over-concentration on a gifted child or learner to the detriment of siblings or classmates. Gifted learners should not be treated in an entirely different and obvious way from the way other children or learners are treated.
- Pressure should not be put on the gifted learner to further the ends of adults, e.g. high academic success or sporting achievement for the glory of the school or family.
- Organise material for enrichment projects and use the learners' own suggestions.
- If they ask questions you cannot answer, endeavour to find the answers together or encourage them to find out for themselves. They may then be asked to give the class a talk on what they have discovered.
- Provide many opportunities for creative work and the development of their special abilities – e.g. working independently in the library, art room or any place available – and encourage them to submit a report on their work.
- Provide opportunities and time for them to talk and discuss their problems and questions with an interested adult. One of the greatest needs of gifted children and learners is the need for someone who really listens with understanding.

21.3.2.4 The relationship with schoolwork

The special giftedness shown by intellectually and specifically gifted learners in the academic sphere indicate the following needs:

- **The need to explore, discover and create.** They need time to express their interests in practice and even to daydream productively. They may constantly be asking questions, querying answers and perhaps deviating from prescribed

lines of thinking and behaviour. This may tend to be irritating to teachers and parents.

- **The need for greater latitude for self-actualisation.** Gifted learners have a greater potential for development than average learners. This has implications for their schooling as well as in other areas.
- **The need to be challenged.** Gifted learners may find that their work does not challenge them to mobilise their full potential. This may result in a negative attitude towards schoolwork. Gifted learners need to be confronted with subject matter and learning content that present a real challenge. Forcing them to conform to the standard of a group is not recommended.
- **The need for skills development.** Gifted learners, if lacking challenge and practice in self-discipline, may become unmotivated in their approach to academic work. Consequently, when they eventually face a challenging academic situation, many do not have the study skills needed to cope with the challenge. Secondly, because gifted learners have to make many more choices in life than average individuals because of their varied abilities coupled with strong and versatile interest patterns, they need the skills of decision making early in life. Thirdly, some gifted learners need help in becoming skilled at taking tests so that they can demonstrate their abilities in educational testing situations.
- **The need for early identification.** The earlier giftedness is recognised in children, the sooner their particular needs will be recognised. Teachers, particularly at early childhood learning centres and in the foundation phase, should be very alert to signs of giftedness.

In the light of the characteristics and accompanying needs of gifted children, it is now necessary to look briefly at a few examples of classroom strategies and school adjustments that may be made to accommodate their special needs.

21.4 APPROPRIATE WAYS OF TEACHING THE GIFTED LEARNER

In this section, we focus on the planning and practice of classroom programmes.

ACTIVITY

The new National Curriculum is an outcomes-based system of education. It stresses the need to allow all learners to progress at their own pace. Consider the following questions.

When you were at school, what did teachers do to encourage the abilities of the “really clever” learners?

What resources does your education department have to help teachers who may have gifted learners in their classrooms?

How would you plan to accommodate the needs of a gifted learner in your classroom?

21.4.1 Teaching strategies for gifted learners

Two possible ways of coping with gifted learners in the classroom is to use **acceleration** or **enrichment** strategies.

Acceleration means that a learner moves through lower levels or sections of the standard curriculum at a faster rate than age-matched peers. It is probably the cheapest and simplest form of curriculum provision for able learners.

Acceleration thus enables learners to acquire basic knowledge quickly and to progress rapidly to higher levels of abstraction and creative problem solving. Nevertheless, acceleration is a contentious issue. Some arguments in its favour are its motivating power – the fact that it counteracts passivity and offers the learner an opportunity for earlier professional training and entry into a career. Arguments against acceleration are that it may disrupt a learner’s social adjustment and promote a one-sided academic development. One of the chief objections to acceleration is the fact that when the progress of gifted learners is speeded up, they simply receive more advanced tuition (meant for older learners) instead of receiving appropriate curriculum development for the particular needs of gifted learners (a research, problem-solving orientation). In this way, acceleration makes for quantitative rather than qualitative learner differentiation – with some possibly serious problems in socialisation skills and development.

