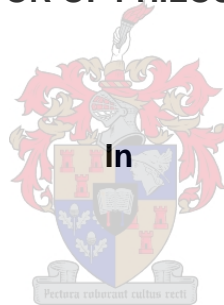


**INVESTIGATING TEACHING AND LEARNING SUPPORT FOR STUDENTS WITH  
HEARING IMPAIRMENT AT A UNIVERSITY IN THE WESTERN CAPE**

**DIANE BELL**

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**Promoter: Prof. A.E. Carl**

**Co-Promoter: Prof. R.E. Swart**

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## DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the owner of the copyright thereof (unless to the extent explicitly otherwise stated) and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

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Date: 31 October 2012

## ABSTRACT

Globally, hearing impairment remains the most common congenital anomaly diagnosed in infants, and hearing impairment is the single largest disability grouping in South Africa. Growing numbers of students with hearing impairment are being granted access into higher education in South Africa. However, they still remain under-represented in comparison to students with other impairments, and their needs in the teaching and learning environment in terms of human and technical support as well as communication and access to information remain under-supported. This study came into being because of the absence of research on the academic experiences of students with hearing impairment in higher education in South Africa. The intention of the study was to analyse and describe the teaching and learning (academic) experiences of students with hearing impairment at the case study university. This inquiry focused specifically on educational barriers, coping strategies, assistive technologies, curriculum accessibility as well as support services. Using a qualitative case study design, informed by an interpretive (constructivist) paradigm, purposeful sampling led to the selection of information-rich cases in order to gain insight from the authentic experiences of the students.

The context of the case study was a South African university with a relatively large number of registered students with hearing impairment who use the oral method of communication. Data were generated by means of semi-structured interviews with participating students, university lecturers and a staff member from the disability unit. ATLAS.ti was used to code and analyse the data using grounded theory methods, allowing for the discovery of recurring themes. Six major findings emerged from this study, namely that all of the participants identified as belonging to the hearing rather than Deaf identity cultural paradigm, that limited curriculum transformation had taken place, existing support services were largely inadequate, a large number of barriers related to teaching and assessment were experienced, a variety of academic and personal coping strategies were used by the students to support their needs, and some critical factors for success were advocated for by the participants.

From the findings and data interpretation and by making use of Bronfenbrenner's bio-ecological model of human development as a tool, I constructed both an academic learning support framework as well as a set of practical guidelines for teaching students with hearing impairment. Thereafter conclusions were drawn and practical recommendations were made to various stakeholders in the education of students with hearing impairment. Further areas for research are also suggested. The academic learning support framework (as a model of best practice) forms part of my personal contribution to the field of research.

## SAMEVATTING

Gehoorgestremdheid is wêreldwyd steeds die algemeenste kongenitale afwyking wat by babas gediagnoseer word, en in Suid-Afrika is die meeste mense met gestremdhede dié met gehoorgestremdhede. Alhoewel 'n toenemende aantal studente met gehoorverlies toegang tot hoër onderwys in Suid-Afrika verkry, is hulle steeds ondervteenwoordig in vergelyking met studente met ander gestremdhede en ontvang hulle steeds min ondersteuning, hetsy menslik of tegnies. Hierdie studie het ontstaan as gevolg van die afwesigheid van navorsing oor die persoonlike ervarings van studente met gehoorgestremdheid in hoër onderwys in Suid-Afrika. Die hoofdoel van hierdie gevallestudie was om vas te stel hoe om hierdie studente akademies te ondersteun ten einde hul tersiêre opvoeding en hul kanse om sukses te behaal en grade te verwerf, te verbeter. Die studie het veral gekyk na die opvoedkundige struikelblokke, hanteringstrategieë, ondersteunende tegnologieë, leerplantoeganklikheid, sowel as ondersteuningsdienste. Die metodologie wat vir hierdie studie gebruik is, was kwalitatief van aard. Die gebruik van doelgerigte steekproefneming het gelei tot die keuse van inligtingryke gevalle ten einde insig in die alledaagse ervarings van die studente te verkry.

Die agtergrond van die studie was 'n universiteit met 'n groot aantal geregistreerde gehoorgestremde studente wat van mondelinge/ouditiewe kommunikasiemetodes gebruik maak. Data is deur middel van semi-gestruktureerde onderhoude met hierdie studente, dosente en 'n personeellid van die eenheid vir gestremdhede gegenereer. Die data is met behulp van ATLAS.ti gekodeer en geanaliseer om die herhalende temas te bepaal. Die ses belangrikste bevindings uit hierdie studie was dat al die deelnemers hulself met horende studente eerder as met gehoorgestremdes in die samelewing geïdentifiseer het, dat beperkte kurrikulumtransformasie plaasgevind het, dat bestaande ondersteuningsdienste grootliks onvoldoende was, dat die deelnemers 'n groot aantal struikelblokke met betrekking tot onderrig en assessering ervaar het, dat hulle 'n verskeidenheid akademiese en persoonlike hanteringstrategieë gebruik het om aan hulle behoeftes te voldoen en dat die kritiese faktore vir sukses deur die deelnemers self bepleit moes word.

Uit die bevindinge van hierdie navorsing het die navorser 'n holistiese raamwerk, geïnspireer deur Bronfenbrenner se bio-ekologiese model vir menslike ontwikkeling, vir studente met gehoorgestremdheid in hoër onderwys ontwerp. Gevolgtrekkings is gemaak en praktiese aanbevelings is aan verskeie belanghebbendes wat by die onderrig van studente met gehoorgestremdheid betrokke is, voorgelê. Verdere terreine vir navorsing word ook voorgestel. Die akademiese leerondersteuningsraamwerk (as 'n model van beste praktyk) maak deel uit van my persoonlike bydrae tot die navorsingsveld.

## DEDICATION

This thesis is dedicated to two very important people in my life and one whom I most unfortunately never had the privilege of knowing.

First, my daughter, **Jody Lee Bell**, who was born with a profound hearing impairment. You have taught me more than you will ever know and it is a privilege to be your mother. You were the inspiration for this research and I continue to be inspired, on a daily basis, by your bravery and tenacity. Remember, the barriers that you face arouse change that could pave the way for students with hearing impairment following in your footsteps!

Thank you my Angel, this is for you!

And secondly, to my father, **Hendrik Abraham Jacobus Collins**, who worked hard his entire life to give his children what he did not have the opportunity to receive – one of these being a university education.

And, finally, this thesis is dedicated to my brother **Ian Collins** who was born on the 14<sup>th</sup> of December 1960 but after only 1 year and 10 months passed away on 29 October 1962.

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I also owe a lot to my family (whom I love and treasure), who went through some difficult times during my 8-month absence.

I wish to thank my husband, Ian Stewart Bell, for his consistent support throughout the lengthy period of my studies, but especially whilst I was away, having to be both father and mother to our daughter, and for the care and devotion to my parents during my sabbatical.

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I also wish to express my deepest gratitude to the students with hearing impairment who participated in this research. Thank you for your time and your warmth and for sharing your very personal experiences with me, I really appreciate it. Your stories will remain with me for the rest of my life and my fondest wish is that out of your courage to share will emerge change for current and future students with hearing impairment in higher education. I am ever hopeful that people will listen and learn from you.

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## TABLE OF CONTENTS

<b>PREFACE .....</b>	<b>XX</b>
<b>CHAPTER 1 - THE RESEARCH PROBLEM AND CONTEXT .....</b>	<b>1</b>
<b>1.1 INTRODUCTION .....</b>	<b>1</b>
<b>1.2 THE POWER OF NAMING.....</b>	<b>2</b>
<b>1.3 BACKGROUND AND CONTEXT .....</b>	<b>5</b>
<b>1.4 RATIONALE AND SIGNIFICANCE.....</b>	<b>7</b>
<b>1.5 STATEMENT OF THE PROBLEM .....</b>	<b>8</b>
<b>1.6 MAIN RESEARCH QUESTION .....</b>	<b>9</b>
<b>1.7 RESEARCH SUB-QUESTIONS .....</b>	<b>9</b>
<b>1.8 MAIN RESEARCH GOAL .....</b>	<b>9</b>
<b>1.9 RESEARCH SUB-GOALS .....</b>	<b>9</b>
<b>1.10 DESIGN AND METHODOLOGY OF THE STUDY .....</b>	<b>10</b>
1.10.1 Research approach.....	10
1.10.2 Research design and strategy.....	11
1.10.3 Research methodology.....	11
<b>1.11 CONTEXT .....</b>	<b>12</b>
<b>1.12 ETHICAL CONSIDERATIONS.....</b>	<b>12</b>
<b>1.13 THE RESEARCHER.....</b>	<b>13</b>
<b>1.14 ASSUMPTIONS.....</b>	<b>14</b>
<b>1.15 DEFINITIONS OF KEY TERMINOLOGY USED IN THIS STUDY .....</b>	<b>15</b>
1.15.1 Assistive listening devices (ALDs) .....	15
1.15.2 Deaf or Deafness (with a capital D) .....	15
1.15.3 Disability .....	15
1.15.4 Hearing impairment/Hearing impaired .....	16
1.15.5 Higher education .....	16
1.15.6 Inclusion .....	16
1.15.7 Inclusive education.....	17
1.15.8 Mainstreaming .....	17
1.15.9 Oralism .....	17
1.15.10 Reasonable accommodation .....	17
<b>1.16 BRIEF OUTLINE OF CHAPTERS .....</b>	<b>17</b>
<b>1.17 CHAPTER SUMMARY.....</b>	<b>18</b>
<b>CHAPTER 2 - DISABILITY AND HEARING IMPAIRMENT: A LITERATURE STUDY.....</b>	<b>19</b>
<b>2.1 INTRODUCTION .....</b>	<b>19</b>
<b>2.2 DISABILITY: CHANGING PARADIGMS .....</b>	<b>19</b>
2.2.1 Medical model of disability .....	20



2.2.2	Social model of disability .....	22
2.2.3	Social relational model of disability .....	24
2.2.4	Bronfenbrenner’s bio-ecological systems theory .....	25
2.2.4.1	Origins, development and explanation .....	25
2.2.4.2	Application of model .....	28
2.2.5	Bio-psycho-social model (including the ICDH and ICF).....	29
<b>2.3</b>	<b>DISABILITY AND RESEARCH .....</b>	<b>32</b>
2.3.1	Disability and its meaning .....	32
2.3.2	Disability prevalence .....	33
2.3.3	Disability research in South Africa and Africa .....	34
2.3.4	Disability versus linguistic minority .....	35
2.3.5	Identity and stigma (in relation to ‘disability’) .....	36
2.3.5.1	Identity and stigma (in relation to students with hearing impairments and cochlear implantation) .....	39
2.3.5.2	Deaf Identity Development Scale (DIDS) .....	40
2.3.5.3	Goffman: the notion of ‘shame’ .....	41
2.3.6	Summary .....	42
<b>2.4</b>	<b>UNDERSTANDING HEARING IMPAIRMENT .....</b>	<b>42</b>
2.4.1	Types of hearing loss .....	42
2.4.1.1	Conductive hearing loss .....	43
2.4.1.2	Sensori-neural hearing loss .....	43
2.4.1.3	Mixed hearing loss.....	43
2.4.2	Degrees of hearing loss .....	43
2.4.3	Age of onset .....	44
2.4.3.1	Pre-lingual deafness .....	44
2.4.3.2	Post-lingual deafness.....	45
2.4.4	Bilateral versus unilateral hearing loss.....	45
2.4.5	Symmetrical versus asymmetrical hearing loss.....	45
2.4.6	Progressive versus sudden hearing loss .....	45
2.4.7	The audiogram: explanation and significance .....	45
2.4.8	Prevalence of hearing impairment .....	46
2.4.8.1	Prevalence: globally and in South Africa .....	46
2.4.8.2	Statistics: Primary and secondary schooling .....	49
2.4.8.3	Statistics on disability and hearing impairment in higher education .....	50
2.4.9	Communication and accessibility .....	52
2.4.9.1	Introduction.....	52
2.4.9.2	Communication choice.....	53
2.4.9.3	Communication access.....	54
2.4.9.4	Hearing aids.....	54
2.4.9.5	Cochlear implants.....	54
2.4.9.6	Lip-reading and speech-reading .....	55
2.4.10	Assistive listening devices (ALDs) .....	55
2.4.10.1	FM (frequency modulation) systems.....	56
2.4.10.2	Infrared systems.....	56
2.4.10.3	Audio induction loop systems .....	56
2.4.10.4	Microphones to enhance speech intelligibility .....	56
2.4.11	Access technologies.....	57
2.4.11.1	CART (Computer-assisted real-time transcription) .....	57
2.4.11.2	CAN (computer-assisted note-taking) .....	57

2.4.11.3	C-PRINT (computer-aided speech-to-print).....	58
2.4.12	Summary .....	58
<b>2.5</b>	<b>CHAPTER SUMMARY .....</b>	<b>58</b>
<b>CHAPTER 3 - INCLUSIVITY AND HIGHER EDUCATION: A LITERATURE STUDY .....</b>		<b>60</b>
<b>3.1</b>	<b>INTRODUCTION .....</b>	<b>60</b>
<b>3.2</b>	<b>INCLUSIVE EDUCATION: CHANGING PARADIGMS.....</b>	<b>60</b>
3.2.1	Conceptualising inclusive education .....	61
3.2.2	Global initiatives.....	64
3.2.3	National legislation and policy framework.....	67
3.2.4	Inclusion within higher education .....	72
<b>3.3</b>	<b>ACCESSIBILITY AND HIGHER EDUCATION .....</b>	<b>74</b>
3.3.1	Access to and transition into higher education.....	74
3.3.2	Support services and accommodations for students with disabilities .....	78
3.3.2.1	Types of support services for students with hearing impairments .....	79
3.3.2.2	Manual note-taking (using 'human' note-takers) .....	81
3.3.2.3	Academic tutors .....	81
3.3.2.4	Instructional and curricula adaptations .....	81
3.3.2.5	Language modification .....	82
3.3.2.6	Other general accommodations.....	83
3.3.3	Support services within the South African context .....	83
3.3.4	Barriers to inclusion in higher education .....	86
3.3.4.1	Barriers faced by students with disabilities within the local context.....	86
3.3.4.2	Teachers (school), lecturers (university) and inclusion .....	88
3.3.5	Summary .....	93
<b>3.4</b>	<b>STUDENTS WITH HEARING IMPAIRMENT IN HIGHER EDUCATION.....</b>	<b>93</b>
3.4.1	Attrition, persistence, and academic outcomes.....	93
3.4.2	Personal/Social factors related to students with hearing impairment .....	95
3.4.3	Potential impact of hearing impairment on learning.....	96
3.4.4	Barriers experienced by students with hearing impairment in higher education.....	100
3.4.4.1	Implications of hearing impairment on the individual .....	100
3.4.4.2	Communication barriers within the learning environment .....	101
3.4.4.3	Societal barriers.....	103
3.4.4.4	Inflexible curricula .....	103
3.4.5	Factors supporting success.....	104
3.4.5.1	Literature on student success .....	104
3.4.5.2	Disclosure .....	107
3.4.5.3	Self-determination and self-advocacy skills .....	109
3.4.5.4	Self-esteem and coping strategies .....	111
3.4.5.5	Curriculum accessibility .....	112
<b>3.5</b>	<b>CHAPTER SUMMARY .....</b>	<b>115</b>
<b>CHAPTER 4 - RESEARCH DESIGN AND METHODOLOGY .....</b>		<b>117</b>
<b>4.1</b>	<b>INTRODUCTION AND OVERVIEW .....</b>	<b>117</b>
<b>4.2</b>	<b>THEORETICAL PARADIGM AND PERSPECTIVES .....</b>	<b>118</b>

<b>4.3</b>	<b>RESEARCH DESIGN, STRATEGY AND METHODOLOGY .....</b>	<b>122</b>
<b>4.4</b>	<b>THE RESEARCH SAMPLE .....</b>	<b>124</b>
4.4.1	Selection of participants.....	124
4.4.1.1	Students with hearing impairment .....	125
4.4.1.2	Lecturers of students with hearing impairment.....	125
4.4.1.3	Support staff member: Disability unit .....	126
<b>4.5</b>	<b>INFORMATION NEEDED TO CONDUCT THE STUDY .....</b>	<b>126</b>
<b>4.6</b>	<b>STEPS IN RESEARCH PROCESS .....</b>	<b>127</b>
<b>4.7</b>	<b>DATA GENERATION METHODS .....</b>	<b>129</b>
4.7.1	Phase I: Survey (questionnaire) (March and April 2009).....	130
4.7.2	Phase II: Interviews (15 April to 20 August 2009) .....	131
4.7.2.1	Interview schedule of questions .....	133
4.7.2.2	Interview process .....	133
4.7.3	Phase III: Educational artefacts as documentation .....	136
<b>4.8</b>	<b>METHODS FOR DATA TRANSFORMATION AND SYNTHESIS.....</b>	<b>137</b>
<b>4.9</b>	<b>DATA REDUCTION.....</b>	<b>139</b>
<b>4.10</b>	<b>DATA DISPLAY .....</b>	<b>144</b>
<b>4.11</b>	<b>DATA CONSOLIDATION AND INTERPRETATION .....</b>	<b>145</b>
<b>4.12</b>	<b>ETHICAL CONSIDERATIONS.....</b>	<b>145</b>
4.12.1	Informed consent .....	146
4.12.2	Anonymity and confidentiality .....	146
4.12.3	Protecting participants from harm.....	147
<b>4.13</b>	<b>TRUSTWORTHINESS OF THE DATA.....</b>	<b>147</b>
4.13.1	Credibility .....	149
4.13.2	Transferability .....	151
4.13.3	Dependability .....	151
4.13.4	Confirmability.....	152
<b>4.14</b>	<b>LIMITATIONS OF THE STUDY .....</b>	<b>152</b>
<b>4.15</b>	<b>CHAPTER SUMMARY.....</b>	<b>153</b>
<b>CHAPTER 5 - PRESENTATION OF FINDINGS.....</b>		<b>154</b>
<b>5.1</b>	<b>INTRODUCTION .....</b>	<b>154</b>
<b>5.2</b>	<b>THE CASE STUDY INSTITUTION .....</b>	<b>155</b>
<b>5.3</b>	<b>DESCRIPTION OF THE PARTICIPANTS .....</b>	<b>157</b>
<b>5.4</b>	<b>DEMOGRAPHIC DESCRIPTION .....</b>	<b>159</b>
<b>5.5</b>	<b>FINDING 1.....</b>	<b>160</b>
5.5.1	Hearing/Deaf identity cultural paradigm .....	161
5.5.2	Disclosure of hearing impairment .....	162
5.5.3	Personal characteristics, self-advocacy and extravisibility.....	163
5.5.4	Summary .....	164

<b>5.6</b>	<b>FINDING 2.....</b>	<b>165</b>
5.6.1	‘Inclusive’ teaching practices.....	165
5.6.2	Reasonable academic adjustments.....	166
5.6.3	Summary.....	167
<b>5.7</b>	<b>FINDING 3.....</b>	<b>167</b>
5.7.1	Institutional policy for students with disabilities.....	167
5.7.2	Learning support services.....	168
5.7.3	Summary.....	170
<b>5.8</b>	<b>FINDING 4.....</b>	<b>170</b>
5.8.1	Barriers to learning.....	170
5.8.2	Barriers in assessment.....	172
5.8.3	Summary.....	173
<b>5.9</b>	<b>FINDING 5.....</b>	<b>173</b>
5.9.1	Communication and learning strategies.....	173
5.9.2	Assessment strategies.....	175
5.9.3	Personal coping strategies.....	176
5.9.4	Summary.....	178
<b>5.10</b>	<b>FINDING 6.....</b>	<b>178</b>
5.10.1	Curriculum flexibility.....	178
5.10.2	Disability awareness and interaction with lecturers.....	180
5.10.3	Physical environment.....	181
5.10.4	Other critical success factors.....	181
5.10.5	Advice for new first-year students with hearing impairment.....	183
5.10.6	Summary.....	184
<b>5.11</b>	<b>FINDINGS: INTERVIEW WITH SUPPORT STAFF MEMBER FROM DISABILITY UNIT.....</b>	<b>184</b>
5.11.1	Hearing impairment and disclosure.....	184
5.11.2	Curriculum transformation.....	185
5.11.3	University support.....	186
5.11.4	Educational barriers.....	188
5.11.5	Coping strategies.....	191
5.11.6	Critical success factors.....	191
5.11.7	Summary.....	191
<b>5.12</b>	<b>FINDINGS: INTERVIEWS WITH LECTURERS.....</b>	<b>192</b>
5.12.1	Introduction.....	192
5.12.2	Identity, disclosure and personal characteristics.....	192
5.12.3	Curriculum transformation.....	193
5.12.4	University support.....	194
5.12.5	Educational barriers.....	195
5.12.6	Coping strategies.....	197
5.12.7	Critical success factors for inclusion.....	198
5.12.8	Other critical success factors.....	199
5.12.9	Summary.....	200
<b>5.13</b>	<b>FINDINGS: DOCUMENT ANALYSIS.....</b>	<b>200</b>
5.13.1	Introduction.....	200
5.13.2	Document analysis in relation to “identity”.....	201
5.13.3	Document analysis in relation to research sub-question 1.....	202

5.13.4	Document analysis in relation to research sub-question 2 .....	203
5.13.5	Document analysis in relation to research sub-question 3(a).....	205
5.13.6	Document analysis in relation to research sub-question 3(b) .....	206
5.13.7	Document analysis in relation to research sub-question 4 .....	207
5.13.8	Academic results of students with hearing impairment .....	210
5.13.9	Member check feedback .....	211
5.13.10	Summary .....	212
<b>5.14</b>	<b>CONSOLIDATION OF THE DATA .....</b>	<b>213</b>
<b>5.15</b>	<b>CHAPTER SUMMARY .....</b>	<b>213</b>
<b>CHAPTER 6 - INTERPRETIVE DISCUSSION .....</b>		<b>215</b>
<b>6.1</b>	<b>INTRODUCTION .....</b>	<b>215</b>
<b>6.2</b>	<b>DATA TRANSFORMATION, INTERPRETATION AND CONCLUSIONS .....</b>	<b>216</b>
6.2.1	Theme 1: Identity cultural paradigm .....	220
6.2.1.1	Hearing/Deaf identity cultural paradigm .....	220
6.2.1.2	Disclosure .....	222
6.2.1.3	Personal characteristics.....	223
6.2.1.4	Summary .....	226
6.2.2	Theme 2: Inclusive practices .....	227
6.2.2.1	Inclusive teaching practices and curriculum accessibility .....	227
6.2.2.2	Reasonable academic adjustments .....	229
6.2.2.3	Summary .....	230
6.2.3	Theme 3: University support .....	230
6.2.3.1	Learning support .....	230
6.2.3.2	Institutional policies for students with disabilities.....	233
6.2.3.3	Summary .....	234
6.2.4	Theme 4: Educational barriers .....	235
6.2.4.1	Barriers to learning and assessment .....	235
6.2.5	Theme 5: Coping strategies.....	238
6.2.5.1	Communication and learning strategies .....	238
6.2.5.2	Assessment strategies .....	239
6.2.5.3	Personal coping strategies .....	240
6.2.5.4	Summary .....	241
6.2.6	Theme 6: Critical success factors.....	242
6.2.6.1	Teaching recommendations: curriculum flexibility .....	242
6.2.6.2	Teaching recommendations: disability awareness and interaction with lecturers.....	242
6.2.6.3	Teaching recommendations: physical environment .....	243
6.2.6.4	General educational recommendations.....	244
6.2.6.5	Advice for first-year students with hearing impairment .....	244
<b>6.3</b>	<b>CHAPTER SUMMARY .....</b>	<b>246</b>
<b>CHAPTER 7 - CONCLUSIONS AND RECOMMENDATIONS .....</b>		<b>247</b>
<b>7.1</b>	<b>INTRODUCTION .....</b>	<b>247</b>
<b>7.2</b>	<b>REVISITING ASSUMPTIONS FROM CHAPTER 1.....</b>	<b>247</b>
<b>7.3</b>	<b>SUMMARY OF INTERPRETATION OF FINDINGS AND CONCLUSIONS.....</b>	<b>248</b>

<b>7.4</b>	<b>THE RELATIONSHIP BETWEEN HEARING IDENTITY AND EDUCATIONAL EXPERIENCES AND OUTCOMES.....</b>	<b>250</b>
<b>7.5</b>	<b>RECOMMENDATIONS.....</b>	<b>254</b>
7.5.1	Recommendations per stakeholder group.....	254
7.5.1.1	Recommendations for support staff working in disability units .....	254
7.5.1.2	Recommendations for lecturers.....	255
7.5.1.3	Recommendations for current and prospective students with hearing impairment .....	256
7.5.1.4	Recommendations for university management.....	256
7.5.2	Recommendations for further research.....	257
<b>7.6</b>	<b>LEARNING SUPPORT FRAMEWORK.....</b>	<b>258</b>
<b>7.7</b>	<b>STRENGTHS AND CONTRIBUTIONS OF THE RESEARCH STUDY.....</b>	<b>263</b>
<b>7.8</b>	<b>LIMITATIONS OF THE RESEARCH STUDY.....</b>	<b>263</b>
<b>7.9</b>	<b>RESEARCHER'S REFLECTIONS.....</b>	<b>264</b>
<b>7.10</b>	<b>CONCLUSION .....</b>	<b>265</b>
	<b>LIST OF REFERENCES.....</b>	<b>268</b>

## APPENDICES

<i>APPENDIX A: Approval letter for ethical clearance .....</i>	<i>304</i>
<i>APPENDIX B: Letter of consent.....</i>	<i>305</i>
<i>APPENDIX C: Questionnaire – students .....</i>	<i>307</i>
<i>APPENDIX D: Interview guide – disability unit .....</i>	<i>317</i>
<i>APPENDIX E: Interview guide – students .....</i>	<i>320</i>
<i>APPENDIX F: Interview guide – lecturers .....</i>	<i>323</i>
<i>APPENDIX G: Excerpt from a transcribed interview .....</i>	<i>326</i>
<i>APPENDIX H: Coding of transcript using ATLAS.ti .....</i>	<i>327</i>
<i>APPENDIX I: Network view.....</i>	<i>328</i>
<i>APPENDIX J: Building categories to themes .....</i>	<i>329</i>
<i>APPENDIX K: Recommendations per theme .....</i>	<i>333</i>
<i>APPENDIX L: Guidelines for teaching students with hearing impairment in higher education .....</i>	<i>1</i>

## LIST OF TABLES

<i>Table 1.1: Disability-friendly language</i> .....	3
<i>Table 2.1: Published research articles and theses on disability and hearing impairment</i> .....	35
<i>Table 2.2: Degrees of hearing impairment</i> .....	44
<i>Table 2.3: Disability prevalence</i> .....	48
<i>Table 2.4: Estimates of crude prevalence for hearing impairment (per cent), 2004</i> .....	48
<i>Table 2.5: Learners in schools by primary disability, 2007</i> .....	49
<i>Table 2.6: Statistics for disclosed disability in higher education (2003–2010)</i> .....	51
<i>Table 3.1: Research findings of the support provided to students with hearing impairment in higher education</i> .....	80
<i>Table 3.2: Literature reviewed related to enhancing inclusivity within higher education</i> .....	104
<i>Table 4.1: Biographical data for each student participant</i> .....	134
<i>Table 4.2: Lecturers of students with hearing impairment interviewed</i> .....	135
<i>Table 4.3: Ways in which the use of MS Word and ATLAS.ti were combined in this study</i> .....	144
<i>Table 4.4: Lincoln and Guba’s translation of terms in Finlay (2006:321), adapted from Lincoln and Guba (1985) and Ballinger (2006)</i> .....	148
<i>Table 5.1: Total enrolments – students with disabilities (2008 to 2012)</i> .....	156
<i>Table 5.2: Study level and gender of student participants</i> .....	159
<i>Table 5.3: Faculties in which student participants were registered</i> .....	160
<i>Table 5.4: Question 22 from the student participant questionnaire</i> .....	174
<i>Table 5.5: Question 29 from the student participant questionnaire</i> .....	174
<i>Table 5.6: Question 27 from the student participant questionnaire</i> .....	177
<i>Table 5.7: Question 25 from the student participant questionnaire</i> .....	183
<i>Table 5.8: Question 33 from the student participant questionnaire</i> .....	184
<i>Table 5.9: Educational barriers faced by students with hearing impairment as reported by the participant from the disability unit</i> .....	189
<i>Table 5.10: Demographic factors related to lecturers as participants</i> .....	192
<i>Table 5.11: Educational barriers faced by students with hearing impairment as reported by their lecturers</i> .....	195
<i>Table: 5.12: Summary of university documents analysed</i> .....	200
<i>Table 5.13: Issues of concern raised from analysing the university documentation</i> .....	208
<i>Table 5.14: Academic results of student participants</i> .....	210



## LIST OF FIGURES

<i>Figure 2.1: An adapted version of Bronfenbrenner’s bio-ecological model</i> .....	28
<i>Figure 2.2: The ICF model of functioning and disability</i> .....	30
<i>Figure 2.3: Audiogram indicating degrees of hearing loss</i> .....	46
<i>Figure 3.1: Potential effect that hearing impairment may have on an individual’s life</i> .....	99
<i>Figure 4.1: Example memo</i> .....	137
<i>Figure 4.2: Code book</i> .....	140
<i>Figure 4.3: Identifying data by means of coding</i> .....	141
<i>Figure 4.4: ‘Raw’ codes</i> .....	142
<i>Figure 4.5: Creation of code families</i> .....	143
<i>Figure 4.6: Comments relevant to code families (categories)</i> .....	143
<i>Figure 6.1: Derivation of themes and categories</i> .....	216
<i>Figure 6.2: Bronfenbrenner’s bio-ecological model (Bronfenbrenner, 2005) adapted for a student with hearing impairment</i> .....	219
<i>Figure 7.1: Network view of the connections between the major codes, related quotes, comments and memos</i> .....	252
<i>Figure 7.2: Flow diagram depicting the relationship between ‘hearing identity’ for students with hearing impairment and academic outcomes</i> .....	253
<i>Figure 7.3: Learning support framework</i> .....	262

**LIST OF ACRONYMS AND ABBREVIATIONS**

AHLAD	The Association for Hearing Loss Accessibility and Development
ALD	assistive listening device
ANC	African National Congress
AT	assistive technology
CAN	computer-assisted note-taking
CAQDAS	computer-aided qualitative data analysis software
CART	computer-assisted real-time transcription
CASE	Community Agency for Social Enquiry
CDTC	Carel du Toit Centre
CHE	Council for Higher Education
CI	Cochlear implant
C-Print	computer-aided speech-to-print
CPUT	Cape Peninsula University of Technology
dB	Decibels
DEAFSA	Deaf Federation of SA
DFLG	Disability Framework for Local Government
DHET	Department of Higher Education and Training
DIDS	Deaf Identity Development Scale
DLG	Department of Local Government
DoBE	Department of Basic Education
DoE	Department of Education
DWCPD	Department of Woman, Children and People with Disabilities
EFA	Education for All
ENT	Ear, nose and throat
EWP6	Education White Paper 6
FET	Further Education and Training
FM	frequency modulator
FOTIM	Foundation of Tertiary Institutes in Northern Metropole
GET	General Education and Training
HE	higher education
HEDSA	Higher and further Education Disability Services Association
HEI	higher education institution
HEQF	Higher Education Qualifications Framework
HET	Higher Education and Training
HoH	hard of hearing
HU	hermeneutic unit
Hz	Hertz
ICF	International Classification System
ICIDH	International Classification of Functioning, Disability and Health
IDC	International Disability Caucus
IE	inclusive education

INDS	Integrated National Disability Strategy
NCESS	National Committee on Education Support Services
NCPPDSA	National Council for Person with Physical Disabilities in South Africa
NCSNET	National Committee on Special Needs in Education and Training
NCV	National Certificate Vocational programmes
NDPSF	National Disability Policy and Strategic Framework
NGO	non-governmental organisation
NID	National Institute for the Deaf
NPO	non-profit organisation
NQF	National Qualifications Framework
NTID	National Technical Institute for the Deaf
PA	public address
PEPNet	Postsecondary Education Programmes Network
PMG	Parliamentary Monitoring Group
PTA	Parent Teachers Association
RIT	Rochester Institute of Technology
RSA	Republic of South Africa
SAAA	South African Association of Audiologists
SAFCD	South African Federal Council on Disability
SAHI	South African Hearing Institute
SASL	South African Sign Language
SIG	special interest group
SMS	short message service
SNR	signal-to-noise-ratio
TACs	Technical Assistance Centres
ULD	universal learning design
UN	United Nations
UNCRPD	United Nations Convention on the Rights of Persons with Disabilities
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNICEF	United Nations Children's Fund
UPIAS	Union of the Physically Impaired Against Segregation
WHO	World Health Organisation

## PREFACE

### My journey into and with hearing impairment

#### Trying to belong!

-by Leone Miller

So ... you think my hearing's gone

"Cuz I bought weeds for your lawn

And the buttons that I bought won't fit your boat?"

If I didn't get it right

Doesn't mean that I'm not bright,

It just means that I'm trying to belong.

I laugh when I hear wrong

And my words don't fit your song;

But the brave smile you see isn't real.

For it hurts when people shout

But it's worse to be left out.

I'm just trying hard to belong.

Please help me to fit in.

When I stumble then just grin.

Help me understand the things I can't hear.

Just encourage when I try

And I know that by and by

I will feel that I truly still belong.

## Introduction

*I am just as deaf as I am blind. The problems of deafness are deeper and more complex, if not more important than those of blindness. Deafness is a much worse misfortune. For it means the loss of the most vital stimulus – the sound of the voice that brings language, sets thoughts astir, and keeps us in the intellectual company of man.*

*Blindness separates us from things but deafness separates us from people.*

*Children who hear acquire language without any particular effort; the words that fall from others' lips they catch on the wing, as it were, delightedly, while the little deaf child must trap them by a slow and often painful process. But whatever the process, the result is wonderful. Gradually from naming an object we advance step by step until we have traversed the vast distance between our first stammered syllable and the sweep of thought in a line of Shakespeare (Keller, 1910).*

The justification of this study commences with my own story, as a mother of a daughter with a profound hearing impairment. It has been through witnessing the challenges faced by her that I realised the necessity for this research study. When I look back and review my life, I see all the pieces of the puzzle that now fit together and know, without a doubt, that I am doing what I was put on this earth to do. There are three main reasons for the sharing of this personal biography as part of the preface rather than an appendix: firstly, to provide a detailed account of myself as an 'insider', secondly to provide additional context for the reader and thirdly to set the tone for the study.

### A personal biography

I was born 46 years ago on 25 May 1966, a third (and last child) to my parents. I was only to find out later that my parents had lost their first child, a son named Ian, at the tender age of two due to surgical complications. Ian was born in 1960 and passed away in 1962, and my sister was born in 1963. Unfortunately my mother had a problematic pregnancy with me and I was born with some breathing difficulties due to congenital bronchiectasis. Eventually, after five years, the affected parts of my left lung were removed and I made a full recovery, receiving a "clean bill of health" in my adolescent years. The only reminder is the large scar across my upper back and the faded memories of spending a significant time in hospital, with images of tubes piercing both sides of my body and glass jars of 'goo' on the floor. I also remember the excruciating pain when having to remove the sticky plaster from the wound. Perhaps I was meant to have this disabling experience to fulfil the purpose of my life.

My primary and secondary school years were relatively uneventful, except for my wilful rebelliousness from the age of 12. I performed above average at school but never expected to become a teacher. I matriculated from high school in 1983 and had no real idea what I wanted to do with my life. During my final year of school I was offered a bursary to study German and Dutch at a local university to become a language teacher, but I turned it down. For the next three

years I drifted in and out of jobs, from land surveying to being a bank clerk, not really knowing what I wanted to do. At one point I took a temporary position at a multinational insurance company as a data-capturer. It was here that I met a very good friend who had a hearing impairment and wore a hearing aid. She was the first person with a hearing impairment that I had ever met but I did not even think about it; her hearing impairment was never really a topic of conversation between us. I did, however, note that she used lip-reading quite extensively and that her speech was different. After the temporary data-capturing assignment I was moved to the mainframe computer environment and worked as a 'computer operator'. It was here that my love for technology bloomed.

Three years after leaving school, and after working a night shift and being really exhausted, I had a major car accident. This event made me re-evaluate my life and my future, so I once again approached the education department for a bursary to study teaching, but this time in the field of commerce (after my exposure at the insurance company). After completing my studies I taught at a suburban high school for twelve years. During this time I was promoted a few times and held quite a senior position. I also pursued further studies in the field of information technology (funded by the school) and project-managed the installation of the first two computer laboratories at the school, as well as the introduction of new information-technology-related curricula – my affinity for technology still growing, housed within my love for teaching.

In 1990 I got married and in 1993, on 29 January my Angel, Jody Lee, was born. I did not have an easy pregnancy, with threatening toxæmia, and was glad when she was welcomed into the world. I remember my dad always being worried during my pregnancy and saying "as long as she is healthy" and after her birth, he gazed at her and commented on her being perfect – having all ten fingers and toes. How naive we were! At this time, despite her having been born in a private hospital, there was no newborn screening programmes for hearing impairment. Before leaving hospital, Jody had jaundice and during the first year of her life she often had middle ear infections and had surgery for grommets a few times. At around 6 months of age, I began to suspect that she had a problem with her hearing as she never responded to me clapping (or other noises) when she faced away from me, but due to my lack of knowledge at the time, I consulted with the wrong specialists (ear nose & throat (or ENT specialists), general practitioners and paediatricians), all of whom assured me that there was nothing wrong with her hearing. One ENT even told me that I was a 'neurotic mother'.

When she was around a year old (1994), my marriage ended and the house had to be sold to pay for the divorce. Having decided to move away to a small town along the Garden Route to where my parents had settled after retirement to 'start over', I also resigned from my teaching job. Soon after moving in with my parents I remember my mom telling me that she thought that Jody had a

problem with her hearing. So again, I consulted with a local ENT specialist and Jody had grommets once more. Then the universe intervened! As a gift for my birthday, my sister bought me a subscription to a parenting magazine and on the front cover of the very first issue that I received, was “How to tell if your child is hearing impaired”. Well, I read the article and went cold, realising that all the symptoms that they described were present. The article provided a contact number and so two weeks later Jody was being tested at the paedo-audiology unit at Tygerberg Hospital. And then the bombshell was dropped: the specialist told me that my beautiful baby daughter (now 14 months old) had a profound, bilateral, sensori-neural hearing impairment, that she needed two hearing aids and that she should attend a special school for the deaf. All I remember thinking was “what is a hearing aid? what does it cost? how will I afford this as I have no job?”. Then after leaving the hospital, I put Jody in her car seat, walked behind the car so that she could not see me and burst into tears; although realising that tears were not going to help me solve this problem and that I had to be strong for her. In order to support me, my parents moved back to Cape Town and I went to live with them for a while. I also managed to go back into my teaching post at the school, which was most fortunate.

Jody was fitted with hearing aids, attended the ‘hot pot’<sup>1</sup> group at the Carel du Toit Centre (CDTC) until age 3, after which she became a full-time learner there. It was here that I learnt how to teach Jody language, one word at a time and where I saw her at her happiest, interacting with friends just like her. They understood each other in a very special way, were carefree in a very protective environment. I started understanding hearing impairment and its many implications. It was around this time that I also realised that I needed to interact with other parents with children with hearing impairments, so, together with someone else, we started a support group for parents called “The Deaf Angel Network”. There were many times that I felt desperate about her future, but at one particular parent-teacher association (PTA) meeting, a young girl, around the age of 12 with a profound hearing impairment, got up to play the piano. She played it so beautifully that I thought to myself, if this child can be so musically talented despite her hearing impairment, then there is hope for my child. Jody was almost four years old when I remarried – a man with a medical background and someone who simply accepted us as we were – flaws and all. Within a few months of our marriage, he also adopted Jody and raised her as his daughter. This year, we will have been married for 15 years.

The first big transition for Jody came when she was 7 years old, having to leave the protective environment of the CDTC and go to a mainstream primary school. We received no support from the education department or the CDTC but were left to our own devices. In order to ease the

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<sup>1</sup>The ‘hot pot’ group was run by the teachers of the Carel du Toit Centre (CDTC) for young children between the ages of 0 and 3. The purpose of this group was for the children to begin to learn language for a few hours each day. Guidance was also provided to the parents on how to teach language to their children.

process, she started attending the 'after-care' group for 6 months before moving into Grade 1. I thought that this would help her to socialise with her hearing peers as up until now she had only interacted with peers with hearing impairments. I am unsure whether this helped at all. In my ignorance, because I knew that she would have to pass two languages in matric, I decided to enrol her in a dual-medium public primary school, naively thinking that this would help her to learn a second language. With hindsight this was not a smart move as it led to her being very isolated. The school was predominantly Afrikaans, which meant that the whole ethos of the school, the assemblies, announcements, etc., was all conducted in a language, which she did not understand. She was, however, placed in an English class and managed for two years, after which we moved her to an English-only public school.

During these primary schooling years, I would spend a day at the beginning of each year, with her new teacher, at the beginning of each year, explaining some of the contents of White Paper 6 and how best to accommodate Jody's communication needs in class. Socialisation with her peers was always an issue and we tried various strategies to address this. I also requested that all the materials which I shared with them, relating to Jody's hearing impairment and teaching tips, etc., be placed in one file and passed on to the next teacher each year for the sake of continuity. Whenever possible, I also requested that she be placed in the class of the most experienced teacher, who hopefully had good classroom control so that the noise levels were kept to a minimum. As challenges arose, we dealt with them one by one, such as the day Jody arrived at school in uniform and everyone else was in "civvies" as she had not heard the intercom or assembly announcements. After this incident, the school was requested to give her notices in writing or the teacher had to write them on the blackboard. After completing her primary schooling, we opted to enrol her in a private Catholic high school as the class sizes were smaller and we hoped, due to the religious ethos of the school, that the learners would be more accepting, the teachers more caring and the environment generally more inclusive. This was the second major transition for her, especially seeing she had not attended their feeder primary school. Yes, there were communication and other issues along the way, but Jody was happy at this school, had friends and grew into a confident, well-mannered young lady with excellent academic results. The school even assisted with fundraising towards her first cochlear implant, really raising the awareness of hearing impairment amongst her peers, such as inviting Jody to speak to the entire school about her hearing impairment.

In 2000, I left high school teaching and took up a lecturing position at the Cape Peninsula University of Technology (CPUT, formerly Peninsula Technikon and Cape Technikon) in the field of information technology. I had been lecturing for a few years when I noticed a young man sitting on a wooden bench on the ground floor of the faculty. From his disposition he appeared quite dejected. As I approached him to ask if I could assist, I noticed that he had a cochlear



implant. He explained to me how difficult he was finding his studies and that he was failing his course. This young man stirred something in me that day – perhaps it was anger at the injustices that he was facing and perhaps it was the realisation that this is what lay ahead for my own child. I realised that the university had registered a number of students with various impairments but also that there was no formal support structure, so I started doing some informal research regarding disability units at universities and the support that they offered in order to develop a proposal for the institutional management. One of the appointments was with the head of the disability unit at a university in Cape Town, and upon meeting her, I remembered (and with my dad reminding me) that 20 years before she had come for dinner at our home as her husband and my father worked together. She had brought her guide dog with her and played the piano exquisitely that evening. The circle of life is amazing! She inspired me and gave me further hope for Jody's future. Through lobbying for CPUT to establish a disability unit, eventually the funds were made available and permission was given for me to work full-time on its establishment. Subsequently a head of the unit was appointed and a second disability office was established on another campus. Today, many students with disabilities are supported on multiple campuses. I was also involved in the establishment of an institutional disability forum consisting of a group of academics and students interested in making the university accessible for all students.

Through my interaction with the heads of disability units, I became aware of FOTIM (Foundation of Tertiary Institutes in the Northern Metropole) and its SIG (special interest group) for students with disabilities in higher education. At one of FOTIM's annual disability-related symposia, a new national structure named HEDSA (Higher and further Education Disability Services Association) was formed and I served on the executive committee for a period of almost two years as treasurer. Part of my portfolio included overseeing the development of the website found at [www.hedsa.org.za](http://www.hedsa.org.za). During this two-year period, I was also a member of the reference team for a FOTIM Disability in Higher Education research project and travelled to the United Kingdom to visit various organisations and disability units for the purpose of international benchmarking. The report following this visit was published in the latter part of 2010.

In 2009, when Jody turned 16, through an amazing turn of events, we were led to the Cochlear Implant Unit at Tygerberg Hospital. One evening I took Jody and my step-grandchild to see a performance by a small, local circus. When I approached the young lady in the ticket office, I noticed that she was wearing a hearing aid and we got chatting. She told me about a support group for people with hearing impairment and gave me the name and number of the convenor. When Jody and I attended the first meeting of Hear2Day ([www.hear2day.co.za](http://www.hear2day.co.za)), I later learnt that the convenor was a senior audiologist at the Cochlear Implant Unit and we got chatting about Jody (who was not a CI candidate when she was younger). After a number of comprehensive assessments, it was determined that Jody met the criteria for implantation, and so, after

extensive fundraising in the early part of 2009, Jody received her first implant on 15 June 2009 and has not looked back since. I also started a chapter of Hear2Day in our local community in 2010, which still convenes regular meetings.

Going through the process of cochlear implantation was a huge learning curve. As we had not opted for the rechargeable unit for her first implant, she was reliant on disposable batteries. I was informed that these special CI batteries could only be bought from one company in Pretoria or one audiologist in Cape Town and were quite expensive. With my commercial background, I realised the gap in the market, started a company called HearAbility ([www.hearability.co.za](http://www.hearability.co.za)) and began importing cochlear implant batteries from Europe, being able to offer them at a reduced price and easily obtainable via e-commerce. This original service initiative led to requests from customers for other products, with the main product lines now being assistive listening devices such as FM systems and induction loop systems, as well as vibrating watches, clocks and fire/smoke detectors, also allowing for interactions and discussions with other parents of children with hearing impairments. My affinity for technology, it seems, culminated in trying to use it to assist people with hearing impairments, providing access to information and communication, and ultimately an independent life.