Enrichment means supplementing the ordinary curriculum by means of activities that afford the learner an opportunity to broaden as well as deepen knowledge in a given field or learning area, for example by means of doing a project or doing investigations/problem solving. This involves more than just a broadening or deepening of knowledge – there is also the matter of *how* knowledge is acquired by means of research. In short, *good acceleration should be enriching, and good enrichment accelerating!*

ACTIVITY

Having read the above description of enrichment and acceleration, which approach do you think would be most successfully implemented in South African schools? What problems are associated with enrichment? Do you think it is easy to offer a gifted learner enrichment in a “normal” school environment? Can enrichment be accommodated within the framework of OBE?

One teaching strategy that is used in all classrooms, but can also be used to challenge the abilities of gifted learners, is that of direct instruction.

Direct instruction as enrichment

Direct instruction is sometimes referred to as teacher “chalk and talk”. It is a teacher-centred approach to instruction where the teacher delivers content in a structured way, directing the activities of the learners and maintaining a focus on academic content. The teacher’s focus should be on facilitating the learners’ understanding and development of thinking skills. It should never deteriorate into a process which requires learners to merely memorise and reproduce. One way of ensuring this is to use Bloom’s taxonomy in lesson planning.

Benjamin Bloom’s *Taxonomy of cognitive objectives* (1954) is still a very useful framework for ensuring that gifted learners are stimulated and challenged in the classroom. Bloom’s taxonomy includes six levels: recall, understanding, application, analysis, synthesis and evaluation.

The major idea of the taxonomy is that learning outcomes can be arranged in a hierarchy from less to more complex. When we address higher-level cognitive outcomes in worksheets, to get away from simple recall and low-level understanding of concepts we emphasise the ability to apply and synthesise knowledge to complex problems. This suits gifted learners very well.

The taxonomy is presented in Table 21.2 with sample verbs for each level that can help you to know that you are indeed implementing the model as outlined by Bloom. It is clear that learners can “know” about a topic, subject or learning area at different levels. While most teacher-made tests still test at the lower levels of the taxonomy, research has shown that learners remember more when they have learned to handle the topic at the higher levels of the taxonomy. Thus this is not an exercise purely for gifted learners. All learners should be helped to acquire higher-level thinking. The skill is to use questions that promote ability to think at each level – and not to limit questions to the three lower levels (as many educators tend to do!).

In Table 21.3 we see how Bloom’s taxonomy can be applied to a classroom in the foundation phase that includes gifted learners. We will use the story of *Goldilocks and the three bears* as an example.

ACTIVITY

Take a critical look at a recent question paper or worksheet that you have set for your class (or has been set for a child you know). Which levels of Bloom’s taxonomy are covered by the questions and/or tasks? Which levels are left out?

21.4.2 A curriculum development model for gifted learners

Over the last number of years, curriculum development for gifted learners has progressed to a multiplicity of approaches. The one we have chosen to include here is an example of several that have been recommended for gifted learners, but one which is widely used in schools across the world. It can be implemented effectively in an inclusive school environment.

Table 21.2 Bloom's taxonomy of cognitive objectives

Level	Definition	Sample verbs
Knowledge	Learner recalls or recognises information, ideas and principles in the approximate form in which they were learned	write; list; label; name; state; define; match; outline
Comprehension	Learner translates, comprehends or interprets information based on prior learning	explain; summarise; paraphrase; describe; illustrate
Application	Learner selects, transfers and uses data and principles to complete a problem or task with a minimum of direction	use; compute; solve; demonstrate; apply; construct
Analysis	Learner distinguishes, classifies and relates the assumptions, hypotheses, evidence or structure of a statement or question.	analyse; categorise; compare; contrast; separate; examine
Synthesis	Learner originates, integrates and combines ideas into a product, plan or proposal that is new to him	create; design; invent; hypothesise; develop; formulate; plan
Evaluation	Learner appraises, assesses or critiques on a basis of specific standards and criteria	use; judge; criticise; recommend; argue; justify; assess

Source: Bloom (1954)

Renzulli's Enrichment Triad Model or Schoolwide Enrichment Model

Renzulli's ideas on teaching gifted learners are in line with the principles of problem solving. According to his Enrichment Triad, the role of the learner is transferred from that of an *exercise-doer* to that of a *first-hand inquirer* (Renzulli 1986: 24).