Through my involvement with Hear2Day, I met a gentleman with a severe hearing impairment, making use of two hearing aids at the time, and now having received two cochlear implants. He works for the National Council for People with Physical Disabilities (NCPDPSA [www.ncppdsa.org.za](http://www.ncppdsa.org.za)) and advocates for the rights of people with hearing impairment. Together we established an information portal on hearing impairment known as the South African Hearing Institute (SAHI) ([www.sahi.org.za](http://www.sahi.org.za)) and an NGO called the Association for Hearing Loss Accessibility and Development (AHLAD) ([www.ahlad.org](http://www.ahlad.org)). SAHI's primary objective is to provide information to people with hearing impairments, and the objective of AHLAD is to serve as a forum for the advancement of all persons with hearing impairments, promoting independence through the use of technologies as well as the prevention of the occurrence of deafness and hearing impairment, all of which are in line with the UN Convention on the Rights of Persons with Disabilities.

Returning to my professional development, in 2001, I realised that I would have to study for a masters' degree if I wanted to be eligible for promotion at CPUT. In 2003, I completed this degree and started thinking about what was next. Through my involvement in the abovementioned organisations, I came to realise more and more that access to higher education as well as support for hearing impairment was extremely limited and that any future studies that I wished to undertake should be in this area, hoping to effect real change from which even Jody

could benefit. So, in 2008 I registered for a PhD, going back to my roots in education, electing to make use of qualitative research to honour the 'voices' of the participants, and allow me to tell my story too, and that almost brings me to the present day. After trying to be a wife and mother, work full-time, oversee a business and study for a few years, I decided to apply for a scholarship to allow me the time to devote myself solely to my studies. I was so grateful to have been selected as an Ema2SA<sup>2</sup> grantee and made full use of the 7 months in Brno, Czech Republic, to work on my thesis. I was also required to attend at least two academic courses and to give some lectures in my field of study. It was wonderful being a full-time student again. The staff at the Research Institute in Inclusive Education at Masaryk University were most helpful and supportive with regard to my studies.

Returning to Jody – she completed matric in 2011 and was accepted into a Bachelor of Science degree by the University of Cape Town, specialising in Genetics and Bio-Chemistry. The university have made some attempts to accommodate her communication needs, but there is still a long way to go, especially in terms of lecturer awareness and teaching practices. She also received her second cochlear implant on 5 December 2011 which has resulted in improved overall communication, especially in terms of location of sound and less reliance on lip-reading. She is now able to speak with me on the telephone, or Skype, allowing us to communicate during my absence. I am extremely proud of Jody for what she has achieved, how she approaches and tries to overcome the barriers that she faces, and hope that the recommendations of this research will be implemented so that her burden, as well as the burden of other students with hearing impairments, can be lessened.

I would like to believe that my experience as, firstly a mother of a child with a hearing impairment, a teacher and my involvement with hearing-loss and disability-related organisations have added depth and reflection to my choice of language and terminology, the interpretation of the data, conclusions conceived and recommendations made, and has further provided additional value to this piece of writing. To conclude, looking back it seems that every twist and turn in my life path had led me to where I am today. It seems that my journey is not yet complete as I still have lots to accomplish along the path to finding my most fulfilled self. I am not sure how far I am in my journey or where I will be in the future, but this I know for sure: each step has brought additional fulfilment and made me feel that I have some purpose on this earth.

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<sup>2</sup> Ema2SA is a project providing scholarships for study abroad in Europe under the umbrella of Erasmus Mundus

## **CHAPTER 1**

### **THE RESEARCH PROBLEM AND CONTEXT**

#### **1.1 INTRODUCTION**

The main aim of this inquiry was to analyse and describe the teaching and learning (academic) experiences of students with hearing impairments, using the oral method of communication, at a 'hearing' university in the Western Cape with a view to improving overall academic support and helping to create a more inclusive academic environment. A focus on what it means to be a student with a hearing impairment, curriculum transformation, current learning support provided, barriers to learning experienced as well as various coping strategies employed by a sample of students with hearing impairments, is included. Additionally, an elucidation of the factors that students with hearing impairments perceive would enhance their attainment of successful academic outcomes is incorporated. It was anticipated that, by obtaining the views of the students themselves, by listening to their real-life experiences, this would provide improved understanding of the phenomenon under examination and that the knowledge gained from their willingness to share would afford new insights and so inform higher education practice and policy. This research employed a qualitative case study design, informed by an interpretive (constructivist) paradigm, to illustrate and illuminate the phenomenon under examination. Participants of this study included a purposefully selected group of participants, consisting of seven students with hearing impairments, a support staff member from the disability unit and lecturers with experience of teaching students with hearing impairments. In this study, the data were generated primarily through the use of semi-structured interviews, supported by data from the questionnaires and educational documentation.

This chapter begins with an explanation regarding choice of language as well as providing an overview of the context and background that frames the study. A discussion of the proposed rationale and significance of this research study is also offered. Following this is the statement of the problem, the statement of purpose, and accompanying research questions. Also included in this chapter is an explanation regarding the research approach, design strategy and methodology as well as my assumptions and perspectives as primary research instrument. Additionally, ethical considerations as well as definitions of some of the key terms used are included. This chapter culminates with an outline of the structure of the thesis.

## 1.2 THE POWER OF NAMING

I am aware that language is an important and powerful tool which can be used to shape ideas, perceptions and ultimately, public attitudes, and that these social perceptions and attitudes are, in turn, portrayed by one's choice of words.

Language ... has as much to do with the philosophical and political conditioning of a society as geography or climate ... people do not realise the extent to which their attitudes have been conditioned to ennoble or condemn, augment or detract, glorify or demean. Negative language inflicts the subconscious of most ... people from the time they first learn to speak. Prejudice is not merely imparted or superimposed. It is metabolized in the bloodstream of society. What is needed is not so much a change in language as an awareness of the power of words to condition attitudes (Anon., 1967:3).

Words and statements we use to speak about disability play an essential part in the way that we view people with disabilities (Oliver & Barnes, 1998). As further explained by Foucault, "discourses systematically form the object of which they speak" (Foucault, 1972:49) and "power produces; it produces reality; it produces domains of objects and rituals of truth" (Foucault, 1977:194). We should therefore be particularly careful of our choice of vocabulary which ultimately forms attitudes. For persons with disabilities, attitudes can be the most difficult barrier that they face in achieving full integration, acceptance and participation in society. It was therefore important to be clear regarding the language and terminology used in this study. The language that I chose to make use of in this study is both in line with the social model of disability as well as with a publication by the Social Development Department in Canada (Government of Canada, 2003), aptly named "A way with words and images: Suggestions for the portrayal of persons with disabilities", which advocates the use of person-first language. This form of English expression is used to avoid any type of dehumanisation when discussing people with disabilities. It also forms part of disability etiquette and "reflects the inclusive value of human diversity" (Swart & Pettipher, 2011:9). Moreover, by employing person-first language, one manages to internalise the notion of disability as a secondary feature rather than a distinctive trait of a person's identity. Some critics argue that by separating the "person" from the "trait" it implies that the trait is innately bad; resulting in the dehumanising of people with disabilities (Vaughan, 1997, 1999). I disagree and retort that placing the person first makes him or her more human and enhances his or her dignity. As a result, I have written my thesis using person-first language, using phrases such as, 'student with a hearing impairment' or 'hearing impairment', and 'person with a disability'. I also made a deliberate attempt to avoid using any words that might conjure up positive or negative emotional responses in an effort to respect the dignity of individuals with disabilities. In addition, the *Journal of Disability and Society's* (Anon., 1994) editorial on language policy was considered in understanding the language of disability that has been adopted in this study. It must be noted, however, that despite my personal preference, I do respect the choice of those who prefer to use the term 'disabled students' or 'deaf students'.

**Table 1.1: Disability-friendly language**

<b>Disability-friendly expressions</b>	<b>Disability-unfriendly expressions</b>
A disabled person/a person with a disability	The disabled/handicapped/a person with special needs
A person who has mobility difficulties / a wheelchair user	Mobility impaired/wheelchair bound/confined to a wheelchair
A person who has a hearing impairment/impairment/a person who is D/deaf	The hearing-impaired/the D/deaf
A person who has visual impairment/a person who is blind	The blind
A non-disabled person	An able-bodied person
An accessible toilet	A disabled toilet

(Barnes & Mercer, 1997; Oliver & Barnes, 1998)

Furthermore, regarding terminology, the term 'sensory impairment' refers to a condition where one of the senses – sight, hearing, smell, touch, taste or spatial awareness – has been compromised. Persons with sensory impairments may be blind, visually impaired, Deaf, deaf or hearing impaired. 'Deafness' is a term used to cover the whole spectrum of hearing impairment and people with a hearing impairment may be divided into two main groups in South Africa: hard of hearing and Deaf (Deaf Sword of South Africa, 2008). According to Deafnet (NID, 2011),

Deaf people who cannot hear well enough to distinguish speech, prefer to use Sign Language to communicate with other people and see themselves as a language and cultural minority group in society. They usually choose to be referred to as 'Deaf' with an uppercase 'D'.

Individuals who are hard of hearing (abbreviated as HoH) often hear well enough to understand speech, usually with the assistance of a hearing aid or hearing aids and/or a cochlear implant or implants. They use their voice to communicate with hearing people and use speech reading (of which lip-reading forms part) to receive communication from hearing people. They do not use Sign Language as their primary means of communication. Hard-of-hearing people can range from those who identify more with hearing people to those who tend to associate themselves with the Deaf community/culture, who use Sign Language and who see themselves, regardless of level of hearing status, as Deaf (National Institute for the Deaf, 2011). Moreover, individuals who identify as Deaf see themselves as belonging to a Deaf community because they share (a) a 'recognised' language, (b) common experiences, and (c) a history with others who are Deaf (Padden & Humphries, 1988).

For this study I have elected to make use of the generic terms "hearing impaired" or "hearing impairment" which, is defined by the IDEA (1997) Act as "... an impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational performance ...". To my mind, the terms 'deaf' or 'Deaf' indicate a complete absence of any hearing, the inability to acquire spoken language and also has the connotation of 'deaf and dumb'. Although some critics argue that the terms 'hearing impairment' and 'hearing impaired' draw attention to the individual's perceived deficit (within a hearing world) (Wareham, Clark & Laugesen, 2001), I view these terms

as being less emotive, less derogatory and broadly encompassing the various degrees of hearing impairment experienced by people with hearing impairment in general, as well as by the participants in this study.

The word 'special' is also an ambiguous term that can, depending on the context, mean 'peculiar', 'unusual' or 'of special importance' (Concise Oxford English Dictionary, 2004:1110). It is often used to describe schools for learners with disabilities termed 'special schools', or 'schools for learners with special needs', or 'special' accommodations to support their needs and even the name of a disability unit at a university may include the word 'special'. 'Special' may refer, for example, to an individual's exceptional talent or at worst, someone's lack of talent for particular activities, thus purporting either a negative or positive connotation (Vehmas, 2010:91). Although in the context of special education, the term 'special need' refers to an ability or activity that is viewed as important or even necessary for people; Vehmas (2010) asserts that the 'special need' rhetoric is based on the traditional individualistic, psycho-medical model, in which the individual's problems are explained by his or her deficits. Furthermore, the concept of 'special need' may be viewed as a euphemism for the term 'inadequacy' (Van Rooyen, Le Grange & Newmark, 2002:5). It is for these reasons that I elected not make use of the term 'special need student' or 'student with a special need', and instead refer to 'students with hearing impairment/s' or a 'student with a disability'.

The word 'support' when referring to services provided to students with hearing impairments (or any other impairment) is contentious. Saur (1992:97) believes that words such as 'support' "... foster a view of Deaf [hearing-impaired] students as passive and dependent, receiving what they need from protective, all-knowing support providers." Saur (1992) also suggests that the term 'resources' should rather be used as it implies that students use resources and are not provided with support. Although I am in agreement with Saur's argument, in this study, and especially in relation to the developed Learning Support Framework, the use of the term 'support' is related to the concepts of 'reciprocity', 'interrelatedness' and 'interaction' as outlined in Bronfenbrenner's bio-ecological systems theory (Bronfenbrenner, 1979; 1992; 2005; Bronfenbrenner & Morris, 1998).

Additionally it is important to explain how and why I have used the terms 'disability' and 'impairment'. Whilst people may have impairments, such as a hearing impairment, disability is the ultimate outcome of the interaction between people with impairments and the environmental as well as the attitudinal barriers that they face. I have, therefore, used the term 'disability' to refer to the broader concept of disability when referring to, for example, disability models, disability legislation, and such. I have also chosen to use the term 'students with disabilities' rather than 'students with impairments'. In conclusion, I deliberately chose to use language and terminology that are not only sensitive to preserving the dignity of people with disabilities but which may also contribute towards changing societal attitudes, but most importantly to reflect the vision of inclusion and contribute to its realisation in South Africa.

### 1.3 BACKGROUND AND CONTEXT

It is estimated that the average prevalence rate of disability, across 59 countries and some 650 million people, is 15,6 per cent, ranging from 11,8 per cent in higher-income countries to 18,0 per cent in lower-income countries (WHO and The World Bank, 2011). Although the measurement of disability presents many challenges and the fact that the usefulness of the data is limited due to not being inclusive of the entire extent of disability, in South Africa, the following statistics do provide a general idea of disability prevalence. The 2001 Census (SSA, 2005) reported a figure of 5 per cent, the 2010 Human Rights Report (Bureau of Democracy Human Rights and Labor, 2011) mentions a prevalence rate of 7,9 per cent of the general population and the 2010 General household survey (SSA, 2010) states that 6,3 per cent of South Africans aged 5 years and older were classified as disabled. Averaging these figures out means that 6,4 per cent of all South Africans are disabled in some way (refer to 2.3.2 for a discussion regarding the reliability of these statistical data).

Hearing impairment is recognised as a global pandemic (Tucci, Merson & Wilson, 2009), with figures more than doubling between 1995 and 2005. Approximately three per one thousand babies are born with a significant hearing impairment, with hearing impairment being the most common congenital abnormality found in newborns. According to DeafSA (1997), the rate of hearing impairment in South Africa (from mild to severe and profound hearing impairment) is estimated at 10 per cent of the population. Turning to the school sector, in 2007 the Department of Basic Education reported that 7 785 hard of hearing (HoH)<sup>3</sup> learners were placed in ordinary schools and 1 414 HoH learners in special schools, totalling around 9 000 learners. However, available figures relating to higher education report that the numbers of students with hearing impairment at university in 2003 comprised 155, increasing year by year to a total of 326 in 2010. Thus, considering both the country's prevalence rate and the numbers of learners in the school sector with hearing impairments, the proportion of students in higher education is extremely low. Furthermore, employment levels are very low, with persons with disabilities only making up approximately 0,8 per cent of the total workforce which should be measured against the 2 per cent target set by government for the public service to achieve in 2005, which was later extended to 2010 and to date has not even been achieved by 50 per cent (Department of Labour, 2012:31).

Over the last 20 years there have been challenges to dominant perceptions of and attitudes to people with disabilities (CHE, 2005) with the Disability Rights Movement helping to shift the construct of disability from the 'problem' laying with the individual to society being responsible for creating the disabling conditions (Hevey, 1993). The medical deficit model of disability was predominant prior to 1980, resulting in a segregated education system based on the notion of

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<sup>3</sup> The term hard of hearing (HoH) is used to classify persons with hearing impairment in South Africa and is the preferred terminology by the Department of Basic Education. The term refers to individuals with some residual hearing, which can be amplified. In this study, it is synonymous with the term 'hearing impaired'.



treatment. Due to major criticism and changing societal perceptions, disability activists and academics developed the social and post-social models of disability (Barnes, 2004; 2008a; Barton, 2004; Corker & Shakespeare, 2002) in opposition to the dominant medical model as a new way of conceptualising disability. The new dominant model, however, is also not without criticism (Reindal, 2008; Shakespeare, 2006). Further impetus for change to a more inclusive society was provided in the 1990s when the World Declaration on Education for All was adopted in Jomtien, presenting an overarching vision for the future, namely universalising access to education for all children, youth and adults, as well as the promotion of equality. The most significant push towards inclusion globally has been the Convention on the Rights of Persons with Disabilities (UNCRPD), being the only international legal instrument dedicated to the rights of persons with disabilities, with article 24 focusing on education (UNESCO, 2006).

The changes in global initiatives regarding inclusive education have influenced the drive towards inclusion in South Africa (Naicker, 2000). The social model of disability has informed the development of inclusive education policies and on 30 November 2007 South Africa became a signatory of the UNCRPD, although domestication of the UNCRPD still has to take place at a local level. Legislation and policies provide the framework for inclusion, with the South African Constitution, including the Bill of Rights which speaks of the fundamental right to a basic education, being of paramount importance. The policy framework put into place by government to drive inclusive education within the higher education sector includes Education White Paper 3 on the Transformation of the Higher Education System (SA, DoE, 1997b), the National Plan for Higher Education (SA, DoE, 2001b) which is intended to operationalise the imperatives stated in White Paper 3 and Education White Paper 6: Special Needs Education: Building an Inclusive Education and Training System (EWP6) (SA, DoE, 2001a). Despite the broad commitments expressed in the policy and legislation towards addressing the needs of previously disadvantaged students, including students with disabilities, it seems that some change has taken place but not nearly enough, leaving many students without access to higher education or sufficient learning support to accommodate their needs. There are glaring gaps between theory, policy and practice (AfriNEAD, 2009; CHE, 2005; Howell, 2005; 2006). This lack of implementation was highlighted in the recent Green Paper on Post-School Education and Training (SA, DHET, 2012:10–11), highlighting the fact that “the system still bears the marks of apartheid” such as “lingering discrimination” and problems with regard to “access ... and other forms of student support”. There is also an intention in this document to address ongoing inequalities with regard to disability.

Despite the increase of access to and participation of students with disabilities in higher education, many barriers, such as physical and attitudinal, still exist. The shift or transition into higher education is also a difficult and complicated process for students with disabilities, with support services playing a major role. For students with hearing impairment, in particular, the barriers faced are primarily related to language and communication. Often hearing impairment leads to

significant speech and language delays which may affect social integration. Students with hearing impairments may be in a position to master the academic content but their ability to demonstrate academic performance may be compromised due to delays in developing communication, language, reading and writing skills (Luckner & Bowen, 2006). These implications of hearing impairment on the individual vary depending on factors such as degree of loss and age of onset, but ultimately may severely affect educational outcomes. It appears that although there has been an increase in the number of students with hearing impairments gaining access to higher education in South Africa during the last two decades, these students remain under-represented and under-supported at university. This study, therefore sought to shed light on the experiences of students with hearing impairments in higher education, trying to understand the barriers experienced, learning support received and the various coping strategies employed.

#### **1.4 RATIONALE AND SIGNIFICANCE**

The rationale for this study emanated from my desire to see many more students with hearing impairments granted access to study at university, to uncover ways to improve academic support for these students to ease their burden and ultimately to see an overall more inclusive higher education system in South Africa. Literature reveals that students with disabilities, but notably with hearing impairments are under-represented and under-supported in higher education resulting in poor academic outcomes, with high levels of attrition.

There is the potential for the outcomes of this study to be of significance for various stakeholders. First, it would allow students with hearing impairment to be better prepared and to know which types of academic support to expect prior to entering university. These students could also be made more aware of their rights to an accessible teaching and learning environment in higher education, resulting in increased disclosure and demand for accommodations (including variety). Furthermore, they would be better informed regarding the availability of communication aids and other assistive technologies as a result. Second, staff working in disability units that support students with hearing impairments could be better informed, possibly using this knowledge not only to facilitate equal access to information and communication but also to lobby for additional funding and overall promote an inclusion agenda. Third, lecturers could be encouraged to attend professional development courses which are disability-related thereby raising their general awareness level, which may lead to changes in attitudes and a more inclusive approach to teaching. There is also a need to help shift the responsibility of disability-related issues from specialist services to all departments by raising the profile of disability issues within universities. Wider ownership helps embed disability issues across the HEI. Moreover, improving the provisions made for students with disabilities will ultimately enhance the educational experience for *all* students, for example a lecturer having to repeat questions asked and answered in class, will

not only be to the benefit of the student with a hearing impairment, but all of the students could benefit because of the repetition.

Steps taken to make higher education genuinely inclusive for students with hearing impairment, resulting in improved educational outcomes may not only afford these students better chances of employability, financial independence and ultimate happiness, but also have the potential to be of benefit to society at large.

## **1.5 STATEMENT OF THE PROBLEM**

Globally hearing impairment is the most common congenital anomaly diagnosed in infants and hearing impairment is the largest single disability grouping in South Africa. However, even though the National Plan for Higher Education (SA, DoE, 2001b) promotes the widening of access to previously disadvantaged students, including those with disabilities, such as hearing impairment, this has not yet transpired. Available statistics indicate that participation by students with hearing impairments in higher education remains low (SA, DHET, 2010a) and research suggests that support provisioning for those who do gain access is inadequate. Many barriers, both physical (including access to information and communication) and attitudinal are experienced by these students (CHE, 2005; SA, DoE, 1998; Howell, 2006; Howell & Lazarus, 2003). International research also provides evidence of low persistence (or high attrition) rates with poor educational outcomes for students with hearing impairments (Rawlings, Karchmer, DeCaro & Allen, 1991; Stinson & Walter, 1992). This has major implications for the economic future of these bright, young individuals.

Furthermore, although some research has been conducted within the higher education (and school) environment in South Africa regarding students who are Deaf, very little is known about the educational experiences and/or academic support provided to students who are hearing impaired and who are making use of the oral method of communication. It is often assumed that, as they make use of hearing aids and cochlear implants for hearing augmentation, “they are not actually deaf” (as commented by the Minister of the DWCPD during a university fact-finding visit in July 2012) (Du Toit, 2012) and therefore can cope without any additional support. This is very far from the truth, as many students with hearing impairments who are making use of the oral method of communication still require additional learning support, assistive listening devices and reasonable academic adjustments.

Based on the aforementioned facts, I argue that there is a dire need for new knowledge in this area, providing evidence of the genuine experiences of students with hearing impairments in higher education in South Africa.

## **1.6 MAIN RESEARCH QUESTION**

The research question, emanating from the contextual orientation as well as the researcher's personal experiential knowledge, both as a mother of a child with a hearing impairment and as a lecturer, led to the formulation of this pertinent research focus. This study therefore intends to answer the following main research question:

*How do students with hearing impairment using the oral method of communication experience teaching and learning support?*

## **1.7 RESEARCH SUB-QUESTIONS**

To shed light on the outlined problem and to answer the main research question, the following sub-questions were addressed:

- (a) Which, if any, curriculum transformation has occurred in order to accommodate the needs of students with hearing impairments?
- (b) Which support is provided by the university to students with hearing impairments?
- (c) Which barriers, in relation to teaching and learning, do students with hearing impairments experience and how do they attempt to overcome them?
- (d) Which factors did participants perceive might help them to complete their studies successfully?
- (e) Which components (both academic and non-academic), within the context of higher education, should be encompassed in a holistic Learning Support Framework?

## **1.8 MAIN RESEARCH GOAL**

The intention of this study was to analyse and describe the teaching and learning (academic) experiences of students with hearing impairments at the case study university. It was anticipated that, by obtaining the views of the students themselves, this would provide improved understanding of their authentic experiences.