The Enrichment Triad (see Figure 21.2) provides for three types of giftedness and three levels (or types) of enrichment. The first two types comprise general exploratory activities and group skills training for all learners in a group (class). These two types of enrichment are of crucial importance for the gifted learner, since they stim-

Table 21.3 Applying Bloom's taxonomy to a theme

Knowledge	The recall of specific information. Who was Goldilocks? Where did she live? With whom? What did her mother tell her not to do?
Comprehension	An understanding of what was read. This story was about..... (topic) The story tells us..... (main idea). Why didn't her mother want her to go to the forest? What did Goldilocks look like? What kind of girl was she?
Application	The converting of abstract content to concrete situations. How were the bears like real people? Draw a picture of what the bears' house looked like. Show through action how Goldilocks sat in the chairs, ate the porridge, etc.
Analysis	The comparison and contrast of the content to personal experiences. How did each bear react to what Goldilocks did? How would you react? Compare Goldilocks to any friend. Do you know any animals that act human?
Synthesis	The organisation of thoughts, ideas and information from the content. List the events of the story in sequence. Do you know any other stories about little girls or boys who escaped from danger? Make a puppet of one of the characters. Using the puppet, act out his/her part of the story.
Evaluation	The judgement and evaluation of characters, actions, outcome, etc. for personal reflection and understanding. Why were the bears angry with Goldilocks? What do you think she learned by going into that house? Do you think she will listen to her mother's warnings in the future? Why? Do you think this really happened to Goldilocks? Why? Why has this story been told to children for many, many years?

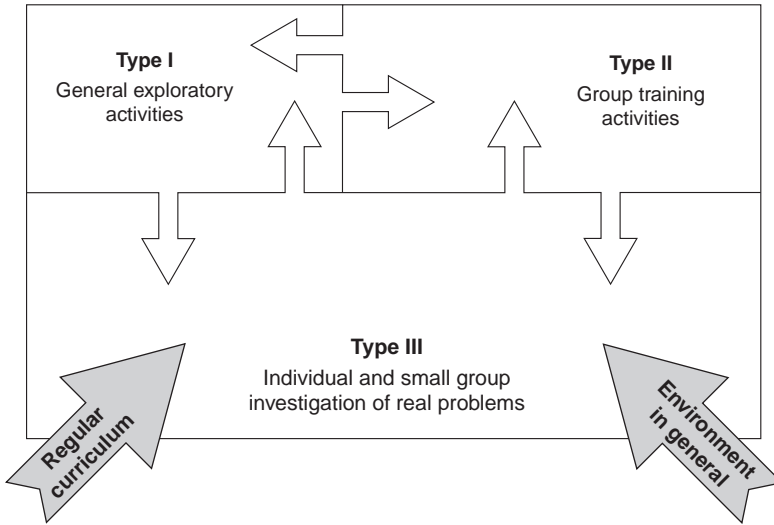


Figure 21.2 The Enrichment Triad

ulate interest and promote specific processes of thinking and feeling with a view to the third type of enrichment: the investigation of actual problems.

Type I enrichment: general exploratory activities

General exploratory activities are intended to expose learners to various learning areas or topics in which they may develop an interest. The choice of source material is crucial to the success of Type I activities, as the material is intended not as an information source, but rather as a stimulus towards research in a particular area of interest. Renzulli gives the following guidelines for Type I enrichment: firstly, learners should be thoroughly aware that they are expected to be purposeful in their exploratory activities so as to analyse their experiences and submit proposals for the study of specific themes or topics within a given period of time. Secondly, a variety of strategies may be used to expose learners to a whole range of subjects and learning areas from which they can select research problems.

A few examples of how learner interest can be stimulated are provided:

- Interest centres, exhibitions, libraries or bookshops containing books, magazines, slides, cassettes, models and the like

- Field study tours where learners become actively involved in certain subjects
- Inviting experts (writers, artists, sculptors, specialists) to address the learners, or visiting experts or professional people
- Brainstorming sessions about appropriate subjects

During the exploratory activities it is the teacher's role to assist learners in formulating solvable problems in relation to the learning areas and specific interest areas. The teacher also has to help learners to structure their investigations and to take note of the specialised materials or skills needed to conduct such investigations. Type I activities thus provide a logical prelude to the next stages of the enrichment programme.