## **1.9 RESEARCH SUB-GOALS**

From this main goal, the following sub-goals were derived:

1. to investigate the existing academic support, including both human and technical, which is available to students with hearing impairment;
2. to identify and describe the academic challenges with which they are faced;
3. to explore and describe the personal coping strategies which these students employ in order to overcome these barriers;

4. to identify which factors students with hearing impairment view as being critical to their academic success at university; and
5. to develop a learning support framework for students with hearing impairments as well as guidelines for lecturers teaching these students.

Assuming that all of the abovementioned goals are achieved, the findings and recommendations from this study have the potential to lead to an easier transition into higher education, improved persistence and ultimately a more successful academic outcome for students with hearing impairment in higher education than is the case at present.

## **1.10 DESIGN AND METHODOLOGY OF THE STUDY**

With the approval of the departmental research committee (refer to section 4.7) as well as the university's ethics committee for Human and Social Sciences, I investigated the experiences and perceptions of seven students with hearing impairments as well as seven lecturers who had taught students with hearing impairment. A staff member from the disability unit was also interviewed concerning institutional support for students with hearing impairments. The student participants comprised four males and three females, with the majority studying at undergraduate level (see also section 4.3).

### **1.10.1 Research approach**

An interpretive (constructivist) framework, which aimed for human action to be understood from the insider's perspective, together with qualitative methods, was used in this study. As explained by Henning, Van Rensburg and Smit (2004:20), "the (qualitative) interpretive researcher believes the goal of science is to hold steadfastly to the goal of getting it right about reality or multiple realities even if we can never achieve that goal." As knowledge is constructed not only by observable phenomena, but also by descriptions of people's intentions, beliefs, values, reasons, meaning-making, as well as self-understanding, this study sought to investigate the (life) world of the university student with a hearing impairment and to appreciate his or her personal experiences related to the academic environment.

Use of a positivistic paradigm and a quantitative methodology would not have been able to fulfil the objectives of the study, answer the main question as well as the five sub-questions or provide for an in-depth understanding and enquiry (Henning *et al.*, 2004). A qualitative methodology, in contrast, makes space for the freedom and natural development of action and representation that one would want to capture, allowing for the qualities, characteristics or properties of the phenomenon being examined for better understanding and explanation. Progressing with the research using a qualitative methodology, one of my main aims was to find patterns (and actions) within and across the words shared and to stay as close as possible to the construction of the

world as the participants originally experienced it and shared with me (see also section 4.3 for more detail).

### **1.10.2 Research design and strategy**

Yin (2003:13–14) defines a case study as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident”. The design strategy for this inquiry was a qualitative case study, helping to answer both the main research question as well as the sub-questions. Merriam (2009:40) argues that the single most defining characteristic of case study research lies in “delimiting the object of the study, the case, namely the notion of the case as a bounded integrated system”. The current study fits well with both Yin’s definition as well as Merriam’s explanation as it sought to investigate and understand the experiences of students with hearing impairments at a ‘hearing’ university. Furthermore, in this instance, the context of the case study was a specific university and the boundaries (unit of analysis) were registered students with hearing impairments making use of the oral method of communication, lecturers with experience of teaching students with hearing impairments, as well as a staff member from the disability unit. The qualitative case study, as a design strategy, was also suitable for use in this inquiry as it is commonly used in education, often focusing on questions, issues and concerns broadly related to teaching and learning. This study was also descriptive in nature, describing the experiences of being students with hearing impairment in a ‘hearing’ university (see also 4.3, 4.4 and 4.6 for additional information).

### **1.10.3 Research methodology**

Research methodology focuses on the research process, tools and procedures used to generate the data. In this study, the qualitative data were generated from the use of semi-structured interviews and was supported by additional data from questionnaires and educational documentation such as university policies, guidelines and reports as well as the audiological and academic records of the students. Research participants were purposefully selected, having to meet specific criteria. The data generated through 15 individual interviews formed the basis for the overall findings of the study. Each participant was identified by a pseudonym, and all interviews were digitally recorded and transcribed verbatim. Throughout the research process, a case study database was maintained, including the interview audio files and all other electronic data relevant to the case. ATLAS.ti was used to build a hermeneutic unit, consisting of the following primary documents: transcribed interviews, scanned newspaper clippings, electronic articles related to the study and university documentation. After importation of all the primary documents, ATLAS.ti was used to code the data using the constant comparative method founded in grounded theory. Three levels of coding, namely open, axial and selective coding were applied to the data (Charmaz, 2006; Strauss & Corbin, 1990). The software also facilitated the data transformation, both textually and

conceptually. Although the nature of this qualitative study did not allow for traditional quantitative triangulation of data, a comprehensive review of the relevant literature and peer review helped to shape and refine the selected data generation tools. Similarly, coding categories were developed and refined on an ongoing basis, guided by the conceptual framework of the study. Issues related to data trustworthiness, namely credibility, transferability, dependability and confirmability were paramount in this study as I attempted to control any potential bias and ensure accuracy of the data (refer also to sections 4.8, 4.9, 4.10, 4.11 and 4.12).

### **1.11 CONTEXT**

This research took place in the university context, where the experiences of students with hearing impairment were considered from their personal perspectives, lecturers' perspectives, and the perspectives of a support staff member from the disability unit. The students were all studying at a university in the Western Cape, most coming from the mainstream schooling environment, except for one participant who attended a special primary school for the Deaf.

### **1.12 ETHICAL CONSIDERATIONS**

Disability scholars see ethical issues as part of every aspect and facet of a research project, from the choice of a study area to methodology, to data analysis, conclusions, and formulating recommendations (Bines, 1995:51–53). In terms of this study, the choice of a topic was catalysed by my interactions with people with hearing impairments over the years, especially university students attending the same support group (Hear2Day) and conversations with heads of university disability units through my involvement with HEDSA (see also section 4.13).

Mertens (1998:23–25) states that ethics in research should be an integral part of the research planning and implementation process. The maintenance of reflexivity throughout this study increased the critical reflection on the processes and procedures in doing the study. The following considerations were of particular significance:

- The privacy and confidentiality of the research participants. This aspect was explained to the participants, namely the students with hearing impairments, the lecturers and the staff member from the disability unit.
- Obtaining informed consent. A consent form was used to gain the formal permission decision of participants in the study.
- The study took place within the ethical requirements of the university, and data generation did not commence until ethical clearance had been obtained (refer to Appendix A as well as section 4.13).

### 1.13 THE RESEARCHER

This section should be read in conjunction with the preface on pages xx–xxix. In qualitative research, it is important for the researcher to identify his or her personal values, assumptions and biases at the outset of the study, as he or she is they are the primary data generation instrument and as Locke (in Creswell, 1994:163) asserts, “this contribution to the research environment can be quite beneficial, rather than disadvantageous.” These are the issues that the researcher invariably invokes from his/her background, experience and previous studies.

Scheurich (1994:18) remarks,

... one's historical position, one's class (which may or may not include changes over the course of a lifetime), one's race, one's gender, one's religion, and so on – all of these interact and influence, limit and constrain production of knowledge.

If this is the case, then as a mother of a daughter with a profound bilateral sensori-neural hearing impairment (who was mainstreamed from Grade 1 and who uses the oral/aural method of communication through the use of two cochlear implants) and as a lecturer in higher education, as well as being personally involved in the disability sector (related to hearing impairment and as well as other disabilities) in South Africa, I bring certain lived experiences to the study, which have played a role in shaping my personal beliefs and views. I not only bring practical experience as a working professional having knowledge and understanding of the environmental context but also an intimate acquaintance with hearing impairment, its associated educational implications and critical intervention strategies to facilitate a successful academic outcome. In spite of these ethics issues, according to Strauss and Corbin (1990:221), qualitative research strives for honesty as a central goal; and this is what I have tried to achieve. Bryman and Burgess (1994) argue that, within this qualitative process, whereby issues are viewed through the eyes of the participants, the possibility of the researcher imposing predetermined ideas and values on the particular study is diminished. Although the main goal of qualitative research is to move with *Verstehen* (interpretive understanding) towards *Erklären* (explanation), Henning *et al.* (2004:9) purport that it is important to note that true understanding also implies explanation. As researcher, I have interpreted in the process of trying to understand, but at the same time I have striven to let the voices of the participants speak louder than my own voice at all times.

I do, however, acknowledge that these experiences that were so valuable in providing insight could also have served as a liability, biasing my judgement regarding research design and the interpretation of the findings. I tried to overcome this in a number of ways, firstly, by making any assumptions explicit at the outset of the study, and secondly, by remaining committed to engaging in ongoing critical self-reflection by way of ‘memo-ing’ in ATLAS.ti as well as through dialogue with professional colleagues. Moreover, to address my subjectivity and to strengthen the credibility of



the research, various procedural safeguards were taken, such as the use of multiple sources of data and member checks with professional colleagues as well as with participants.

#### **1.14 ASSUMPTIONS**

Based on my experience and background as an academic, a mother of a child with a profound hearing impairment, previous disability-related research and my involvement in the disability sector, I made a number of assumptions. These assumptions will be revisited in Chapter 7 to determine whether they held true or not.

The first assumption was that students with hearing impairments, lecturers and the support staff member would respond positively to the invitation to participate in the study and that all three groups of participants would participate by fully engaging during the semi-structured interviews. This assumption was informed by my preconceived idea that they would all view the study as important and that this could be an opportunity for them to effect real change. The second assumption was that students with hearing impairments would identify themselves as being disabled. This assumption was based on the premise that they would actively seek out support at the university due to the barriers that they face, and in order to solicit this support, they would have to disclose that they had a disability – to the disability unit, their lecturers and their peers. Third, I assumed that no curriculum transformation to accommodate the needs of students with hearing impairment had taken place. Fourth, I made the assumption that the university used in the case study, provided little academic support to students with hearing impairments. Fifth, I assumed that students with hearing impairment are faced with many educational barriers and that they devise their own strategies in an attempt to overcome them. The third, fourth and fifth assumptions were guided by my knowledge and experience of teaching practices in higher education, prior informal dialogue with students with hearing impairments, conversations with heads of disability units through my work within HEDSA, as well as the experiences of my daughter whilst in the mainstream schooling environment. Finally, from a theoretical perspective, I initially assumed that I would use the social model of disability as my framework as it is currently the normative model. Through reading and reflection, however, I discovered that the framework for the ecological systems theory based on Bronfenbrenner's past and more recent works (Bronfenbrenner, 1979; 1992; 2005; Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Evans, 2000; Bronfenbrenner & Morris, 1998), namely the bio-ecological model, aligned with my personal views regarding the interaction of systemic layers with the individual being at the centre of these interactions, and provided a way to make sense of the experiences of students with hearing impairments in higher education when interpreting the data than any other model.

In addition, the methodological assumptions related to epistemology, and ontology needs to be explicated. As suggested by Hitchcock and Hughes (1995:21), ontological (What is truth/reality?) assumptions give rise to epistemological (How can we know?) assumptions, which leads us to methodological and other considerations. In this study, in terms of my ontological assumptions, I assumed the view that the internal and subjective experiences of the participants were important to answering both the main research question and sub-questions, and for this reason, a qualitative approach was followed. Furthermore, I opposed the idea that knowledge is hard and objective, rather assuming the importance of listening to, understanding and interpreting the lives of the research participants, thereby making use of interpretative research.

## **1.15 DEFINITIONS OF KEY TERMINOLOGY USED IN THIS STUDY**

It was necessary to clarify the following important terms:

### **1.15.1 Assistive listening devices (ALDs)**

Assistive listening devices form part of the category of assistive technology (AT) which refers to “any item, piece of equipment, or product system, whether acquired commercially off-the-shelf, modified, or customised, that is used to increase, maintain or improve the functional capabilities of individuals with disabilities” (US Assistive Technology Act of 1998). ALDs help to increase the signal-to-noise ratio (SNR), which is important for people with a hearing impairment. For people with hearing disabilities, the SNR needs to be higher than for people with normal hearing in order for them to hear speech over background noise. There are three main types of ALDs, namely audio loops, frequency modulation (FM) systems, and infrared devices.

### **1.15.2 Deaf or Deafness (with a capital D)**

Deafness describes a hearing impairment that is so profound that the auditory channel (the ear) cannot function as the primary mode for perceiving and monitoring speech or auditory language (Paul & Quigley, 1990:56). Many individuals who are pre-lingually Deaf make use of Sign Language, such as South African Sign Language (SASL) as their first language, belong to the Deaf community and are proud of their Deaf culture.

### **1.15.3 Disability**

The conceptualisation of disability in this study is linked to both the social model's understanding of disability as being the restriction or disadvantage of activity caused by society, which takes little or no account of people who have impairments and thus excludes them from mainstream activities (Oliver, 2004a; Finkelstein, 2001), as well as Bronfenbrenner's bio-ecological model (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 1998) which focuses on the interactions between the individual and his/her environment. The social model redirects the focus from impairment on to disability and emphasises the disabling social, environmental and attitudinal barriers, rather than

lack of ability by individuals (Samaha, 2007:1257). Thus, while impairment is the functional limitation which affects a person's body, disability is the loss or limitation of opportunities resulting from direct and indirect discrimination (Barnes, 1997; Barton & Oliver, 2000; Finkelstein, 2005). Oliver (1990:11; 1996:33) speaks of disability as a disadvantage caused by contemporary social organisation which takes little or no account of people with impairments. Phrased differently, one could view disability as an exclusion based on the grounds of impairment.

#### **1.15.4 Hearing impairment/Hearing impaired**

'Hearing impairment' is the generic term used to describe any level of hearing loss, ranging from mild to profound (Paul & Quigley, 1990:56). 'Hearing impairment' is the preferred term used throughout this study as it fits in with the social model of disability, namely that the effects of impairment result in the phenomenon of disability. Furthermore, according to Barnes (1991:2), "impairment is the functional limit at on within [*sic*] the individual caused by physical, mental or sensory impairment" and "disability is the loss or limitation of opportunities to take part in the normal life of the community on an equal level with others due to physical and social barriers." This distinction is important and is a critical argument in this study. In addition, use was made of 'person-first' language in this study, i.e. students with hearing impairment or students with hearing impairments.

#### **1.15.5 Higher education**

South Africa's National Qualifications Framework (NQF) (SA, DoE, 1997a) recognises three broad bands of education: General Education and Training (GET), Further Education and Training (FET), and Higher Education and Training (HET). Higher Education and Training, or tertiary education, includes education for undergraduate and postgraduate degrees, certificates and diplomas, up to the level of the doctoral degree, and refers to the education that normally takes place in universities and other higher education institutions (HEIs), both public and private, which offer qualifications on the Higher Education Qualifications Framework (HEQF) (SA, DHET, 2012).

#### **1.15.6 Inclusion**

Inclusion is seen to involve the "identification and minimising of barriers to learning and participation and the maximising of resources to support learning participation" (Booth & Ainscow, 2000:13). UNESCO views inclusion as "a dynamic approach of responding positively to pupil diversity and of seeing individual differences not as problems, but as opportunities for enriching learning" (UNESCO, 2005:12). Inclusion can be described as a "reconceptualisation of values and beliefs that welcomes and celebrates diversity, and not only a set of practices" (Swart & Pettipher, 2011:8).

### **1.15.7 Inclusive education**

Inclusive education (IE), according to UNESCO (2009:8) is –

... a process of strengthening the capacity of the education system to reach out to all learners...an overall principle that should guide all educational policies and practices, building on the premise that education is a basic human right and the foundation for a more equal and just society.

IE is also part of the key strategy to achieve Education for All (EFA) (Inclusion International, 2009). Furthermore, an inclusive education system is responsive to the diverse needs of all learners, and therefore includes all learners with special education needs as it recognises their right to equal access to education at all levels (UNESCO, 1994:11–12).

### **1.15.8 Mainstreaming**

According to Swart and Pettipher (2011:7),

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.

### **1.15.9 Oralism**

Oralism advocates teaching children with hearing impairment a spoken language as their first and only language. This method emphasises the learner's development in the areas of speech, lip-reading and the amplification of residual hearing (Paul & Jackson, 1993:44).

### **1.15.10 Reasonable accommodation**

'Reasonable accommodation' refers to necessary and appropriate modification and adjustments not imposing a disproportionate or undue burden (on society), where needed in a particular case, to ensure to persons with disabilities the enjoyment or exercise on an equal basis with others of all human rights and fundamental freedoms (UN, 2006).

## **1.16 BRIEF OUTLINE OF CHAPTERS**

The primary goal of this study was to analyse and describe the teaching and learning (academic) experiences of students with hearing impairments at the case study university.

Chapter 2 partly consists of the literature on disability models, prevalence and research, as well as the concept of hearing impairment, including literature on types and prevalence of hearing impairment and communication accessibility. The concept of disability is also defined.

Chapter 3 contextualises the thesis by providing an overview of inclusive education both globally and locally. It further reviews literature on accessibility in higher education, focusing on types of support services provided to students with hearing impairments as well as the accessibility of the

curriculum. Thereafter, literature relating to the barriers faced and the coping strategies used by students is presented. This chapter relates to research sub-questions two, three, four and five.

Chapter 4 covers the empirical section of this thesis, that is, the research design and methods used to generate and transform the data in order to answer the research questions posed in this study.

Chapter 5 presents the findings of the study. The data generated from the student participants (by way of interviews and questionnaires), academic and support personnel participants as well as the document analysis are presented.

Chapter 6 serves to interpret the data which was generated, and explicate the themes that emerged.

Chapter 7 concludes the thesis by drawing conclusions and proffering recommendations as a way forward for real inclusion of students with hearing impairments in higher education in South Africa.

An appendix to the thesis is also provided, namely 'Guidelines for teaching students with hearing impairment in higher education' (see Appendix L).

## **1.17 CHAPTER SUMMARY**

Chapter 1 served to present the research problem that was investigated, the rationale and significance, the background and context of the study, as well as the research questions and goals achieved. A brief synopsis of the research methodology was offered in addition to a discussion regarding the ethical considerations related to the study, my personal values, assumptions and biases as researcher, together with the various assumptions that were posited. Finally, some pertinent terminology was defined to aid the reader. The following chapter focuses on a review of the literature related to disability and hearing impairment.

## CHAPTER 2

### DISABILITY AND HEARING IMPAIRMENT: A LITERATURE STUDY

*Millions have hearing impairment, are deaf, or deafened. We are able, only our ears are different, or some say, not working. We are "normal" and strive for access, inclusion, etc. At the same time, unless we say how much energy is required, how difficult it is many times to find understanding and the resources we need every day, unless we emphasize the "problem" called a disability, we will never get all those "others" to support us, create the resources, and do so without pity or condescension, without telling us to keep quiet or just stay home (Anon., 2012).*

#### 2.1 INTRODUCTION

The purpose of this literature review chapter is to explicate the various conceptual models of disability to derive a theoretical framework, to present data regarding disability prevalence including hearing impairment (globally, nationally and in higher education) and to demonstrate the lack of research regarding students with hearing impairments in general; thus, indicating a need for this study. Thereafter an understanding of the topic of hearing loss, including types and degree of hearing loss and age of onset, is provided to aid the reader's understanding concerning the hearing impairment of each student participant. The final section of this chapter is devoted to the topic of communication accessibility as the student participants in this study made use of hearing instruments and various strategies to facilitate communication. Additionally, the topics of assistive listening devices and other access technologies are included as equipment such as audio induction loops and electronic note-taking systems, which are commonplace in other countries, are either not yet available or not utilised in South African universities.

#### 2.2 DISABILITY: CHANGING PARADIGMS

Within this section, the context of disability will be described and a rationale for my chosen theoretical framework (see section 2.2.4) will be provided. The discussion therefore begins with an examination of the two broad and opposing views of what disability is about, that is, the so-called "medical" and "social" models of disability. Following that, the main tenets of the social relational model, which emerged out of the social model, are explicated, and after that Bronfenbrenner's bio-ecological systems theory is used to explain disability through the interactions of the various components (systems) of one's life, with the individual at the centre of all of these 'proximal processes', and finally the bio-psycho-social model is presented. People with hearing impairments are generally viewed by society as belonging to the marginalised and vulnerable group known as 'disabled people' or 'people with disabilities', and it is therefore important to understand this theoretical context of disability.

For each conceptual model of disability, its development as well as strengths and weaknesses are presented. In addition, I explain how hearing impairment is viewed through each of these conceptual models. For the sake of this study, I have chosen to make use of Bronfenbrenner's

model because his bio-ecological perspective provides a multi-faceted model of human development which is able to serve as a tool to aid us in understanding the complexity of the influences, interactions and relationships between the individual person and all the other systems that are interconnected to the individual (Bronfenbrenner, 2005; Bronfenbrenner & Morris, 1998). This process-person-context-time model provides a broad framework which allows for the exploration of the phenomenon of inclusion of students with disabilities in relation to both the development of systems (e.g. mainstream education system, university system) and the development of individuals (with their personal characteristics) within these systems (e.g. attitudes of lecturers) (Singal, 2006:240). This model allows one to explore how practices are shaped by the interactive influence of individuals and their social environment as opposed to a focus on personal tragedies (Oliver 2004a). In this study, the students' experiences of the proximal processes between themselves as individuals and other environmental systems were paramount. Although Bronfenbrenner's meta-framework (Bronfenbrenner, 2005; Bronfenbrenner & Morris, 1998), which allows for the complexity and interactiveness of various systems, it is not the ultimate theory. This framework, however, did serve a specific purpose for this particular study and has thus been utilised.

Over the last 20 years there have been challenges to dominant perceptions of and attitudes to people with disabilities (CHE, 2005) as well as a great deal of discussion about different theoretical approaches to disability. In the western world, the history of disability has been characterised by the progressive development of various models of disability: the religious/charity model, the medical/genetic model, the social model and the social-relational model, to name just a few (Oliver, 1996; Oliver & Barnes, 1998; Reindal, 2008). These models or constructs of disability have set the parameters for society's response to people with disabilities, framing our thinking and way of living. Disability began with a moral, then medical and now a social construction, with the Disability Rights Movement (Howell, Chalklen & Alberts, 2006) fighting to shift the construct of disability "off the body and into the interface between people with impairments and socially disabling conditions" (Hevey, 1993:426). Despite this shift, disability often remains understood as personal misfortune (Oliver, 2004b), with social consequences which, while regretted by all, are considered 'natural' and largely unchangeable.

### **2.2.1 Medical model of disability**

Historically, the medical model of disability was most predominant before 1980. The medical model (often referred to as the 'old paradigm') is also known as the biomedical, clinical or individual model of disability. This model focuses on the individual's medical condition, attributes the problems to the individual, and views disabled people as dependent, deserving of pity, or being acclaimed for overcoming adversity (Oliver, 1989:6–22). Lloyd (2000:137) argues that the traditional or medical model of disability results in a segregated education system, which is based on the notion of

treatment. Inclusion and the medical model of disability are therefore incongruent as the medical model implies segregation of individuals with disabilities into separate schools, isolating them from society. The medical model is probably best summarised by referring to the International Classification of Impairments, Disabilities and Handicaps developed by the World Health Organisation in 1980 (WHO, 2001). The classification distinguishes between 'impairment' and 'disability'. Impairment, is seen as "any loss or abnormality of psychological, physiological or anatomical structure or function" (Oliver, 1996:30) and disability as "any restriction or lack of ability to perform an activity (resulting from an impairment) in the manner or within the range considered normal for a human being" (Oliver, 1996:30).