Type II enrichment: group training activities

The second phase of Renzulli's Triad is a process activity as it involves teaching–learning activities which centre on the stimulation of higher-order thinking and feeling processes and skills. Such enrichment consists mainly of exercises enabling learners to assimilate subject matter and to resolve the problems inherent in it. It also involves exercises to stimulate critical and divergent thinking and enhance problem solving, analytical, synthetic and hypothesising skills; and

comparative and productive thinking. Techniques such as brainstorming are used to enhance fluency of ideas, flexibility, originality and other appropriate thinking and feeling skills.

Since such activities are oriented towards skills; the emphasis is on skills training, rather than on content. Thus learners learn to handle new problems and situations, having mastered general strategies for solving problems spanning a variety of learning areas. It should be remembered that Type II activities are not an end in themselves: they are there to prepare for Type III enrichment – the solution of actual problems. The following cognitive and affective processes are, for instance, included in Type II enrichment: brainstorming, observation, classification, interpretation, analysis, evaluation, comparison, categorisation, synthesis, fluency, flexibility, originality, elaboration, hypothesising, awareness, appreciation, value clarification and commitment.

These activities are fully in line with the National Curriculum as they represent process-oriented activities which provide learners with advanced problem-solving skills.

Type III enrichment: individual and cooperative problem solving

At the heart of Type III enrichment is the fact that gifted learners are trained in methods of inquiry. The emphasis is on innovation in learning. Rather than have gifted learners discover a predetermined solution or an already discovered method, they are expected to find their own answers in their own individual ways. This phase of the Triad thus involves the investigation of real problems by appropriate methods. Learners study theoretical structures, examine raw data and discover generalisations in their chosen learning areas. Only a few learners (the gifted) will reach the third level of the Triad, which involves finding the problem, formulating the problem, analysing the problem, applying research methods and formulating specific deductions. Teachers can help learners find appropriate ways of communicating project outcomes to audiences that understand, appreciate and react critically to these products. The teacher's role in Type III enrichment is thus mainly that of a facilitator of learning.

Renzulli indicates that firsthand inquirers have

a concern for the outcomes of their studies. Their work is often directed at some kind of product, and this attitude towards a problem situation may be regarded as the essential difference between the scientist, who discovers areas of inquiry, and the technician, who deals with presented areas of inquiry.

Although this model has been used effectively in many schools throughout the world, it does present organisational problems for schools. Critics say that the focus of this model creates confusion around the curricular scope and sequence of learning at all levels of instruction. Another concern is that basic content and skills can be undervalued in a learning area. A learner first needs to master the basics of the learning area before progressing to doing research in that learning area. The model (at the elementary level) also tends to devalue core content elements, and to overvalue independent learning strategies at that stage of development. Nevertheless, it is greatly favoured (especially in the natural sciences) as a learner-centred, hands-on, inquiry-based process of problem solving, as learners are actively involved in the process of constructing knowledge. Because investigation is emphasised, this model is clearly in line with the tenets of outcomes-based education. Teachers should, however, always be sure that the learners have mastered the basic core content and skills in an area before proceeding to problem solving.

ACTIVITY

To help you to relate this model to your work as a teacher, think of a group of children and plan a project on the basis of the Enrichment Triad.

Decide on

- the particular theme or issue that you will focus on
- the curriculum outcome that you will address
- how you will assess which issue will form the first, second and third phases of the Triad
- appropriate activities for each stage of the Triad
- resource materials or teaching aids to support the learners who participate in each stage.

21.5 CONCLUSION

The success of any teaching situation depends largely on the personality of the teacher. Teachers may have the most brilliant qualifications, the best aids at their disposal and the most intelligent learners in their classes, but in the final analysis it is the personal relationship between learners and teacher that counts.

Gifted learners do not necessarily require gifted teachers, just as Olympic sportsmen do not require Olympic medallists as their coaches. Although their teacher should be the same kind of bright, curious, enthusiastic person that they are, the teacher need not be intellectually gifted. What is required is a teacher who grasps the fact that the gifted are different and who understands their special talents and problems.