Although education in South Africa has transitioned from the apartheid era of total segregation to schools, colleges and universities which are today extremely diverse in terms of culture, ethnicity, disability and so forth, it is disconcerting to note that disability-related policies and services in many higher education institutions still reflect the medical/individualistic approach. Howell (2006:166,168) and Howell and Lazarus (2003:63) argue that the dominant medical discourse of disability and the attention to individual deficit has influenced the "nature and provisioning of learning support systems for students with disabilities where they exist in South African higher education institutions".

This model has been critiqued by a number of authors, such as Oliver (1990) and Swain, Finkelstein, French and Oliver (1993), and has been rejected by people with disabilities as contributing to their low self-esteem, undeveloped life skills, poor education and consequent high unemployment levels. People with disabilities have recognised that the medical model requires the breaking of natural relationships with their families, communities and society as a whole, for example, when a family member with intellectual impairment is institutionalised (removed from society). Moreover, the medical model is strongly normative as people are considered disabled on the basis of being unable to function as a 'normal' person does (Mitra, 2006:237). This model constructs disability as residing within the individual, and utilises a process of assessment, diagnosis, prognosis and intervention as necessary to identify and manage the disability (Archer & Green, 1996; Burden, 1996; Kriegler & Skuy, 1996). Furthermore, the model assumes that the individual, together with treatment or support, can be assisted to overcome his or her limitations and become what society regard as 'normal'.

Due to major criticism of the medical model and changing societal perceptions, disability activists and academics developed the social and post-social models of disability (Barnes, 2008b; 2004; Barton, 2004; Corker & Shakespeare, 2002) in opposition to the dominant medical model and as a new way of viewing disability.



In terms of this social and post-social model, students with a hearing loss would be referred to as being deaf and they would need to be educated in a special school environment. The use of medical devices would be used to attempt to 'cure' the individual so that he or she could be 'normal'. This notion is strongly rejected by those who advocate for the use of oralism and the need for complete social and educational inclusion.

### **2.2.2 Social model of disability**

An alternative way of viewing disability is informed by the social model. Since its original conception over 30 years ago, the social model of disability has seen by some researchers as an emancipator force in the lives of many people with disabilities (Tregaskis, 2002:457).

Both the South African disability movement and the South African government approach disability from a social model perspective (CHE, 2005; Greyling, 2008:15). The social model of disability is synonymous with inclusion as it encourages learners with disabilities to be included in mainstream schools' education and to become active members of their society. It has also informed the development of policies related to inclusive education. In the mid-1970s, Oliver and Finkelstein, together with Hunt (UPIAS, 1976), consolidated the ideas of UPIAS (Union of the Physically Impaired Against Segregation) and encapsulated these in the notion of the 'social model of disability' (Oliver, 2004a; Finkelstein, 2001). The social model of disability, of which there are at least nine different versions, stands in contrast to the medical model, its main concerns being justice and human dignity. There are two main social models derived from different traditions: an idealistic tradition and a materialistic tradition (Reindal, 2008). This model sees disability firmly as a social construct. "Disability is not the attribute of the individual; instead it is created by the social environment and requires social change" (Mitra, 2006:237). As Swain, French and Cameron (2003:23) assert, "disability is not something one has, but is something that is done to the person ... being excluded or confronted on a daily basis by societal barriers". Furthermore, in social model theory, a key distinction is also drawn between impairment and disability:

Impairment is the functional limitation within the individual caused by physical, mental or sensory impairment. Disability is the loss or limitation of opportunities to take part in the normal life of the community on an equal level with others due to physical and societal barriers (Barnes, 1991:2).

At the centre of social model theory lies the distinction between impairment and disability. As (Shakespeare, 2006:34) explains, "it is this distinction which separates British disability rights and Disability Studies from the wider family of social-contextual approaches to disability". He goes on further to explain that 'impairment' is defined in individual and biological terms while 'disability' is defined as a social creation (Shakespeare, 2006:34). The main tenet of his argument is that "disability is what makes impairment a problem". For example, despite a student with a hearing impairment having received a cochlear implant (as a 'remedy' for the medical condition) the fact that he or she has a sensory impairment can still cause discomfort as the pain itself is generated

through the interplay of physiological, psychological and socio-cultural factors and thus the individual experience can never be separated from the social context (Wall, 1999).

Although the social model of disability is currently viewed as the dominant model by disability activists and academics within higher education globally, and while it is the preferred conceptual model as enshrined in the UNCRPD, it is important to understand that the shift towards this approach is also not without criticism. According to Reindal (2008:141), critiques of this model can be divided into:

- “an internal critique” – a self-critique to improve the model by its architects;
- “a critique arising from related research fields” – the model over-socialises the phenomenon of disability; and
- “a philosophical critique” – the distinction between ontology and epistemology is dissolved.

The main issue with the social model, as Shakespeare (2006:2) and Oliver (2004a) suggest, is how to ‘fit’ in the personal experience of impairment when the emphasis is purely on the social barriers of disabilities. Swart and Greyling (2011:85), in agreement with this notion, state that an adequate social model should also include the experiences of persons with disabilities. In terms of research, both the experiences of the person and the environment impact on researching disability, ultimately making environments more accessible (Howell, 2005; Schneider, 2006:8). Furthermore, the social model is so centrally concerned with the political aspects of disability – “its insistence on a socio-political rather than an individualistic level of analysis” (Watermeyer & Swartz, 2008:599) that the personal feelings and struggles of the disabled person are seen as secondary to the reality of the person’s impairment and from a psychological perspective, “internal experience may be relegated to a shameful, unseen corner of the self, rejected and disowned” (Watermeyer & Swartz, 2008:600). Finkelstein (2002:4), co-author of the UPIAS Fundamental Principles of Disability (1975) and an original proponent of the social model, argued that the social model is not actually a model and that it should, more accurately be termed, “social interpretation(s)” (Finkelstein, 2002:4). Furthermore, Shakespeare (2006) argues that, rather than reject research in medical sociology or social care, Disability Studies should focus on the important questions of what disability is, and how the lives of people with disabilities can be improved.

There is thus a need for a more contemporary approach to disability, one which addresses the issues of empowerment and autonomy, in addition to societal barriers. Although many HEIs in South Africa have adapted their disability-related policies to reflect the social model of disability (on paper), the centralisation of disability support services and the focus on ‘support’ as well as the provision of ‘evidence’ to prove one’s disability still emanate strongly from the medical approach to disability. Their services being mostly reactive, rather than proactive (FOTIM, 2011:11; Howell, 2005:60).

In terms of this model, people with reduced hearing ability would be termed 'hearing impaired' and their disability would emanate wholly from the societal barriers which they face, without giving voice to their personal experiences. Examples of this would include noisy environments with high levels of background noise and poor acoustics, an inability to lip-read due to the educator walking around the room, poor lighting etc.

### **2.2.3 Social relational model of disability**

Within the social relational model, the main tenets of the social model of disability are retained, namely the impact of impairment and the experience of disability, which together is referred to as a "social relational phenomenon keeping the element of oppression and discrimination as an important distinction in contrast to disadvantage due to restriction of activity" (Reindal, 2008:143). Utilising this model, one can equally incorporate the personal experiences of persons living with reduced functions, both socially and without adopting the individualistic or medical model. Furthermore, Reindal (2008) argues that, by retaining the elements of discrimination and oppression, the social relational model is more suited to the "morality of inclusion because the main issue of the social model, oppression is not obliterated" (Reindal, 2008:135) and the model is able to differentiate between personal restrictions in social settings versus social hindrances that are imposed on top of these and which hinder the individual in achieving vital goals (Reindal, 2008:144). The social-relational model is also closely linked to the capability approach of disability which focuses on the capability to function, namely what a person can do or can be. The social-relational model recognises that it is more important to empower people through capabilities than through functioning (Reindal, 2009:163), which directly relates to the "freedom that a person has to lead one kind of life or another" (Nussbaum & Sen, 1993:3). The central tenet of Nussbaum and Sen's capability approach is the concept of human dignity, which is also a core feature within the social model of disability.

In terms of this model, a person with reduced hearing function, would be referred to as being 'hearing impaired' (in line with the social model) but additionally his or her personal experiences of being a person living with reduced function plus discrimination and oppression would be encapsulated.

In South Africa, there has been a strong move away from a segregated education system to one which is more inclusive – the creation of a welcoming environment which celebrates the full participation of all, including students with disabilities. In my opinion, neither the medical nor the social models of disability are able to promote true inclusion. The medical model is synonymous with separate education and promotes institutionalisation, and the social model, although framing disability as a social construct, does not address the issues of autonomy and empowerment of the individual. Although the social model of disability is firmly entrenched (more in words than in practice) in higher education in South Africa (as a move away from the previously dominant

medical model), upon which support services for students with disabilities is based, it seems that the social-relational model could be more suited to inclusion as it is built on the fundamental premises of the social model (respect for human rights and dignity) but also has a firm focus on what students with disabilities can do, rather than on their functional limitations, thereby also embracing the capability approach. Furthermore, in the South African context, the issues of oppression and discrimination, especially related to people with disabilities, are very relevant due to historical marginalisation and the particular vulnerability of this group. The social-relational model of disability as a theoretical framework for inclusivity in higher education may therefore be appropriate in taking the ideals of inclusion forward in South Africa.

A further way of viewing disability is through the interactions (proximal processes) of the individual (and his or her personal experiences and characteristics) at the centre and the various other nested environments (systems). As previously explained in section 2.2, Bronfenbrenner's conceptual model of human development (Bronfenbrenner, 1994) has been selected as the theoretical framework for this study. A detailed explanation of this model now follows.

#### **2.2.4 Bronfenbrenner's bio-ecological systems theory**

In the following two sections the origins, development and a detailed explanation of Bronfenbrenner's bio-ecological systems theory, as well as examples of application, will be provided.

##### **2.2.4.1 Origins, development and explanation**

This theory was originally known as the ecological systems theory for developmental theory with its defining core being "its focus on the dynamic relationship between the organism and its surround, with both the person and the environment engaged in reciprocal tensions and activities" (Bronfenbrenner, 1977:276). Later his theory was renamed the bio-ecological systems theory to stress that a person's own biology can be viewed as a primary environment, one which fuels that person's human development (Paquette & Ryan, 2001). The word 'ecology' (Greek *oikos*, which means house, environment, and *logos*, which means knowledge) in the sense of biology refers to a teaching about the dependency of living creatures on their surroundings, the ecological system. Similarly, Bronfenbrenner studied the dependency between man and environment. The inclusion of the 'bio' aspect in his latest conceptualisation is very important as he realised that the individual is also critical. In this sense, the 'biological', in the case of disability, is also significant – not only in terms of diagnosis and limitations, but more importantly the interactions between the person and all the other 'systems' or environments.

This system is composed of five socially organised subsystems. Each of these help to support and guide human growth, ranging from the microsystem, which refers to the relationship between a developing person and the immediate environment, to the macrosystem, which refers to

institutional patterns of culture (Bronfenbrenner, 1992; 2005; Bronfenbrenner & Morris, 1998). Key to his theory is the role of proximal processes, which has been specifically described as referring to “particular forms of interaction between organism and environment ... that operate over time and are posited as the primary mechanisms producing human development” (Bronfenbrenner & Morris, 1998:994).

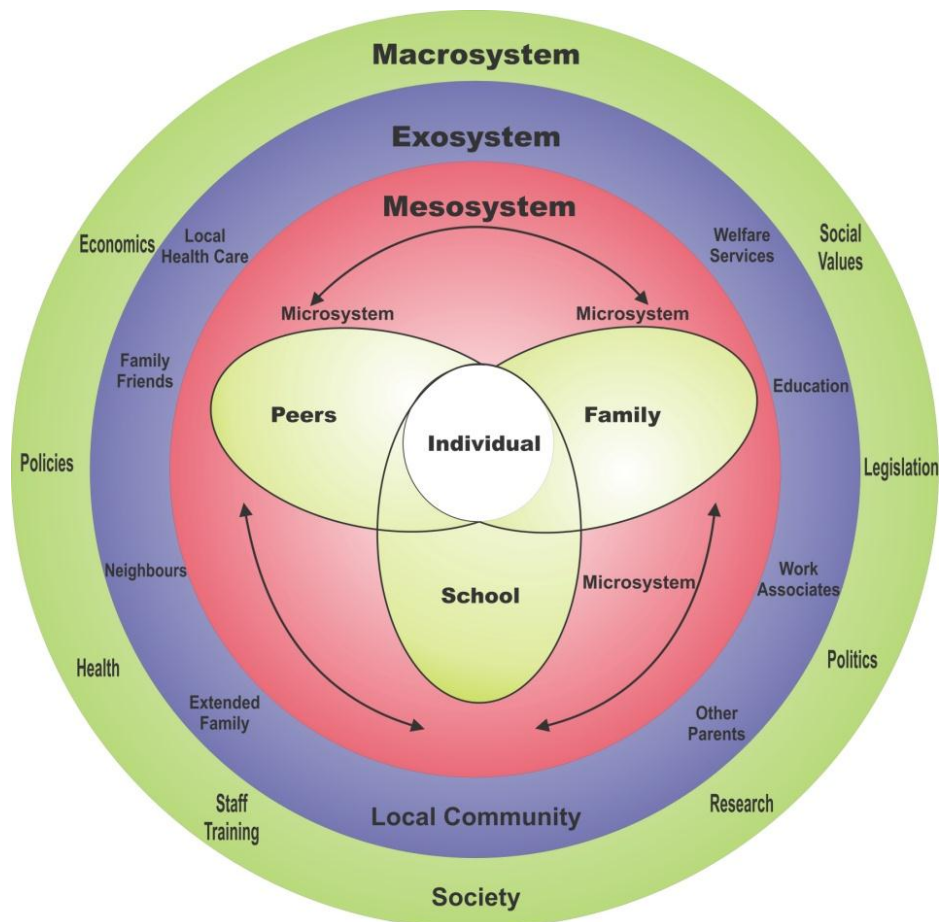
Bronfenbrenner’s bio-ecological model of development is suitable for use in the field of inclusive education as it helps to elucidate and explain the interactions between an individual’s development and the systems within the social context (Swart & Pettipher, 2011:10). The ecology approach, as expounded by Renn and Arnold (2003) is also useful in educational practice, particularly in higher education. I therefore elected to adapt Bronfenbrenner’s bio-ecological model to reflect the environments (systems) experienced by a student with hearing impairment (refer to Figure 2.1 below), showing that the relationship between an individual and his or her environment is dynamic and reciprocal in nature. When a person reacts to his or her environment this action also alters the environment (and vice versa). These proximal processes or interactions which become more complex in their reciprocal nature over time, will be used to assist with the interpretation of the data. Although I thought about how his theory (and others) could apply to my study from the beginning, it was only after really working with the transformation of the data that the inter-relationships between the contexts in which a student with a hearing impairment at university finds him- or herself emerged and became apparent to me.

Bronfenbrenner’s theory defines the social environment as complex ‘layers’, a series of nested environments, each having an effect on a person’s development (Ling, 2010:110). In summary, the microsystem is found at the centre, described as the immediate, proximal environment within which one person interacts directly with other persons and properties of that setting: family, friends, place of study or close community. The second layer, the mesosystem, comprehends the totality of the microsystem settings and the network connections between them, their power to influence outcomes increasing with the density of these connections. The next layer, the exosystem, includes settings with which the person does not directly interact, but which includes forces that impact on proximal settings. These can include a parent’s workplace, which can influence the mood of the home, or any social institution whose decisions or policies impact on family functioning as a whole. The fourth and outermost layer is the macrosystem, constituted by overarching stable cultural patterns of belief and lifestyle. Each of these levels can be seen to provide either an opportunity or a constraint. In addition, important individuals in one setting could restrain or promote the move of the person into other settings (Berke, 2000; Ling, 2010:110). A more detailed explanation of each ‘layer’ now follows:

- The microsystem consists of a pattern of activities, roles and interpersonal relations between individuals and the systems in which they actively participate (Swart & Pettipher, 2011).

These contexts include the student's interactions with parents, peers, lecturers, the disability unit, academic mentors and tutors, the use of assistive technologies, curricula and reasonable academic adjustments. It is in the microsystem that the most direct interactions with social agents take place: with parents, peers, and lecturers, for example. The individual is not merely a passive recipient of experiences in these settings, but someone who actually helps to construct the social settings.

- The mesosystem refers to the relationships that develop between the different microsystems or connections between contexts, at a given moment in the individual's life (Swart & Pettipher, 2011). Some examples are the connections between the individual and his or her family/parents, the parents and the disability unit, the disability unit and the lecturers or academic mentors. For example, a student who has grown up in a hearing family using an oral approach to communicate and being schooled in the mainstream environment will naturally interact with friends who are hearing and, assuming that they have a hearing identity (non-disabled), it is unlikely that such student would disclose his or her hearing impairment and would therefore have limited interactions with the disability unit. These interactions are reciprocal and become more complex over a period of time (chronosystem).
- The exosystem is concerned with the connection between a social setting in which the individual does not have an active role and the individual's immediate context (Swart & Pettipher, 2011). For example, university management may amend the policy for students with disabilities without consultation with stakeholders and may reduce the budget which the disability unit receives, which will have an impact on the level of support which could be provided to students with hearing impairment, which would ultimately affect the students' experiences related to teaching and learning and therefore their academic outcomes.
- The macrosystem refers to dominant social and economic structures and the attitudes, beliefs, values and ideologies present in the systems of a particular society and culture (Swart & Pettipher, 2011). Cultural contexts would include aspects related to South African society and inclusion, such as attitudes towards persons with disabilities.
- The chronosystem "encapsulates the dimension of time and the way it relates specifically to the interactions between these systems and their influences on individual development" (Swart & Pettipher, 2011:15). For example, hearing impairment can be considered a life event. The age of onset of hearing impairment (as well as the degree of hearing impairment) has an impact on language development. Researchers have found that, if the hearing impairment occurs later in life, such as after the acquisition of language (post-lingually), then the impact on language is much less than had the loss occurred pre-lingually (Luckner & Muir, 2002). An example of sociohistorical circumstances would be the increasing opportunities for people with disabilities to be gainfully employed in South Africa due to employment equity policies, as opposed to twenty years ago.



**Figure 2.1: An adapted version of Bronfenbrenner's bio-ecological model (Bronfenbrenner, 1992; Bronfenbrenner & Morris, 1998)**

A student (individual) with a hearing impairment is situated in the centre of this model, with his or her development being influenced by other microsystems (e.g. peers, lecturers, staff member from the disability unit). His or her development and interactions (proximal processes) with the other microsystems are also influenced by his or her personal characteristics, e.g. the willingness to disclose his or her hearing impairment or to ask for support.

#### **2.2.4.2 Application of model**

Ling (2010), in her article appropriately entitled "Over the mountain: Tertiary education and graduate employment for people with a disability", uses a publication by Burghstahler (2005), *Going to college* as an interesting exposition of the exosystem, mesosystem and microsystem effects on participation in higher education by people with disabilities. Laws related to disabilities, institutional policies, research and staff training are investigated in terms of their effects on the exosystem, with the constant, underlying message that "much remains to be done" for students with disabilities (Ling, 2010:111). Ling highlights issues such as under-representation, the need to establish welcoming campus environments and a lack of staff training (both academic and administrative). Additionally, the need for statistical reporting adequate to inform the kinds of

research that can lead to transforming educational experiences for students with psychiatric disabilities is raised by Albrecht (2005:228).

Ling (2010:112) goes on to explore institutional networks and individual supports, explicating the effects of both the mesosystem and microsystem on student participation. She determines that at these inner zones, it is important that universities develop programmes and strategies to improve the micro-skills of students with disabilities, skills that are necessary for “self-determination and successful transitions to internships as well as employment settings” (Ling, 2010:12). Furthermore, the importance of collaborative relationships at every level across the entire university is stressed as being of strategic importance, requiring the co-ordination of rehabilitation, disability, career advisors and academic staff.

In this study, therefore, the bio-ecological systems theory provides an appropriate tool, with its interconnected regions, for understanding and interpreting the experiences of students with hearing impairments in higher education in South Africa.

### **2.2.5 Bio-psycho-social model (including the ICIDH and ICF)**

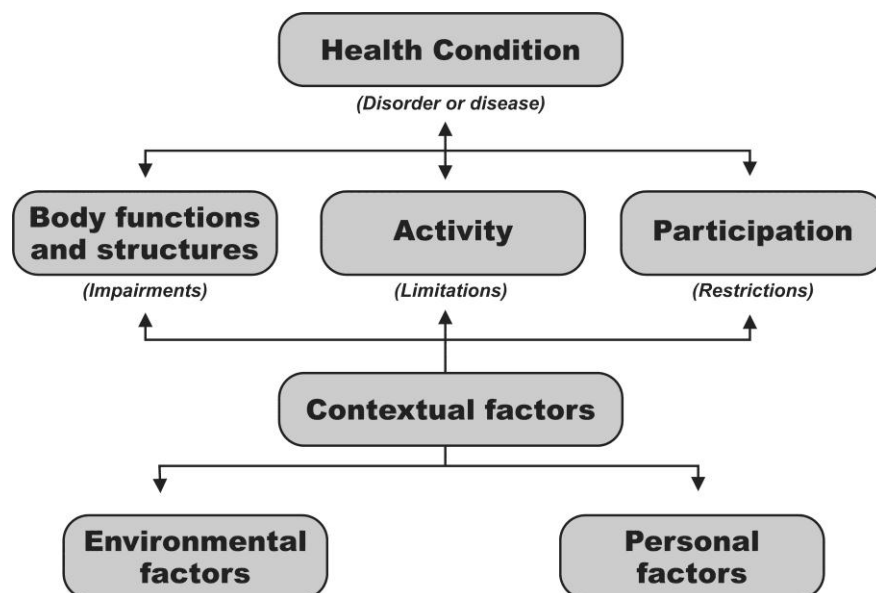
The foundations of the definitions of the International Classification of Impairment, Disability and Handicap (ICIDH) (WHO (ICIDH), 1980) lie in the biomedical and socio-medical approaches to disability, with the classifications being based on the distinction between impairment, disability and handicap. Promoted as a bio-psycho-social model it aims to represent a workable compromise between medical and social models (WHO and The World Bank, 2011). The ICIDH defines impairment as an “abnormality in the structure or the functioning of the body” (Bury, 1996:22) whether due to disease or trauma, disability was seen as the “restriction in the ability to perform tasks” (Bury, 1996:22) due to impairment, and handicap as the “social disadvantage” (Bury, 1996:22) that could be associated with impairment, disability, or both. The International Classification of Functioning (ICF), WHO's latest framework for measuring health and disability at both individual and population levels, followed on from the ICIDH and was officially endorsed by all 191 WHO member states at the Fifty-fourth World Health Assembly on 22 May 2001 (resolution WHA 54.21) (WHO, 2012). It was also endorsed for use as the international standard to describe and measure health and disability.

The ICF frames the notions of ‘health’ and ‘disability’ in a new way. It acknowledges that every human being can experience a reduction in health and thereby experience some degree of disability at some point in time during his or her lifetime. Disability is not viewed as only happening to a small minority of people; thus, mainstreaming the experience of disability and recognising it as a universal human experience. This promotes an understanding of disability and the disadvantages associated with it as primarily an individual condition arising from natural causes – hence the



labelling of this view as the “individual model” (Terzi, 2005:199) of disability by disabled people’s movements.