It is very important that teacher training courses expand their programmes concerning gifted learners. Plunkett (Vialle & Geake 2002: 242) reminds us that “[t]eachers not trained in gifted education tend to be more apathetic and even hostile toward gifted students”. Inclusion of gifted learners within the diverse school population does not mean avoiding or ignoring their needs. The *Education White Paper 6* of the Department of Education (2001) echoes Montgomery (2000: 127) with the statement that inclusive education does not help the learner adapt to meet the needs of the school but rather adapts the school to meet the needs of the learner. With better understanding and the knowledge and skills needed to make the necessary curriculum adjustment, teachers may avoid the trap of neglecting or damaging our most able and potentially valuable citizens of the future.

Questions

1. How would you define giftedness to a fellow teacher or parent?
2. Why is it believed worldwide that gifted learners have special educational, social and emotional needs?
3. What techniques are available to accommodate gifted learners in an inclusive classroom?

Bibliography

- Betts, G.T. & Hoover, M.J. 1995. Encouraging lifelong learning through the autonomous learner model. In Gen-shaft, J.L., Birely, M. & Hollinger, C.L. (Eds), *Serving gifted and talented students*. Austin, TX: Pro-Ed, 135–154.
- Bloom, B.S. 1954. *Taxonomy of educational objectives: the classification of educational goals. Handbook 1: cognitive domain*. New York: McKay.
- Brunault, J. 2003. *Gifted children and human rights: collaboration with the Council of Europe*. Paper presented at the 15th World Conference of the World Council for Gifted and Talented Children. Adelaide, Australia, 1–5 August.
- Csikszentmihalyi, M. 1993. *The evolving self: a psychology for the third millennium*. New York: Harper Collins.
- Department of Education. 2001. *Education White Paper 6: Special Needs Education: building an inclusive education and training system*. Pretoria: Department of Education.
- Feldhusen, J. 2003. Reflections on the development of creative achievement. *Gifted and Talented International*, 18(1): 47–51.
- Kokot, S.J. 2000. *Understanding giftedness: a South African perspective*. Johannesburg: Radford House.
- Milne, H. 2003. *The Schoolwide Enrichment Model: enriching the potential of persons with disabilities*. Paper presented at the 15th World Conference of the World Council for Gifted and Talented Children. Adelaide, Australia, 1–5 August.
- Montgomery, D. 1996. *Educating the able*. London: Cassell.
- Montgomery, D. 2000. Inclusive education for able under-achievers: changing teaching for learning. In Montgomery, D. (Ed.), *Able underachievers*. London: Whurr, 127–149.
- Persson, R.S. 1999. Exploring high ability in egalitarian settings: Swedish school teachers and gifted students. *Gifted and Talented International*, 14(1): 6–11.
- Renzulli, J.S. 1986. *Systems and models for developing programs for the gifted and talented*. Mansfield Center, CT: Creative Learning Press.
- Schunk, D.H. & Zimmerman, B.J. 1994. *Self-regulation of learning and performance*. Hillsdale, NJ: Lawrence Erlbaum.
- Seagoe, M.V. 1975. *Terman and the gifted*. Los Altos, CA: William Kauffman.
- Steinberg, L. 1996. *Beyond the classroom*. New York: Simon & Schuster.
- Tannenbaum, A.J. 1983. *Gifted children: psychological and educational perspectives*. New York: Macmillan.
- Terman, L.M. 1925. *Genetic studies of genius, Volume 1: mental and physical traits of a thousand gifted children*. Stanford, CA: Stanford University Press.
- Treffinger, D.J. & Feldhusen, J.F. 2000. *Planning for productive thinking and learning*. Waco, TX: Prufrock Press.
- Van der Horst, H.v.R. 1994. *Teaching the gifted* (only study guide for OBK454-P). Pretoria: Unisa.
- Vialle, W. & Geake, J. 2002. *The gifted enigma: a collection of articles*. Highett, VI: Hawker Brownlow Education.