The ICF model as depicted in Figure 2.2, shows the relationship between the ‘health condition’ (disorder or disease) and the ‘impairment’, ‘activity limitation’ and ‘participation restriction’. By shifting the focus from cause to impact the model places all health conditions on an equal footing allowing them to be compared using a common metric – the ruler of health and disability. The ICF model also takes into account the social aspects of disability and does not see disability only as a ‘medical’ or ‘biological’ dysfunction. The contributions of most self-advocacy associations are also taken into account by this model therefore resulting in recognition by them too (Masala & Petretto, 2008:1233). Furthermore, by including contextual factors, in which environmental factors are listed, the ICF allows for the recording of the impact of the environment on the person’s functioning.



**Figure 2.2: The ICF model of functioning and disability (WHO, 2001:18)**

Assuming congenital hearing impairment, according to the 1980’s model, a hearing impairment, being a departure from the standard human repertoire, determines a restriction of activity and, consequently, causes disability, which may then result in a handicap (Terzi, 2005:199). In light of the latest ICF mode of functioning and disability, there may have been a genetic disposition (health condition) which resulted in the hearing impairment (change in sensory function), which may limit some activities and place restrictions on participation in society. The impact of the hearing impairment is also influenced by environmental (e.g. accessible teaching venue) as well as personal factors (e.g. use of self-advocacy skills).

As with other models, various authors find fault with the ICF model. Terzi (2005) argues that the set of definitions presented by the WHO classification involves a distinction between normality, or normal average human functioning, and abnormality as divergence from this standard. Within this view, disability is referred to as caused by an individual 'abnormality' – consequently, disability scholars (Finkelstein, 1980; Oliver, 1990; Shakespeare, 1999) have repeatedly asserted that disability is considered mainly a target of treatment and rehabilitation intended to achieve as much as possible an approximation to normality. Masala and Petretto (2008:1242) also posit that the ICF is not very clear on the essential choice of the 'base' model, that is, whether to see disablement as a dynamic process that happens when personal limits collide with socio-environmental needs, or rather as a personal feature. Moreover, one of the central issues with this model is that it "runs the risk of becoming another disabling barrier because it reduces the experiences of disabled persons to descriptions of impaired body functions and structures, activity limitations and participation restrictions" (Siyabulela & Duncan, 2006:301). Other criticisms, according to Baylies (2002:728–729) include the fact that –

- (i) the ICF does not classify personal factors e.g. gender, lifestyle, etc. of the individual nor does it take into account the purpose and meaning that individuals derive from functioning in the world;
- (ii) it is not very successful in producing a universal language of disability which is related to issues of trying to transcend cultural differences in conceptualising impairment and disability (Miles, 2001);
- (iii) although a social context of disability has been claimed, in practice however, the actual classification remains grounded in western scientific concepts and formulations; and
- (iv) participation is included in the framework as a weak notion – tied to individual action rather than social and political inclusion.

Having reviewed the various constructions of disability, it is important to note that some writers also argue that we need to go beyond the conceptions of constructed disability to a notion of universalism – where disability is viewed as being a fluid and continuous condition which has no boundaries; a condition which is experienced by everyone at some stage in our lives. Disability, in terms of universalism, is therefore viewed simply as being normal – with humanity being encouraged to welcome and embrace diversity and not to see it as some form of hierarchical classification of difference (Bickenbach, 1996).

The following section will look at the meaning of the term 'disability' and provide statistical evidence on the prevalence of disability but also more specifically hearing impairment. The lack of research in the field of hearing impairment and disability will also be discussed, making a case for this research study.

## 2.3 DISABILITY AND RESEARCH

The focus of this section is on the meaning of the term 'disability', prevalence rates of disability, disability-related research, constructions of deafness as well as identity and stigma.

### 2.3.1 Disability and its meaning

The development of definitions that do not exclude, categorise or make different is a difficult, if not impossible, task. While definitions are usually constructed to advantage those living with disabilities, the opposite is very often true. Soudien and Baxen (2006:154) therefore argue, "that definitions be understood as emergent from particular histories and discursive formations".

In 2005, the South African cabinet adopted the definition of disability for the country as quoted below. This same definition is used in the Disability Framework for Local Government (2009–2014 (SA, DPLG, 2009) -

Disability is the loss or elimination of opportunities to take part in the life of the community equitably with others that is encountered by persons having physical, sensory, psychological, developmental, learning, neurological or other impairments, which may be permanent, temporary or episodic in nature, thereby causing activity limitations and participation restriction with mainstream society.

More recently, the United Nations Convention on the Rights of Persons with Disabilities (United Nations (UN), 2006), ratified by the South African government on 30 November 2007, recognises that disability is an evolving concept which results from the interaction between persons with impairments as well as attitudinal and environmental barriers. The original Convention text was adopted by the United Nations General Assembly on 13 December 2006, opened for signature on 30 March 2007 and came into force on 3 May 2008. This influential document recognises persons with disabilities as –

... those persons who have long-term physical, mental, intellectual or sensory impairments which, in interaction with various barriers (such as economic, physical, social, attitudinal or cultural in nature) may hinder their full and effective participation in society on an equal basis with others" (UN, 2006:4).

My intention for the purposes of this thesis was not to define disability, but to acknowledge, in the same vein as Masala and Petretto (2008) did, that disability manifests itself through the interaction of individuals with their functional limitations (impairment) and the social, attitudinal and physical environment in which they live. In terms of this study, hearing impairment was viewed as an impairment of the sense of hearing which results in the person being disabled, or having a disability.

### 2.3.2 Disability prevalence

The World Report on Disability (WHO and The World Bank, 2011) explains that, because the concept of disability is a complex and multidimensional experience, it poses several challenges for measurement. Additionally, the fact that disability is defined differently in various countries (and even within countries), also influences accurate measurement (Andrews, Fourie & Watson, 2006:251). These factors result in approaches to measuring disability varying between countries and thus, ultimately, influencing the outcomes. Other factors also influence the results when attempting to measure disability depending on the purpose and application of the data, the conception of disability, the aspects of disability examined (impairments, activity limitations, participation restrictions), the definitions, question design, reporting sources, data generation methods, and expectations of functioning (WHO and The World Bank, 2011). The usefulness of the data is thus limited because the resulting prevalence rates are not inclusive of the entire extent of disability. Furthermore, the way in which disability is conceptualised and whether institutionalised populations are included in the survey, all affect the results of any prevalence studies.

The set of disability prevalence estimates in the WHO report (WHO and The World Bank, 2011) is based on two sets of data. The first, the World Health Survey (WHO, 2006), was a face-to-face household survey conducted between 2002 and 2004. It was the largest multinational health and disability survey that used a single set of questions and consistent methods to collect comparable health data across countries. The survey was based on the ICF conceptual framework and functioning domains. The results, using data from across 59 countries and some 650 million people, placed the average prevalence rate of disability at 15,6 per cent, ranging from 11,8 per cent in higher-income countries to 18,0 per cent in lower-income countries.

The second set of estimates of the global disability prevalence is derived from 'The global burden of disease study: 2004 update' (WHO, 2008). The data for this study estimated that 15,3 per cent of the world population (some 978 million people of the estimated 6,4 billion in 2004 had 'moderate or severe disability', while 2,9 per cent or about 185 million experienced 'severe disability'. Among those 15 years and older, the figures were 19,4 per cent and 3,8 per cent, or 892 million and 175 million, respectively.

In South Africa, persons with disabilities constitute 7,9 per cent of the general population as reported by the 2010 Human Rights Report (Bureau of Democracy, Human Rights, and Labor, 2011). The data collected during Census 2001 (SSA, 2005) indicated that there were 2,2 million people with various forms of disability. This number constituted 5 per cent of the total population enumerated in this census. Of this number, 1 854 376 were African, 168 678 coloured, 41 235 Indian/Asian and 191 693 white. The number of females affected was 1 173 939, compared with 1 082 043 males. The provincial prevalence levels show that the most affected province was Free

State with a prevalence of 6,8 per cent and the least affected Gauteng (3,8 per cent). Those who had post-secondary education had the lowest prevalence (3 per cent) compared with those who had no schooling (10,5 per cent), primary level (5,2 per cent) and secondary level of education (3,9 per cent). It was also determined from the census data that visual, physical and hearing impairments account for 80 per cent of all disabilities reported in South Africa.

Using the classification system of the general household survey of 2010, 6,3 per cent of South Africans aged 5 years and older were classified as disabled. Women (6,5 per cent) were found to be slightly more likely to be disabled than men (6,1 per cent). In terms of provincial prevalence, the figures showed that 10,1 per cent of persons with disabilities lived in the Free State, 9,8 per cent in the Northern Cape and 8,5 per cent in the North West province. The survey also reported that the Limpopo province, at 8,2 per cent, had the highest prevalence rate of disability in the country (SSA, 2010:19).

When reflecting on these national statistics, it is important to bear in mind that, according to the World Report on Disabilities (WHO and The World Bank, 2011), countries reporting a low disability prevalence rate are predominantly developing countries as they tend to collect disability data through censuses or by using measures focused exclusively on a narrow choice of impairments. This means that our prevalence rates could be significantly higher than actually reported, probably more in line with the global prevalence rate of 18 per cent. The prevalence of hearing impairment globally and in South Africa will be discussed later in this chapter (see 2.4.8).

### **2.3.3 Disability research in South Africa and Africa**

The literature on research related to disability in general is abundant. The two general areas where disability research reports abound are in the fields of Medicine and the Social Sciences. Within the new and growing field of Disability Studies, with its roots in the Social Sciences, current academic debates concern the activities related to actually conducting disability research. Although the abundance of studies is evident in considering the literature about disability research, one cannot ignore the many disability scholars, activists and researchers, particularly from the social modellers, who maintain that disability research is contentious and problematic.

Acknowledging the above, I turned to the African continent to investigate the abundance of research related to both disabilities in general and hearing impairment specifically. In order to determine the number of published research articles available in South African and African journals, various searches were performed utilising some of the databases available electronically. The following terms were used in the search: disability, hearing impaired, deaf and hard of hearing.

**Table 2.1: Published research articles and theses on disability and hearing impairment**

Database	Search term	Result
SAePublications	Disability	241
Africa-wide Info (EbscoHost)	Disability (as keyword only)	677 (65)
SA theses (including Navtech and UCTD)	Disability	149
SAePublications	Hearing impaired	2
Africa-wide info (EbscoHost)	Hearing impaired (as keyword only)	85 (45)
SA theses (including Navtech and UCTD)	Hearing impaired	25
SAePublications	Deaf	14
Africa-wide Info (EbscoHost)	Deaf (as keyword only)	110 (31)
SA theses (including Navtech and UCTD)	Deaf	47
SAePublications	Hard of hearing	1
Africa-wide info (EbscoHost)	Hard of hearing (as keyword only)	22 (3)
SA theses (including Navtech and UCTD)	Hard of hearing	2
	<b>TOTAL</b>	<b>308</b>

It is clear from Table 2.1 that over an average period of around ten years many articles have been written and published concerning disability, both in South Africa and the broader African continent. In South Africa, however, very few articles and theses focus specifically on hearing impairment compared with the rest of the world. These figures, therefore, highlight the paucity of research related to hearing impairment in South Africa. Furthermore, if one investigates even further, the local research related to hearing impairment within the educational environment is even less. Of the studies that have been undertaken in South Africa, they are mostly focused on teacher training (of the Deaf), early hearing detection and intervention, development of deaf identity, Sign Language and Deaf adults' views on Deaf Education in South Africa (Storbeck, 1994; 1998; 1999). It seems that in South Africa, no other study has focused on students with hearing impairment, in particular using oralism and studying at university, leaving a gap in the body of knowledge<sup>4</sup>.

#### 2.3.4 Disability versus linguistic minority

In society, there are two main constructions of deafness. The one construes 'deaf' as a category of disability whilst the other construes 'Deaf' as being a member of a linguistic minority group with their associated culture. In developed countries, there are numerous organisations associated with each of the prominent constructions of deafness. In the United States of America (USA), an example of a large organisation primarily associated with deafness as disability is the AG Bell Association, and a national organisation associated primarily with the construction of Deaf as a linguistic minority is the National Association of the Deaf (Lane, 2006).

In South Africa, two prominent national organisations associated with the Deaf are DeafSA and the National Institute for the Deaf (NID) in Worcester. A new national organisation associated with

<sup>4</sup> The literature on deaf students in higher education published internationally during the last three decades has grown exponentially, but more specifically between 2005 and 2010 due to the research activities on the access by deaf students into higher education which was supported globally by policymakers (Konur, 2012:1583).

deafness as a disability was established in 2011, and is called the Association for Hearing Loss Accessibility and Development (AHLAD). AHLAD is affiliated to the National Council for Persons with Physical Disabilities in South Africa (NCPDPSA). Its mission is –

... to serve as a forum for the advancement of all persons with hearing impairment so as to enable them to attain their maximum level of independence and integration into the community as well as the prevention of the occurrence of deafness and hearing impairment, in line with the UN Convention on the Rights of Persons with Disabilities (AHLAD, 2011).

Large disparities exist between these two groups ('deaf' as a category of disability and 'Deaf' as being a member of a linguistic minority group with their associated culture), with each construction residing at opposite ends of a continuum. This, unfortunately, in the South African context, has been to the detriment of all persons who have a hearing impairment as there is no one organisation to advocate for the rights of all people with hearing impairment (Deaf/deaf/hard of hearing). Lane (1994) explains that each of these constructions has a core client group and that the struggle between these two groups has endured for centuries, in part because there is no simple criterion for identifying most childhood candidates as clients of one position or the other. It is generally accepted that, if a hearing adult becomes deaf from illness or aging (develops a hearing impairment), then that person has a disability and he or she is not regarded as a member of Deaf culture. The same is true of Deaf parents insisting that their Deaf child is part of the linguistic minority group. If, however, a child with a profound hearing impairment is born to hearing parents and they choose cochlear implantation, their choice and membership is rejected by the Deaf community. Some advocates of the disability construction, according to Lane (2006), argue –

... these are children with hearing impairment whose language and culture are in principle those of their hearing parents; whereas on the opposite end of the continuum, advocates of the linguistic minority construction argue that the child's primary language must be manual language and that their life trajectory will bring them fully into the circle of Deaf culture (Lane, 2006:80–81).

Organisations embracing each construction of deafness often compete to 'own' the children and define their needs as this has a direct impact on the economic survival of the entity due to intense competition (Lane, 2006). These organisations compete for members, as more members equals greater income and also a 'louder' collective voice.

More generally, Lane (2006) states that we can observe that post-lingual and moderate hearing impairment tend to be associated with the disability construction of deafness while early and profound deafness may involve an entire organisation of the person's language, culture and thought around vision and tend to be associated with the linguistic minority construction. But, this is not always the case, especially not in the South African context.

### **2.3.5 Identity and stigma (in relation to 'disability')**

Identity is a key issue for persons with disabilities relating to how they define themselves and which groups they identify with. Even knowing why some people experience disability support and others

not is critically related to their identity. For the purposes of this discussion, the following understanding of identity by Beck (1992:88) will be used:

Increasingly everyone has to choose between different options, including as to which group or subculture one wants to be identified with. In fact one has to choose and change one's social identity as well and take the risks in doing so.

Najarian (2008:118) argues that, since the inclusion of people with disabilities in university settings is a fairly new phenomenon in the USA, there is little known about college students with disabilities and their identities. This statement is most probably also relevant in the South African context. Even though this may be true, it can still be argued that identity shapes the experiences of disabled students in higher education. I would posit further that this is of particular relevance to students with hearing impairments, taking into consideration the 'hidden' disability that becomes 'visible' when they wear hearing aids, cochlear implants or make use of visible assistive listening devices; almost 'forcing' them to take on a disabled identity and even disclose their disability. Students' self-perception and their perceptions of how others view them play an important role in their interactions with both institutional processes and structures. For many students, assuming or resisting a disabled identity is a most complex process (Houghton, McDonnell & Armstrong, 2006:1). The idea of identity as a personal construction started with the study of developing adolescents going through the negotiation of self and identity (Erikson, 1959; 1968). Duff (2002) asserts that, during the twentieth century, collective or group identity was used as a descriptor and/or political tool for groups typically residing in the margins of society. The concept of identity for persons with disabilities, however, is a fairly recent evolution (Johnstone, 2004).

Goffman (1963), in his sociological examination regarding interpersonal exchanges between people with deviances from the norm, such as impairments, first argued the notions of stigma and "spoiled identity" (Goffman, 1963:2), claiming that disabled people were often viewed as the disability itself. The disabled person is then left with a choice either to try to hide the disability or to join with similar others. Goffman (1963:2) further defines stigma "as a disjunction between one's virtual social identity and one's actual identity." According to his observations, a major part of the experience of disability is the ongoing struggle to ward off potential interpersonal devaluation caused by one's social classification as "less than normal, at best, and less than human, at worst" (Goffman, 1963:3). He further asserts that, if stigma could be reduced during social interaction through strategies such as using humour, proving competence, or hiding difference, the individual may pass as socially acceptable. If stigma, however, cannot be successfully managed, the individual is consigned to the margins of humanity and often internalises the stigmatised, spoiled identity as somehow deserved. While considering Goffman's position, Disability Studies scholars have argued that university students with disabilities negotiate a disabled or non-disabled identity and are often stigmatised (Low, 1996; Watson, 2002). Many students, especially in higher



education, therefore choose not to disclose their hearing impairment and take on a non-disabled identity.

A recent case study at a university in the UK which focused on the participation of disabled students in the development of policy and provision identified issues around disability identity and stigma. Several of the participants who were interviewed admitted that they purposefully hid their disability from other students (Beauchamp-Pryor, 2012:292). A similar study earlier by Riddell, Tinklin and Wilson (2005a:130) also highlighted the disinclination of students to identify themselves as disabled. These latter researchers suggested that their reluctance was partly linked to the fear of stigma associated with disability and partly to a rejection of victim status. Often, students are ambivalent with regard to disability as an aspect of their identity and sometimes equate disability with powerlessness and therefore do not wish to incorporate disability into their sense of self (Riddell, Tinklin & Wilson, 2005b). Thomas (2002:66) further asserts that there are degrees of impairment and some may consider themselves to be in a negotiable grey zone between a 'normal' and a 'disabled' bodily state, raising the question of identity. Goffman's (1963:74) foundational work describes how "passing as normal can be a strategy for the stigmatized".

Johnstone (2004) purports that disability as an identity is often a personal construction, a purposive attempt to make meaning of self in the world. From a review of the literature, he produced six major categories in which to organise the notion of identity for people with disabilities, namely:

1. Externally ascribed, disempowering identities – students are often labelled as disabled, which may cause some to feel 'shame' (Murphy, 1990; Snedecor, 2001) about their impairment.
2. Overcompensating identities – once impairments are disclosed, many people feel the necessity to overcompensate in order to cope with the notion of being disabled.
3. Identities that shift focus away from disability – this is for a variety of highly personal reasons and can take place in a number of different ways, such as denial.
4. Empowering identities – with this identity, disabled persons place the notion of disability in the foreground of their identities.
5. Complex identities – most people with disabilities do not identify solely with their impairment (Dajani, 2001).
6. Common identity – here disability is seen as a common identity or, in many texts, common culture. Barnes and Mercer (2001:525) describe this common identity as "membership of an oppressed or marginalised group extolling its virtues".

The following discussion moves from the concepts of 'identity' and 'stigma' in relation to 'disability' to their relation to students with hearing impairment and these students' choice for cochlear implantation.

### **2.3.5.1 Identity and stigma (in relation to students with hearing impairments and cochlear implantation)**

According to Social Identity Theory (Tajfel, 1981), an individual will remain a member of a group if that group contributes to positive aspects of his or her social identity, such as self-esteem. Bat-Chava (2000:420) argues that, through the route of individual mobility, 'deaf' people may assume a culturally hearing identity, assimilating as much as possible into the hearing world by using their residual hearing (either through amplification or cochlear implants) and speech-reading often resulting in a positive social identity through academic and professional accomplishment. Through the route of social change, other deaf people may assume a culturally deaf identity, coming together with other deaf individuals by using Sign Language and participating in social, civic and political organisations and networks. The selection of a culturally hearing identity is often evident when students with hearing impairment attempt to fully assimilate and push themselves to overachieve in mainstream environments. They work much harder than their hearing peers to perform, with successful achievement in turn building their self-esteem.

In a recent study conducted by Hindhede (2011:174), it was reported that trying to pass as having normal hearing, or trying to cover it up, was described by over half of the participants as being a typical way of managing the disability outside of their home or at work. Tactics to conceal the hearing impairment included turning the better ear to the conversational partner, focusing on the face in order to lip-read, pretending to hear what was being said, accepting being excluded from conversations or avoiding social gatherings such as dinner parties with unfavourable communication conditions due to poor lighting or background music. Hindhede (2011:174) further claims that, if the resistance to being categorised as hearing impaired cannot fully overcome the constraint of the physical impairment as, by avoiding instead of confronting it, these students are not able to enjoy full and equal participation in social life.

Students with hearing impairment in higher education with a culturally hearing identity are often forced, due to the visibility of their hearing instruments, to accede to the externally ascribed, disempowering label of being disabled. Some may attempt to overcompensate for their hearing impairment, whilst others deny their impairment and assume identities that shift the focus away from their disability. One's personal construction of disability is a multifarious phenomenon, resulting in people with disabilities often having complex identities, seeing themselves as 'normal' and with limited identification with the hearing impairment.

The choice of cochlear implantation also impacts on identity. Many students with hearing impairment have received one or even two cochlear implants during the course of their life, usually prior to entering higher education. This is an emotive topic as some critics view the choice of surgical implantation as a cure – trying to become 'normal' and to being in denial concerning one's disability. Beauchamp-Pryor (2011:7) argues that, given the lack of control and choice

experienced by disabled people in the past, it is important that society recognises the validity of an individual's choice concerning cure, whether these choices support medical research and medical intervention and treatment, or not. A key issue in the debate about the appropriateness of implantation for children with hearing impairment has been around the notion of identity – where the individual 'fits in'. The aim of an implant is to improve the ability to hear and access sound. One study looked at the impact of cochlear implantation on a group of 29 young people aged 13–16 years, examining their understanding and degree of satisfaction with the way their implants work for them, their social and communication abilities, their educational challenges and their identity. Overall, there was a feeling that the implant was essential to them with many of the group reporting that they felt bereft if there was a problem and they could not use it. They mentioned numerous advantages of implantation and also a few disadvantages. Many of the participants identified as being culturally hearing (Wheeler, Archbold, Gregory & Skipp, 2007).

Nicolopoulos, Archbold and O'Donoghue (1999) as well as Peng, Spencer and Tomblin (2004), among others, have reported many advantages to cochlear implantation, such as consequent improvement in speech and spoken language skills, which may carry the implication that to hear is better. Wald and Knutson (2000:89) questioned a group of 45 adolescents with and without cochlear implants regarding issues of Deaf identity and concluded that the group were similar in many respects but that the cochlear-implanted group rated hearing identity as a desirable goal more favourably than the non-implanted group. The authors attribute this to the audiological benefit that the implanted group received. In another study by Wheeler *et al.* (2007:314), some participants commented on the fact that, because of their good spoken language skills, and in particular speech intelligibility, they were sometimes perceived as hearing by people who did not know them well. It was found that the majority of the participants recognise themselves as intrinsically deaf (having a hearing impairment) in the sense that they cannot hear without their implant but they do not demonstrate a culturally deaf identity. These results are consistent with a study by Punch and Hyde (2005:135), looking at "hard-of-hearing" adolescents and their identity.