INDEX

- A**
- acceleration 479
 - accommodation of barriers to learning
 - definition 56
 - domains of accommodation 56
 - assessment 48
 - access 56
 - achievement, of 154
 - continuous 58
 - curriculum-based assessment 154
 - definition 46
 - dynamic assessment 54
 - objectives of 49
 - proficiency assessment 153
 - purpose of 48
 - reliability 55
 - sources of information 58
 - technique 57
 - validity 55
 - assessors 49
 - asset-based approach
 - asset 51
 - asset access mapping 52
 - personal strength 51
 - trans-disciplinary model 52
 - attention, types of 393
 - attention deficit/hyperactivity disorder (AD/HD) 357, 366
 - auditory pathways 256
 - auditory perception
 - auditory analysis 371
 - auditory closure 371
 - auditory discrimination 371
 - auditory figure ground identification 371
 - auditory memory 371
 - auditory order 371
 - auditory synthesis 371
 - definition 371
 - autism
 - long-term outcomes 318
 - placement of learners 324
 - possible causal factors 317
 - prevalence 318
 - principle of intervention 318
 - secondary impairments 316
 - support and intervention strategies 320
 - autistic spectrum disorder 308
 - commonly associated features 315
 - triads of impairments 308
 - autonomous nervous system 240
 - parasympathetic 240
 - sympathetic 240
- B**
- basal ganglia 246
 - bilingual 153
 - bilingual-bicultural approach 356
 - bio-ecological model, *see* Bronfenbrenner's bio-ecological model
 - Braille 340
 - contractions 344
 - brain damage, causes 257
 - brain stem 244
 - Bronfenbrenner 13, 214
 - Bronfenbrenner's bio-ecological model 13, 62, 81, 349
 - component 50
 - Bronfenbrenner's ecological model 10
 - chronosystem 10, 12
 - exosystem 10, 11, 82, 215
 - macrosystem 10, 12, 81
 - mesosystem 10, 11, 82
 - microsystem 10, 82, 215
 - person characteristics 13
 - process 13
 - time 15
 - Bronfenbrenner's systems theory 215, 338
- C**
- central nervous system 240
 - cerebellum 246
 - cerebral palsy 288
 - assessment of intelligence 295
 - ataxia 294
 - barriers 294
 - causes of 289
 - classification 290
 - classroom support 297
 - definition 289
 - dyskinesia 293
 - hypotonia 294
 - intelligence assessment 295
 - medical and paramedical treatment 295
 - mixed types 294

- neurological levels 290
- spasticity 292
- cerebrum 247
 - frontal lobes 249
 - limbic lobes 251
 - occipital lobes 251
 - parietal lobes 250
 - temporal lobes 250
- challenging behaviour
 - extrinsic factors 450
 - intrinsic factors 450
- chronic diseases 427
 - anorexia nervosa 440
 - asthma 438
 - bilharzia 435
 - blood disorder 442
 - bulimia nervosa 440
 - childhood cancer 441
 - definition 428
 - diabetes 436
 - factors contributing to 428
 - gastrointestinal disorder 439
 - heart disorder 441
 - HIV/Aids 432
 - hyperthyroidism 438
 - hypothyroidism 438
 - impact on the child 429
 - impact on the family 429
 - impact on school success 429
 - kidney disorders 439
 - learning support 442
 - malaria 435
 - nutritional disorders 439
 - Perthe's disease 305
 - Scheuermann's disease 305
 - tuberculosis 434
- classroom management 456
 - classroom procedures 457
 - classroom rules 457
 - planning 456
- closed circuit television 345
- code switching 156
- cognition
 - expressive language 120
 - inner language 120
 - language, and 120
 - receptive language 120
- cognitive style 103
- collaboration 338
 - collaborative relationships 226
 - definition 228, 230
 - interdisciplinary approach 228
 - multidisciplinary approach 228
- parity 229
- shared goal 229
- shared responsibility 229
- sharing of resources 230
- volunteer participation 228
- communication 171
 - aided symbol 172
 - common gesture 173
 - cultural gesture 173
 - ecolalia 312
 - finger spelling 174
 - functions 120
 - key word signing 174
 - natural gesture 173
 - oral approach 353
 - pantomime 173
 - sign language 174
 - sign language approach 353
 - unaided symbol 172
 - voluntary vocalisation 173
- communication device 176
- communication, means of
 - linguistics 119
 - paralinguistics 119
- communication skills 91, 110
- communication system
 - pictorial symbol 176
 - tangible symbol 176
 - traditional orthography 176
- community factors 453
- computer technology
 - computers 345
 - notetakers 344
 - refreshable Braille 344
 - scanners 344
- cooperative groups 156
- cooperative learning 71, 206, 359, 417
 - brainstorming 159
 - buzz group 159
 - core group 73
 - face-to-face interaction 72
 - formal group 73
 - group accountability 72
 - heterogeneous group 73
 - homogeneous group 73
 - individual accountability 72, 417
 - interaction 417
 - jigsaw activity 159
 - learner reflection 72
 - positive interdependence 72, 417
 - skill 72, 417
 - temporary group 73
- cooperative teaching 343

coping tools 97
 criterion-referenced test 58
 culture
 definition 222
 cultural differences 37