#### **2.3.5.2 Deaf Identity Development Scale (DIDS)**

In 1993, Glickman and Carey developed an instrument, the Deaf Identity Development Scale (DIDS) to measure how deaf people identify with the Deaf community and Deaf culture. Along the continuum, four kinds of Deaf cultural identities, presumed to be developmentally related, are provided. The first kind of identity is called 'culturally hearing', which refers to the dominant 'hearing' understanding of deafness as a medical pathology or disability. The second kind of Deaf cultural identity is called 'culturally marginal'. This orientation is typical of people who experience themselves as fitting between the Deaf and hearing worlds, comfortable in neither. The third kind of Deaf cultural identity is called 'immersion'. This is relevant to the period when Deaf people immerse themselves in the Deaf world. The last kind of Deaf cultural identity is called 'bicultural'.

Deaf people who have achieved some feeling of comfort in both Deaf and hearing settings and some skills in negotiating these cultural differences are conceptualised as bicultural (Glickman & Carey, 1993). Impairment (bodily difference) and disability (social creation) were similarly described by Shakespeare and Watson (2001:22) as not being “dichotomous, but ... different places on a continuum or different aspects of a single experience”.

In a study exploring the potential of computer-mediated communication to reduce the social isolation experienced by many deaf or hard of hearing individuals, one student said, “Because I am partially deaf and use oral communication, I find that I don’t really belong to the signing deaf community or to the hearing community” (Bishop, Taylor & Froy, 2000:1078). This quote illuminates the complexities of self-identity, something which all persons with hearing impairment face. In terms of Glickman and Carey’s scale, this student would have a culturally marginal deaf identity.

Hindhede (2011:169), using disability theory as a framework and social science theories of identity, explored empirically how working-age adults confront the medical diagnosis of hearing impairment. It is argued that, compared with other types of impairments, in its manifestation, hearing impairment is invisible, which leaves the hearing disabled identity open to perpetual negotiation. For the hearing impaired, the identification of the self as disabled or able-bodied, of being hearing or of being categorised as hearing impaired by others, are matters of negotiation. The results of this study show that, instead of expressing emotions of anger, the participants often rely on pre-acknowledged and pre-articulated feelings which are culturally available; where “shame is a central possibility” (Goffman, 1963:7).

### **2.3.5.3 Goffman: the notion of ‘shame’**

According to Cooley (2009:291), shame is an automatic bodily sign of a threatened social bond. The participants in his study did not argue for unity in a struggle against a society which ‘disables’ them by not recognising their difference, and by not allowing them full membership in society, instead, the participants used words like ‘awkward’ and ‘uncomfortable’ thus denying an emotion of shame.

The nature of a ‘good adjustment’ ... requires that the stigmatized individual cheerfully and unselfconsciously accepts himself as essentially the same as normals, while at the same time he voluntarily withholds himself from those situations in which normals would find it difficult to give lip service to their similar acceptance of him ... It means that the unfairness and pain of having to carry a stigma will never be presented to them; it means that normals will not have to admit to themselves how limited their tactfulness and tolerance is ... A phantom acceptance is thus allowed to provide the base for a phantom normalcy (Goffman, 1963:22).

Findings from the Hindhede (2011) study suggest that, in order to avoid embarrassment, participants pretended that they have heard what has been said and in order to avoid any awkward exposure and in an attempt to ‘be normal’, they refrain from requesting any accommodations that

would help facilitate communication. They also developed what they perceive from their point of view, to be perfectly adequate coping strategies.

### **2.3.6 Summary**

Society construes deafness in two ways: 'deaf' as a category of disability and 'Deaf' as being a member of a linguistic minority group with their associated culture. Hearing impairment in this study was viewed as an impairment of the sense of hearing, which results in the person being disabled; often due to social, attitudinal and physical factors. The prevalence rate of disability globally is around 15 per cent and in South Africa, reports vary between 6,3 and 7,9 per cent, bearing in mind that 'having a disability' is generally underreported in developing countries. A review of the literature indicated a paucity of research related to hearing impairment, both nationally and on the African continent, and highlighted that identity (which is often negotiable) is a key issue for persons with disabilities and can vary between identifying as 'normal' to a 'disabled bodily state'. In light of this, hearing impairment, which is often invisible, leaves the hearing disabled identity open to perpetual negotiation (between identifying as being hearing or hearing impaired). Linked to this concept of identity is the notion of 'shame'. Persons with hearing impairment, in order to avoid feeling shame, often pretend that they have heard to avoid being exposed. The following section focuses on the clinical and audiological aspects of hearing impairment.

## **2.4 UNDERSTANDING HEARING IMPAIRMENT**

The term 'hearing loss', instead of 'hearing impairment' is used here as it is the preferred term in audiological and medical information sources. Hearing impairment, recognised globally as a pandemic (Tucci, 2009), needs to be understood in terms of the various types and degrees of hearing loss. It can take many forms, from a mild conductive hearing loss in one ear to a profound sensori-neural hearing loss in both ears. This information is pertinent to the study to aid understanding of the type and degree of hearing loss (impairment) of the student participants which related to their language development, barriers faced and the types of support (including human and technical) required.

### **2.4.1 Types of hearing loss**

Hearing loss, according to the South African Society of Hearing Aid Acousticians (2009), can be categorised by which part of the auditory system is damaged. There are three basic types of hearing loss: conductive hearing loss, sensori-neural hearing loss, and mixed hearing loss. The most common type of hearing loss is called 'sensori-neural' or 'nerve deafness'.

### **2.4.1.1 Conductive hearing loss**

Conductive hearing loss usually results from any type of interference with the transmission of sound from the outer ear canal to the eardrum, through the middle ear cavity and the ossicles (tiny bones), to the inner ear. This type of hearing loss commonly presents as a reduction in sound level or the inability to hear faint sounds. Conductive hearing losses are usually able to be treated medically or surgically (SAAA, n.d.). Some possible causes of conductive hearing impairment include: ear infection (otitis media), fluid in the middle ear from colds, allergies, poor Eustachian tube functioning, perforation of the tympanic membrane, benign tumours, impacted earwax (cerumen), infection in the ear canal (external otitis), swimmer's ear (otitis externa), presence of a foreign body or congenital deformities (e.g. Down syndrome, Franceschetti syndrome, Treacher-Collins' syndrome or achondroplasia (dwarfism) (American Speech-Language-Hearing Association, 2012; Roland, Marple & Meyerhoff, 1997).

### **2.4.1.2 Sensori-neural hearing loss**

This type of hearing impairment is also known as 'nerve deafness' and it is mostly caused by damage to the pathway for sound impulses from the hair cells in the cochlea of the inner ear, or to the nerve pathways from the inner ear (retrocochlear) to the brain. Sensori-neural hearing loss results in the inability to hear faint sounds, which affects the ability to hear clearly as well as speech understanding. Sensori-neural hearing loss is permanent and cannot be corrected medically or surgically (SAAA, n.d.). It is the most common type of hearing loss, accounting for 60–90 per cent of all deafness, according to the Royal National Institute for the Deaf (RNID, 2007). The American Speech-Language-Hearing Association (2012), provide some possible causes which includes illnesses, drugs that are toxic to hearing, hearing loss that runs in the family (genetic or hereditary), aging, head trauma, malformation of the inner ear and exposure to loud noise. Further causes also include the mother having rubella or German measles in the first trimester of pregnancy, RH factor incompatibility at birth, meningitis, and infectious diseases, such as the mumps (Smith, Polloway & Dowdy, 2001:230).

### **2.4.1.3 Mixed hearing loss**

Sometimes a sensori-neural hearing loss occurs in combination with a conductive hearing loss. In other words, there may be damage in the inner ear (cochlea) or auditory nerve as well as the outer or middle ear. When this combination presents, it is known as a mixed hearing loss (Roeser, Valente & Hosford-Dunn, 2007:101).

## **2.4.2 Degrees of hearing loss**

Hearing loss is described in terms of degree of loss and is measured in terms of decibels (see Table 2.2). The hearing impairment is plotted on a graph called an audiogram and is reported as a function of frequency or pitch and decibels or intensity. An audiogram is a chart which records the

hearing response of each ear from 125 Hz (hertz) to 8000 Hz, which is the range most essential for speech perception. A hearing impairment of less than 25 dB (decibels), averaged across the frequencies of 500, 1000, 2000 and 4000 Hz (the range of frequencies involved in the perception of speech), is regarded as being within the normal range of hearing. An average hearing impairment of 25 dB or more in both ears is however regarded as a significant hearing impairment, and an average hearing impairment of more than 70 dB in both ears can be regarded as deafness (Richardson, 2001:183).

Hearing response is unique for each patient. There are five broad categories that are typically used. The numbers are representative of the patient's thresholds, or the softest intensity that sound is perceived at:

**Table 2.2: Degrees of hearing impairment**

Decibels	Degree	Explanation/Examples
0 to 20 dB	Normal hearing	
21 to 40 dB	Mild hearing loss	Faint or distant speech may be difficult. Lip-reading can be helpful.
41 to 55 dB	Moderate hearing loss	Conversational speech can be understood at a distance of 1 m to 1,5 m. As much as 50 per cent of discussions may be missed if the voices are faint or not in line of vision.
56 to 70 dB	Moderate to severe hearing loss	Speech must be loud in order to be understood; group discussions will be difficult to follow.
71 to 90 dB	Severe hearing loss	Voices may be heard from a distance of about 30 cm from the ear.
91 dB plus	Profound hearing loss	Loud sounds may be heard, but vibrations will be felt more than tones heard. Vision rather than hearing is the primary avenue for communication.

Adapted from the National Deaf Education Center (2011)

### 2.4.3 Age of onset

The age at which hearing loss occurs is crucial for the acquisition of a spoken language. The older a child at age of diagnosis, the more likelihood there is of a language delay and other related complications.

#### 2.4.3.1 Pre-lingual deafness

When a hearing loss occurs before the acquisition of language, it is known as pre-lingual deafness. It can either occur through of loss of hearing in early infancy or as a result of various congenital conditions. This type of deafness impairs a person's ability to attain a spoken or oral language as his or her first language. Individuals either make use of hearing aids to enhance their residual

hearing or have a cochlear implant, bypassing the auditory canal. Others elect to make use of Sign Language as their first language and they become part of the Deaf community and embrace Deaf culture (Ladd, 2003).

#### **2.4.3.2 Post-lingual deafness**

This is found when a person loses his or her hearing after acquiring language. Deafness after birth may be acquired suddenly as a result of viruses, disease and injury, or progressively as a result of a hereditary and idiopathic causes (see Woodcock & Aguayo, 2000:18), for a review of the many causes of hearing loss and deafness (Woodcock, Rohan & Campbell, 2007:361). Deafness can even manifest as a result of a side-effect of various medications. Usually, the hearing loss is quite gradual and often goes undetected for a long time. Once diagnosed, individuals often learn to lip-read, wear hearing aids or have cochlear implants. This type of deafness is far more common than pre-lingual deafness (Mathers, Smit & Concha, 2001).

#### **2.4.4 Bilateral versus unilateral hearing loss**

Bilateral hearing loss means both ears are affected, while unilateral hearing loss means only one ear is affected (Berke, 2007; Roland *et al.*, 1997).

#### **2.4.5 Symmetrical versus asymmetrical hearing loss**

Symmetrical hearing loss means that the degree and configuration of hearing loss are the same in both ears. An asymmetrical hearing loss is one in which the degree and/or configuration of the loss is different for each ear (Berke, 2007; Roland *et al.*, 1997).

#### **2.4.6 Progressive versus sudden hearing loss**

Progressive hearing loss is a hearing loss that becomes increasingly worse over time. A sudden hearing loss is one that has an acute or rapid onset and therefore occurs quickly, requiring immediate medical attention to determine its cause and treatment (Berke, 2011; Roland *et al.*, 1997).

#### **2.4.7 The audiogram: explanation and significance**

Refer to Figure 2.3 which depicts various degrees of hearing loss on an audiogram. Frequency (or pitch) is evident on the horizontal axis, from low frequencies on the left (125 Hz) to high frequencies on the right (8000 Hz). The amount of hearing loss is shown on the vertical axis in decibels (dB). The audiogram provides a measure of the person's hearing threshold at a particular frequency, with the higher numbers indicating a greater degree of hearing loss. Thresholds from zero to 15 dB are considered within the normal hearing range, from 20 to 40 dB represents a mild hearing loss, from 41 to 70 dB depicts a moderate hearing loss, 71 to 90 dB is severe and, finally, over 91 dB depicts a profound hearing loss. Furthermore, the shaded area extending across the audiogram (the so-called 'speech banana' which contains 'scrambled letters') is a static



representation of speech sounds (both vowels and consonants). Only the shaded area of the speech banana above the threshold curve is audible; portions below will not be perceived (Ross, 2004).

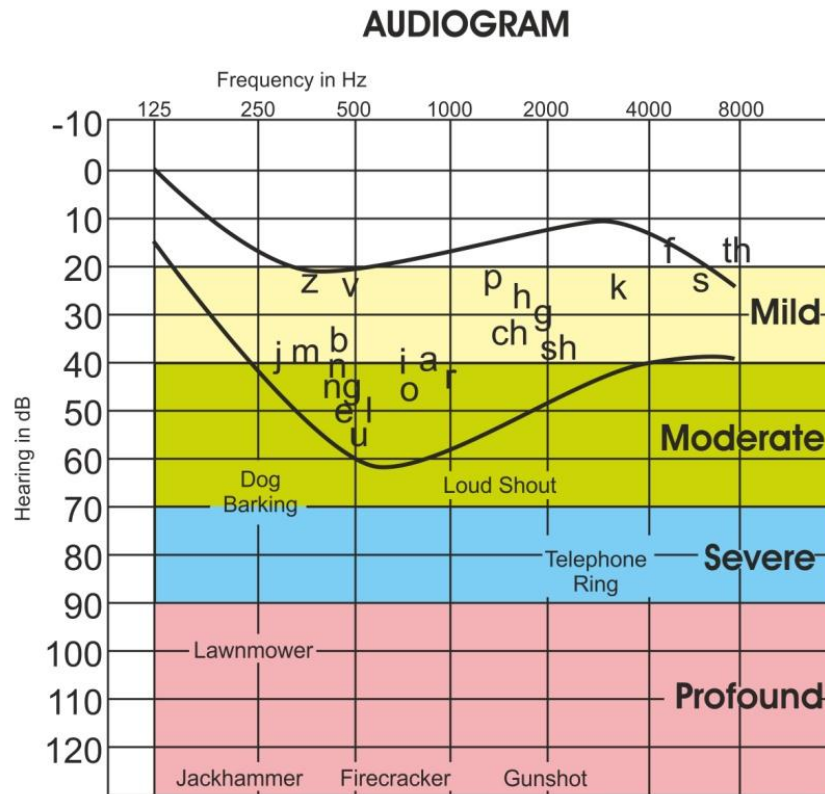


Figure 2.3: Audiogram indicating degrees of hearing loss (Hearing Aid Insider, 2012)

#### 2.4.8 Prevalence of hearing impairment

In the following two sections the prevalence of hearing impairment, both internationally and nationally, will be presented as well as statistics depicting the prevalence rates in primary and secondary schools.

##### 2.4.8.1 Prevalence: globally and in South Africa

With increasing demand for higher education, there has been an increasing number of students with disabilities attending colleges and universities (Hall & Belch, 2000; Henderson, 1999:13; Hodgkinson, 1985; Wiseman, Emry & Morgan, 1988). In the USA, estimates indicate that increases range from 10 per cent (Henderson, 1999:13) to 26 per cent among colleges that offer four-year programmes (Newman, Wagner, Cameto & Knokey, 2009:13). Given that students with disabilities who obtain a college education are 63 per cent more likely to find employment than students who do not have a college degree (Dutta, Kundu & Schiro-Geist, 2009:10), these increases are understandable.

Hearing impairment is recognised as a global pandemic. The World Health Organisation's (WHO) global estimate for 'disabling' hearing impairment more than doubled between 1995 and 2005 (BuaNews Online, 2007). Globally, it is also the most common congenital anomaly found in newborns. Approximately three per one thousand babies are born with a significant hearing impairment. At least 278 million people worldwide have some form of hearing impairment, with two thirds of them living in developing countries (Tucci, Merson & Wilson, 2009:31), with UNICEF estimating that every day, between 800 and 900 babies are born with hearing impairment in developing countries (BuaNews Online, 2007).

Statistics regarding hearing impairment in the UK revealed the following data: an estimated 9 million people have a hearing impairment, approximately 28 per cent are between 16 and 60 years of age and 72 per cent over 60, every year, around 840 babies are born with a significant hearing impairment and about 1 in 1 000 children are deaf at three years of age. Furthermore, about 3,5 million people of working age (16–65 years old) are deaf or hearing impaired, with 160 000 of these being severely or profoundly deaf (Papworth Trust, 2011:14).

The incidence of hearing impairment in Australia is also significant, with nearly 1,4 million Australians estimated to have a disabling level of hearing disorder in 2003 (Australian Institute of Health and Welfare, 2008:15). Estimates for the size of the deaf population in the United States (US) reveal that between 2 and 4 of every 1 000 people are 'functionally deaf', with 1 out of every 1 000 diagnosed as deaf before 18 years of age. If people with severe hearing impairment are included in the calculation of those who are deaf, then the number is 4 to 10 times higher, and if everyone who has any kind of 'trouble' with hearing is included then the figures are between 37 and 140 people out of every 1 000. Across all age groups, in the United States, approximately 1 000 000 people (0,38 per cent of the population, or 3,8 per 1 000) over 5 years of age are "functionally deaf" (Mitchell, 2005:113).

Accurate data concerning the prevalence of persons with disabilities in South Africa is not readily available. McLaren, Solarsh and Saloojee (2004:12) argue that the lack of consensus around defining 'disability' seriously impedes the ability to identify people with disabilities, develop disability indicators and conduct research on disability. The authors (McLaren *et al.*, 2004:12) furthermore state that, until there is one defined definition of disability, "obtaining accurate disability data ... will remain problematic."

Two of the most recent surveys which provide some data on the prevalence of disability in South Africa are the National Population Census of 2001 (SSA, 2005) and the Community Agency for Social Enquiry (CASE) Disability Survey (Schneider, Claassens, Kimmie, Morgan, Naiker, Roberts & McLaren, 1999) conducted for the Department of Health. In 1994, the Central Statistics Service mid-year estimate suggested that there were 4 million people with hearing impairment: 402 847 profoundly Deaf, 1 208 539 extremely hard of hearing and 2 417 078 hard of hearing people in the

country. Of these, 1 611 386 were thought to use South African Sign Language (SASL) as a first language. However, the 1996 and 2001 national census statistics show 383 408 and 313 583 Deaf people respectively accounting for approximately 20 per cent of all disabled people in South Africa (SSA, 2005).

In their report titled “Disability and Disablement”, McLaren *et al.* (2004:168) provide the following disability prevalence data for South Africa (refer to Table 2.3):

**Table 2.3: Disability prevalence**

Prevalence of reported disability, by type of disability (per cent)			
Disability type	Census 1996 (per cent)	Census 2001 (per cent)	CASE 1999 (per cent)
Hearing	1	0,7	1,0
Crude prevalence rate of disabilities	6,5	5,0	5,9

(Schneider, Claassens, Kimmie, Morgan, Naicker, Roberts & McLaren, 1999; SSA, 1996; 2001)

A decrease in the prevalence of hearing impairment is depicted between 1996 and 2001, although the figures from the CASE study in 1999 correlate with the 1996 census figures. Furthermore, the estimates of overall crude prevalence rates for hearing impairment across the life span as given by the Deaf Federation of SA (DEAFSA) are shown in Table 2.4, indicating a total rate of hearing impairment, across all ranges of hearing impairment at a prevalence rate of 10 per cent.

According to the 2010 General Household Survey (SSA, 2011:88), the following statistics for hearing impairment were reported: Some difficulties with hearing 778 000; a lot of difficulties with hearing 178 000; unable to hear 25 000 and a total of 981 000. Furthermore, 91 000 people reported making use of assistive devices such as hearing aids.

**Table 2.4: Estimates of crude prevalence for hearing impairment (per cent), 2004**

Range of hearing impairment	Prevalence rate (per cent)
Mild	6
Moderate	3
Severe / profound	1
Total rate hearing impairment	10

(Deaf Federation of South Africa (DeafSA), 1997)

The Deaf Federation of South Africa (DeafSA) reportedly believes that there are more deaf persons in South Africa than the 313 583 indicated by the 2001 census due to the fact that there is a high undercount of disabled persons. Their research further reveals that 60 per cent of culturally

Deaf persons in South Africa are functionally illiterate, with the adult deaf person's general knowledge level (on average) being equal to that of an eight-year-old hearing child, and approximately 70 per cent of the Deaf remain unemployed (Van Rooyen, 2009). These academic consequences, according to Storbeck (1999:493) and Magongwa (2010) have an effect on the development of the Deaf child's identity, self-worth and cultural development.

#### 2.4.8.2 Statistics: Primary and secondary schooling

Statistics (see Table 2.5) provided by the Department of Basic Education (South Africa, 2011) reveal the following prevalence of learners with hearing impairment within the schooling system in South Africa in 2007:

**Table 2.5: Learners in schools by primary disability, 2007**

Disability	Ordinary schools: separate class	Ordinary schools: mainstream class	Special schools (35 in total in SA for Deaf/HoH)
Hard of hearing (HoH)	1 168	6 616	1 414
Deaf	397	1 009	5 647
Total	1 565	7 625	7 061

(South Africa, 2011:slide 7)

It is evident from the above data that many more learners who are classified as 'hard of hearing' are placed in mainstream classes in ordinary schools than learners classified as 'Deaf'. Some of the reasons for this may include the move towards inclusion, availability of technology, and the fact that most infants born with a hearing impairment are born to hearing parents who then choose the oral approach for their children, etcetera. A possible outcome of the trend towards inclusion of learners with a hearing impairment in inclusive settings would be the increased numbers of students applying for access to higher education, which places emphasis on the need to support these students better during their further studies.

There are, however, also significant proportions (47 per cent) of learners who are not participating in any form of education. In 2009, only 53 per cent of 16–18-year-olds who have a disability attended an educational institution. This has ramifications in terms of transition to higher education, creating a barrier to access (SA, DoBE, 2010:23). Presuming an improvement in participation by learners with a disability in secondary education, because of the drive for inclusive education in South Africa, this would also lead to an increased demand for access to higher education and thus provide impetus for improved delivery of support services.

### 2.4.8.3 Statistics on disability and hearing impairment in higher education

With the increasing demand for higher education, there has been an increasing number of students with disabilities attending colleges and universities (Hall & Belch, 2000:5; Henderson, 1999:13; Hodgkinson, 1985:16; Wiseman *et al.*, 1988:256).