D

deafness 349
 aetiology 349
 definition 349
 manifestation 357
 socio-cultural issue 349
 developmental disabilities
 aetiology 409
 directionality 339, 345
 disability
 definition 407
 environmental factors 408
 health condition 408
 personal factors 408
 discipline 455
 disruptive behaviour 454
 district-based support team 63
 Down syndrome 78

E

early intervention programme 87
 educational neglect 451
 enrichment 480
 epilepsy 273
 behaviour and emotional problems and learning
 283
 broad groupings 274
 factors that cause 278
 general seizures 275
 identification 278
 intellectual functioning 280
 learning support to 284
 medication and its possible effects 284
 nature of 274
 partial seizures 276
 relationship problems at school 282
 safety measures 286
 seizure and learning 280
 susceptibility to 278
 unclassified epileptic seizures 278
 Epstein 214, 216
 external model 216
 internal model 217
 ESL reading support 155
 ESL writing support 155
 writing workshop 166

experiential learning 109
 eye 330
 aqueous humour 331
 choroid 331
 cornea 331
 eye muscles 331
 iris 331
 lens 331
 macula 331
 pupil 331
 retina 331
 sclera 331
 vitreous humour 331
 eye condition
 albinism 329, 333, 335, 342
 cataracts 332, 335, 342
 conjunctivitis 333
 glaucoma 334
 macular degeneration 334, 335, 338, 341
 myopia 342
 nystagmus 333
 refraction errors 332
 retinal detachment 334
 retinitis pigmentosa 334, 338
 strabismus 332
 trachoma 333
 eye testing
 field of vision 338
 Snellen chart 337
 visual acuity 338

F

family
 definition 219
 family structure 220
 family-school partnership 85, 219
 full-service school 65
 functional speech 170

G

giftedness
 definition 472
 graphic symbols 176

H

hearing loss
 central 352
 conductive 352
 mixed 352
 sensorineural 352
 high technology 179

- advantage 183
 - digital speech, definition of 181
 - disadvantage 184
 - EasyTalk 181
 - iTalk2 181
 - little step-by-step communicator 181
 - Macaw digital speech output 181
 - synthesised speech output 182
 - HIV/Aids 81, 220
 - Strategic Plan 31
 - Tirisano plan for Aids intervention 32
 - HIV/Aids pandemic 21
 - human rights 30
 - hypothalamus 246
- I**
- iconicity
 - definition 174
 - impairment of the skeleton and muscular system 300
 - agenesis and deformed limbs 302
 - amputations 301
 - arthrogryposis 303
 - burn lesions 304
 - osteogenesis imperfecta 303
 - support to 305
 - inclusion 3, 4, 7
 - attitudes 20
 - background 8
 - collaboration 19
 - definition 4, 8
 - leadership 19
 - professional development 20
 - resources 20
 - South African context 15
 - Salamanca Conference 8
 - support 19
 - vision 19
 - whole-school development 19
 - inclusive community
 - cultural differences 222
 - linguistic differences 222
 - inclusive education 214, 358, 371
 - inclusive learning communities 214
 - integration 6, 7
 - intellectual impairment 380
 - attention, learning support 395
 - attention problems 393
 - concentration problems 393
 - causes of 382
 - communicating, barriers 399
 - communication, learning support 400
 - consequences of 386
 - definition 381
 - general teaching support required 389
 - memorising, barriers 397
 - memory, learning support 399
 - perception, learning support 394
 - perceptual barriers 391
 - prevalence of 381
 - skills required from teachers 387
 - thinking, barriers 396
 - thinking, learning support 398
 - intelligence 99
 - cognitive intelligence 103
 - definition 99
 - emotional intelligence 100
 - moral intelligence 106
 - motivational intelligence 105
 - physical intelligence 99
 - situational intelligence 107
 - social intelligence 101
- L**
- language
 - cognition, and 120
 - content 123
 - form 121, 123
 - function 123
 - morphology 121
 - phonology 121
 - spoken 120
 - syntax 121
 - language contextualisation 156
 - language of learning and teaching (LoLT) 37, 149
 - language skill 91
 - laterality 339, 345
 - learned helplessness 364, 415, 419
 - learner-centred classroom 158
 - learning 214
 - learning impairment
 - definition 364
 - learning style 452
 - lesson plan 157
 - life skills programme 97
 - continual learning process 109
 - curriculum 108
 - group context 108
 - health promotion 98
 - implementation 108
 - orientation to the world of work 98
 - personal development 98
 - personal journey 109
 - physical development and movement 98
 - social development 98

lighting

- environmental 342
- task 342, 343

low technology 179

- advantage 182
- communication board 179
- communication vest 181
- disadvantage 183

M

magnifying glass 345

mainstreaming 6, 7

mannerisms 336, 342

Maslow's hierarchy of needs 33

mediation 55

medical model 5, 406

- labelling 412

mentoring 97

metacognition 198

- definition 120
- metacognitive awareness 59

metalinguistics 121

mnemonics 377

mobility 340

- definition 345

monolingual 153

multicultural classroom 156

multidisciplinary approach 41

multilingual teaching 151

N

neuron

- axons 240
- cell bodies 240
- dendrites 241
- lower motor neuron 252
- neural development and growth 243
- upper motor neuron 252

neurotransmitters 243

normalisation 6

norm-referenced test 50, 57

O

ordinary school 66

orientation 340

- definition 345

P

paradigm 4

parent involvement 459

perception 370

- auditory 335
- definition 335
- spatial awareness 335
- time awareness 335
- visual 335

perceptiveness 475

perceptual development support 339

perfectionism 475

peripheral nervous system 240

- cranial 240

- spinal 240

- spinal nerves 251

personal skills 110

- interpersonal life skills 112

- intrapersonal life skills 111

planning 456

plasticity 242

positive reinforcement 460

post-lingual deafness

- causes 353

poverty 28, 451

pre-lingual deafness

- causes 352

prosthesis 301

punishment 462

R

reading 122, 164

- components 124

- definition 124

remedial education 47

resource-based approach 83

reticular system 254

S

school

- policies 224

- procedures 225

school-based support team 66

- learning support teacher 67

school climate

- definition 224

School Health Service 39

school organisation 452

school personnel 452

second language environment 155

sensitivity 474

sensory motor skills 369

severe disabilities 407

social capital 217

social ecological model 6
 social model 406
 social skills 110
 socio-critical perspective 16
 socio-economic status, of parents 221
 sound environment 343
 special school
 resource centres 65
 special needs education 15
 spina bifida 261
 spoken language 120
 street children 38
 survival skills 110
 synapse 242
 syndrome
 Asperger 307
 Down 383
 Fragile X 384
 Klinefelter 384
 Marfan 305
 Rett 307
 Tourette 317
 Turner 384
 systems model of cognition 390

T

tactual kinaesthetic perception
 definition 371
 teacher
 assessor 70
 assistants 70
 bridger 70
 designer of learning programme 68
 facilitator 69
 interpreter of learning programme 68
 learning mediator 68
 philosopher 69
 teacher assistants 420
 paraprofessional 416
 teacher–learner relationship 458
 teacher skills
 communication 459
 lesson flow 458

 organisation 458
 teaching approaches
 communicative approach 160
 whole language approach 161
 teaching style 452
 thalamus 245
 thematic teaching 417
 thinking skills 103, 110
 conflict resolution skills 104
 critical thinking skills 104
 problem-solving skills 104
 reflective thinking skills 104
 total communication 355
 trans-disciplinary team approach 416
 transformative learning theory 109

U

urbanisation 28

V

value system 30
 verbalism 336, 341
 visual impairment
 classroom support 342
 manifestation 337
 visual pathways 255
 visual perception
 definition 370
 form consistency 370
 spatial orientation 370
 visual analysis 370
 visual closure 370
 visual discrimination 370
 visual figure ground perception 370
 visual memory 370
 visual sequence 370
 visual synthesis 370

W

World Health Organization 407
 written language 122