The United Kingdom's (UK) Higher Education Statistical Agency (HESA, 2011) figures from 2008 indicated that, nationally, 2,7 per cent of staff employed in higher education and 7,3 per cent of all students declare themselves as disabled. The most recent figures for students with disabilities from 2010–11 (HESA, 2011), however, show that 8,20 per cent (74 230) of registered students, at all levels of study, in the (UK) have some form of disability. Of the 74 230 students with disabilities, 2 565 (3,45 per cent) disclosed being Deaf or having a serious hearing impairment (HESA, 2011). This figure is likely to be an underestimate for the following reasons:

- information concerning disabilities is not always available from all HE institutions;
- if students declared another form of disablement in addition to hearing impairment, they were represented in the national statistics as having multiple disabilities and cannot be separately identified as having a hearing impairment;
- students might choose not to declare to their institutions that they were deaf or had a hearing impairment; and
- students who have the milder but more common forms of hearing impairment do not consider that they need additional support in their studies so do not declare their hearing impairment (Richardson, 2001:311).

In Australia, the participation rate and number of students with disabilities have increased year on year (Brett, 2010:4). In 1998, there were 17 574 domestic students enrolled in a higher education programme who had disclosed disability on enrolment, and in 2008, this figure had risen to 30 872. Students disclosing disability now comprise 4,07 per cent of all domestic students (Department of Education Employment and Workplace Relations, 2007). Whilst over 30 000 university students in Australia disclosed disability on enrolment in 2008, the number of students disclosing hearing-related disability is a subset of this group. Data on the types of disability disclosed are not routinely reported, but data from 1996 to 2002 (Brett, 2010:5) demonstrate that hearing impairment comprises approximately 10 per cent of disability disclosures.

In the United States, in 1993, more than 25 000 students with hearing impairment were enrolled in higher education programmes (National Center for Educational Statistics, 1994:16). Lewis and Farris (1994; 1999) carried out surveys based on roughly a 20 per cent sample of all institutions of higher education, estimating that in 1993 and 1998 the total number of students in the USA who had identified themselves to their institutions as either deaf or hard of hearing was 20 040 and 23 860 respectively. These figures represent 0,14 per cent and 0,16 per cent of the corresponding

national populations of 14,4 million and 14,6 million students (Richardson, 2001:302). In a study conducted by Henderson (1999), estimates indicated that increases in participation of students with disabilities range from 10 per cent to 26 per cent among colleges offering four-year programmes (Newman *et al.*, 2009:15).

Statistics in South Africa regarding the numbers of students who have disclosed disabilities, and more specifically hearing impairment, are not readily available due to factors such as differing definitions of disability, misinterpretation of disability codes on university application forms and stigma associated with disclosure of a disability. According to Crous (2004:228), it was found in a survey of three universities in South Africa, that less than 0,5 per cent of the student population was represented by students with disabilities. A more recent study (FOTIM, 2011), involving fifteen of the twenty-three universities in South Africa, reported the following findings:

- the proportion of students with disabilities as a percentage of the total student population was less than 1 per cent;
- disability units support, on average, between 21 and 400 students per year;
- only 17 out of 23 universities have a disability unit;
- there is a focus on supporting visual and mobility impairments; and
- very few disability units provide services for hearing impairment, cognitive and psychosocial disabilities (FOTIM, 2011).

HEMIS (Higher Education Management Information System) data obtained from the Department of Education (for the period 2003 to 2010) indicated the following prevalence of disability in higher education institutions in South Africa:

**Table 2.6: Statistics for disclosed disability in higher education (2003–2010)**

Disability	2003	2004	2005	2006	2007	2008	2009	2010
Communication total	48	56	72	62	76	81	80	116
Disabled but unspecified total	583	926	800	603	832	839	854	769
Emotional total	50	53	95	86	94	88	134	151
Hearing total	155	163	197	245	277	299	302	326
Intellectual total	84	95	98	230	323	413	524	684
Multiple total	61	69	27	41	48	85	49	51
Physical total	2 974	4 286	4 101	786	914	1 003	1 030	1 250
Sight total	431	633	1 038	2 819	2 508	2 040	1 672	1 630
Total	4 386	6 281	6 428	4 872	5 072	4 848	4 645	4 977

(DHET, 2010)

The data in Table 2.6 reveal that the number of students disclosing a hearing impairment increased from 155 in 2003 to 326 in 2010.

The 2012 statistics regarding students with disabilities as per the Student Information System (SISS) at the case study university, revealed the following: Deaf = 8 students, other Deafness = 43

students and the total number = 314. It is not clear what 'other Deafness' is defined as but these statistics clearly show that the numbers of students with disabilities in higher education are increasing and therefore also their academic and other support needs.

From the available data, it was evident that students with disabilities are under-represented in higher education, not only in South Africa, but also in more developed countries. This is a most unsatisfactory situation. Participation in higher education, as argued by Richardson (2001), is associated with access to better-paid occupations and professions and therefore the under-representation of students with hearing impairment has major consequences in terms of a personal cost to the individuals in question and also indirectly to the national economy. Welsh and MacLeod-Gallinger (1992) add that the benefits of participation in higher education may be greater to people with a hearing impairment because gaining qualifications tends to reduce the discrepancy between their earnings and those of hearing people. Furthermore, students with hearing impairment who graduate, even with only vocational degrees, experience significant earnings benefits and reductions in the duration of time spent on government social support when compared with those who do not graduate with a degree (Schley, Walter, Weathers & Hemmeter, 2011).

#### **2.4.9 Communication and accessibility**

The focus of this section is on communication choice and communication access.

##### **2.4.9.1 Introduction**

The following discussion includes the aspects of one's choice of mode of communication, access to communication through the use of hearing augmentative devices, various assistive listening devices as well as other strategies such as lip-reading and speech-reading. The controversial choice of oralism (amplification of residual hearing and oral speech) versus manualism (use of Sign Language and being a member of the Deaf community) has a direct bearing on one's identity. The inclusion of these communication aspects is important as there are many more students with hearing impairment making use of the oral communication method in higher education than those who make use of Sign Language, and furthermore the student participants in this study were oral and made use of the communication strategies and technologies discussed below. There is also a need for a better understanding of the availability and usability of technologies, such as electronic note-taking, which is widely used in other countries but has yet to be implemented at universities in South Africa.

### 2.4.9.2 Communication choice

'Communication' refers to the process of sharing ideas and information. It is a process that is essential, and many say, innate, for all human beings (Owens, 2001:12). The question of how to promote the communication skills of people with hearing impairment is one of the most controversial topics in the field (Luckner, 2003:1). There are also various methodologies available to communicate with persons with a hearing impairment. When young children are diagnosed with hearing impairment, making the choice of which methodology to use is a very personal and difficult decision that most parents do not take lightly. The four main methods of communication will be discussed, namely oralism, manualism, bilingualism and total communication.

Oralism as an approach to communicating with and educating students who have a hearing impairment advocates for speech, speech-reading, lip-reading and the interpretation of gestures. The use of oralism is increasing, perhaps due to the fact that 95 per cent (approximate figure) of children with a hearing impairment at birth are born to parents who have no hearing impairment at all (Woodcock *et al.*, 2007:361) as well as the availability of increasingly sophisticated technologies to support communication access. Supporters of the oral approach believe that students can learn to communicate effectively by maximising residual hearing (American Council on Education, 1989) and thus disallow signing of any sort. The application of the oral method intends to provide opportunities for people with a hearing impairment to develop spoken communication skills.

This approach is supported by various schools in South Africa and abroad. Literature reports a correlation between use of the oral mode of communication and effective integration into mainstream settings (Mertens, 1989). Furthermore, some researchers argue that students with proficient oral communication skills may have more positive social experiences with hearing classmates than those with weak oral skills (Davis, 1986; Leigh & Stinson, 1991:12; Musselman, Mootilal & MacKay, 1996:53, 160; Powers, 1996:113).

There are those, however, who outright reject oralism at all costs and who favour manualism (Storbeck, 1994). Manualism is the opposite of oralism and it upholds Sign Language as the medium of instruction. Supporters of the manual approach believe that a combination of Sign Language and finger spelling should be used for both expressive and receptive communication (American Council on Education, 1989). Sign Language, which is recognised as a language in its own right, is thus accepted as the first language of the Deaf child. This perspective clearly advocates that the natural Sign Language acquired by a Deaf child provides the best access to educational content, and that learning of English would be a second language (Storbeck, 1994:55). There are, however critics of this approach as well.

Bilingualism refers to an approach to the education of the Deaf using both the Sign Language of the Deaf community as their first language as well as the spoken and written language of the



hearing world as the target or second language. This approach, also referred to as bilingualism/biculturalism, is based on the view that the Deaf are a linguistic and cultural minority. Deafness is consequently not considered a barrier to linguistic development, educational success and social integration. The view is that sign bilingualism will enable Deaf learners to become bilingual and bicultural, and to participate fully in both the Deaf community and the hearing world (Muthukrishna, 2001:153).

Total communication is viewed more as a philosophy than an approach. It was established in the early 1970s, and was essentially meant to include all communication channels whether used singly or in combination, to achieve complete communication between the hearing and the non-hearing. The required mode of communication in most total communication programmes is spoken English (or other language) supported by simultaneous signs (Storbeck, 1994: 59).

#### **2.4.9.3 Communication access**

Communication is the foundation of much of our lives and a basic human right. Communication access refers to making spoken language accessible to persons with a hearing impairment. Six out of the seven student participants in the current study made use of either hearing aids or cochlear implants. Although the participants did not make use of assistive listening devices, such as frequency modulation (FM) systems, it is important to discuss the availability of such technologies which are the norm in higher education institutions in first-world countries resulting in improved communication access.

#### **2.4.9.4 Hearing aids**

Each individual needs to undergo a thorough hearing evaluation by a qualified hearing healthcare professional such as an audiologist, to determine the most appropriate hearing aid/s to match the unique hearing impairment needs of the person. Hearing aids consist of a microphone, amplifier and receiver, and make use of batteries. There are different styles such as in the ear, behind the ear, in the canal and completely in the canal, depending on one's hearing impairment. Over the last few years, hearing aids have become increasingly sophisticated, moving from purely analogue to digitally programmable technology.

#### **2.4.9.5 Cochlear implants**

Cochlear implants become an option when hearing aids are of no use or if the individual has a very profound hearing impairment. They are also expected to meet various criteria for implantation. A cochlear implant is a surgically implanted electronic device which sends sound messages directly to the auditory nerve. The implant consists of an external microphone (which picks up sound from the environment), speech processor (which selects and arranges the sounds picked up by the microphone), a transmitter and receiver/stimulator, which receives signals from the speech processor and converts them into electric impulses, and an electrode array, which is a group of

electrodes that collect the impulses from the stimulator and send them to different regions of the auditory nerve. An implant does not restore normal hearing. Instead, it can give a person with a hearing impairment a useful representation of sounds in the environment and assist him or her to understand speech. Cochlear implantation is quite controversial, with some people viewing it as an incredible technological advancement, whereas others see it as an invasive procedure designed to change a deaf person into a hearing person (Clarke, 2003:xxxii; Schirmer, 2001:65; Waltzman & Roland, 2006).

#### **2.4.9.6 Lip-reading and speech-reading**

Lip-reading refers to watching the lips to extract whatever speech information one can, whilst speech-reading is concerned with watching the lips, tongue, teeth, cheeks, eyes, facial expressions, gestures, body language and anything else that will provide clues as to what the person is saying. Thus speech-reading encompasses lip-reading, plus much more. Both of these techniques allow hearing-impaired individuals to improve their understanding of speech substantially as they facilitate some speech perception under noisy environmental conditions. Students find that lip-reading is a non-exact and energy-draining skill, with them only being able to discriminate 30 per cent of the spoken language correctly in the absence of other cues (Demorest & Bernstein, 1997:902). Woodcock *et al.* (2007:370) further mention that lip-reading is impossible if the environment is poorly lit, if people are eating, covering their mouths, facing away or have their backs to a strong light source.

#### **2.4.10 Assistive listening devices (ALDs)**

Assistive listening devices help to increase the signal-to-noise ratio (SNR), which is important for people with a hearing impairment as the SNR has to be higher than for people with normal hearing in order for them to hear speech over background noise. There are three main types of ALDs, namely audio loop, frequency modulation (FM) and infrared, which are all wireless. Each can be used with or without a hearing aid and with an array of receiver attachments, depending on the user's needs and preferences, such as neck loops, silhouette inductors, in-the-ear buds and headphones. Assistive listening devices are designed to increase the loudness of specific sounds, minimise background noise, reduce the effect of distance and override poor acoustics. They are used in large areas, restaurants, for television viewing, in classrooms, lecture rooms and auditoriums.

#### **2.4.10.1 FM (frequency modulation) systems**

An FM system broadcasts signals by means of radio waves, can be used indoors or outdoors, covers several metres, passes through physical obstructions such as walls, is often used in classrooms and is highly portable when used with a belt-clip style transmitter. It, however, may be subjected to outside interference. Multi-frequencies allow for use by different groups within the same area, e.g. classrooms that are adjacent to each other (Holmes, 2000:57; Lewis, Feigin, Karasek & Stelmachowicz, 1991:270).

#### **2.4.10.2 Infrared systems**

An infrared system broadcasts signals by invisible light waves. It ensures confidentiality as it does not travel through solid surfaces and may be integrated with existing public address (PA) systems. Each person must make use of a receiver, which is compatible with most infrared emitters (Holmes, 2000:57).

#### **2.4.10.3 Audio induction loop systems**

An audio induction loop transmits via an electromagnetic field. It consists of a loop of wire encircling an area, which is connected to the output of an audio power amplifier. Hearing aids or cochlear implants that are fitted with a telecoil connect directly and discreetly to the system, with no additional induction receiver required. The system requires very low maintenance and the induction receivers are compatible with all loop systems. There may, however, be spill-over to adjacent rooms and an audio loop is susceptible to electrical interference (Holmes, 2000:57).

#### **2.4.10.4 Microphones to enhance speech intelligibility**

Although all of the abovementioned ALDs are very effective, the use of microphones can improve speech intelligibility for the person with a hearing impairment. Both the type of microphone as well as how it is used can affect the efficiency of the ALD. There are various types of microphones such as handheld, wired and wireless, lapel and boundary depending on the listening situation. Directional microphones (that can “zoom-in” on sound) are usually preferred over omnidirectional microphones as the former reduce the amount of background noise and improve the sound to noise ratio.

Classroom noise also affects other significant teaching/learning problems, including teacher vocal fatigue (overuse of their voice). In a survey by Smith, Gray, Dove, Kirchner and Heras (1997:81), 32 per cent of teachers reported having occasional voice fatigue and 20 per cent reported they had missed work due to voice problems. These, consequences, along with the learning deficits experienced by students in noisy rooms, are the costs of the current situation for both students with hearing impairments and their teachers (Nelson, Soli & Seltz, 2002:8).

### **2.4.11 Access technologies**

Computer-assisted real-time transcription (CART), computer-assisted note-taking (CAN) and C-Print (computer-aided speech-to-print) are not merely assistive listening devices. They are examples of the ingenious use of technology, which are particularly useful in the educational environment in order to improve real-time access to information. None of these technologies are currently being used in schools, colleges or universities in South Africa, despite being available since the early 1990s, but their value needs to be strongly endorsed.

#### **2.4.11.1 CART (Computer-assisted real-time transcription)**

CART is the preferred method of access for students with hearing impairment in tertiary education in the United Kingdom and the United States of America. CART is suitable for individuals or for groups and can be used in a classroom, courtroom or any other meeting (Cawthon, 2008/2009:456). The CART system provides a visual display of the speaker's words, giving a verbatim readout. A trained typist/reporter types on a stenographic keyboard, keeping up with the pace of speech. The words are also displayed real-time on a monitor or projection screen. The 'captured' speech (transcription) can be made available as an edited printout or as a saved file.

#### **2.4.11.2 CAN (computer-assisted note-taking)**

CAN is generally a less expensive option than CART (Cuddihy, Fisher, Gordon & Schumaker, 1994). With CAN, the speaker's words are displayed on a screen or laptop monitor, providing a visual display of his or her words. A note-taker, who should be a fast, accurate typist, types on a standard computer keyboard, in essence providing a summary of what is being said. This method is suitable for both individuals and groups, but it may not be suitable in all situations as only a summary is provided. The proceedings can be made available as an edited printout or as a saved file. Computer-aided note-taking (CAN) is inexpensive, easy to implement, and beneficial to the students. This technology has been available since the early 1990s (Cuddihy, Fisher, Gordon & Schumaker, 1994; James & Hammersley, 1993:63; Preminger & Leavitt, 1997:223).

It is important to highlight the technology options available to assist students with hearing impairment. Many educators (teachers in schools as well as lecturers at university—both in developed and undeveloped countries) remain unaware of this technology which has evolved over the last twenty years, considerably improving the ease of use and providing increased capability and reducing costs for universities, and ultimately benefiting students with hearing impairment (Stover & Pendegraft, 2005:94).

### **2.4.11.3 C-PRINT (computer-aided speech-to-print)**

C-Print is an alternative to CART and CAN. The speaker's words are also displayed on a screen or laptop monitor but with this system the captionist provides an almost verbatim transcription of what is said. C-Print makes use of word processing software aided by abbreviation software. The captionist makes use of both reduced keystrokes as well as text condensing strategies. C-Print was developed at the National Technical Institute for the Deaf (NTID), a college of Rochester Institute of Technology in the USA (Cawthon, 2008/2009:456).

### **2.4.12 Summary**

This section focused on the clinical and audiological aspects of hearing impairment by explaining the various types and degrees of hearing loss as well as whether it is a pre- or post-lingual loss. An explanation regarding the use of an audiogram, which measures hearing threshold at a particular frequency, was also provided. Thereafter the prevalence of hearing impairment, which is seen as a global pandemic, was discussed. In South Africa, it is estimated that at least 10 per cent of the population has some form of hearing impairment. The focus then shifted to higher education, communication choice and access. Although the population of students with disabilities is low in higher education, there has been a steady increase in the number of enrolments of students with hearing impairment. With regard to communication choice, more people with hearing impairments are opting for oralism (spoken language) which may be due to factors such as being born to hearing parents and the development of technologies such as digital hearing aids, cochlear implants and many other types of assistive listening devices.

## **2.5 CHAPTER SUMMARY**

In this chapter, the reader was introduced to the changing paradigms related to the views regarding disability, prevalence data with respect to both disability and hearing impairment, the construction of deafness as cultural linguistic minority or disability, as well as terminology and concepts associated with both hearing impairment and access to information and communication.

The focus of this study was on students with hearing impairment in higher education, drawing on the construction of deafness as a disability. The conceptual framework for viewing and interpreting the generated data lies in the bio-ecological models of disability, with emphasis being placed on the interactions between the (central) individual and his or her interrelated environments, as well as acknowledging that the experiences of both the social effect of an impairment, as well as restrictions from the social environment, affect a person's life experiences. Furthermore, I argue that students with hearing impairments are under-represented within higher education generally as well as South Africa and that universities need to improve their support for these students as the enrolments are on the increase, especially when considering the numbers of learners in mainstream classes in ordinary schools and their potential for access to higher education.

The next chapter will present a focused and concise explication of the legislative framework in relation to disability, the notion of inclusive education as well as the characteristics and experiences of students with hearing impairment in higher education. Research studies concentrated on coping strategies will also be explored.

## **CHAPTER 3**

### **INCLUSIVITY AND HIGHER EDUCATION: A LITERATURE STUDY**

#### **3.1 INTRODUCTION**

Following on from the first literature review chapter (see Chapter 2) where the concepts of the construction of deafness, conceptual models of disability, self-identity, hearing impairment and access to communication were presented, the focus of this chapter is on the educational environment and students with hearing impairments in particular. The initial part of this chapter (see section 3.2) looks at the conceptualisation and development of inclusive education, both globally and locally, including the reasons why South Africa has embraced inclusion. The next focus is on higher education (see section 3.3), with specific reference to accessibility, support services and accommodations for students with disabilities as well as the relationship between hearing impairment and educational factors such as attrition, persistence and the potential impact of hearing impairment on learning. The final part of this chapter draws attention to the barriers that students with disabilities in higher education face and the factors, revealed by literature, which promote their success such as disclosure, self-advocacy, self-determination, coping strategies as well as curriculum accessibility and the philosophy and principles of universal learning design (ULD).

At the outset of this discussion, it is important to note that most of the research on inclusive education has been conducted in the school environment due to the strategic decision by government to begin the process of inclusion in schools and then later develop the system. Despite this political decision, and the resultant inflow of financial, staff and other resources into schools to drive inclusion, all learners, at all levels, have a right to access quality education (UN, 2006) and all educators (not only teachers, but also lecturers) have the responsibility to include learners with disabilities. The holistic inclusion of students with disabilities and the provision of individualised and adequate academic (and other) support has yet to be fully realised in higher education in South Africa. The selected topics in this review of the literature will therefore cover issues such as support, which directly links to both barriers and the need for coping strategies.

#### **3.2 INCLUSIVE EDUCATION: CHANGING PARADIGMS**

This focus of this section is on the conceptualisation and development of inclusive education, both globally and in South Africa, as well as the policy and legislative framework.

### 3.2.1 Conceptualising inclusive education

Throughout history, changes in society are frequently paralleled with new ways of thinking or new paradigms. In the early 1970s and 1980s, the shift to inclusion (medical model thinking to social model thinking) took place as a result of changes in societal rationalisation. Further impetus for change was provided in the 1990s when the World Declaration on Education for All, adopted in Jomtien, Thailand (1990) (Hungerford & Volk, 1990), presented an overarching vision for the future, namely universalising access to education for all children, youth and adults, as well as the promotion of equity. This implies that barriers which would prevent the implementation of this vision should be identified and the necessary resources put in place to overcome them. According to the United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2009:8), inclusive education, is “a process of strengthening the capacity of the education system to reach out to all learners and can thus be understood as a key strategy to achieve Education for All (EFA)”. Inclusive education is thus viewed as an “overall principle that should guide all educational policies and practices; building on the premise that education is a basic human right and the foundation for a more equal and just society” (UNESCO, 2009:8).

The broad area of inclusive education has been researched and reported on by many authors (Ainscow, Booth & Dyson, 2006; Ferguson, 2008; Mutepfa, Mpofu & Chataika, 2007; Inclusion International., 2009; Riddell *et al.*, 2005a). Thomas and O'Hanlon (2004:xi) argue that inclusion is greater than simple integration or mainstreaming as it is deeply entrenched in a wide range of social, political, psychological and educational contexts. For example, initially the disability activists, with their politicised interpretation of the social model of disability, wanted to shift the origin of disability into the social domain. Thereafter the human rights movement, which was also informed by the social model but used a different interpretation, namely the rights of the individual, came to the fore (Samaha, 2007:33). And now, people with disabilities themselves criticise the social model of disability. One needs to take cognisance therefore of the fact that the drive for inclusion has been informed by these various political and social movements, each with its own agenda.

The philosophy of inclusion is concerned with creating and developing a system in which both equity and diversity are the goals and are truly welcomed. This allows an environment that celebrates the full integration of all members of society, irrespective of ethnicity, gender or disability status. Inclusive education, borne out of this philosophy, is a way of both thinking and doing, a means of challenging ableism. Inclusive education may also be viewed as “an issue of social justice in which separate education and special education [students] is not only unequal, but detrimental to the development of all students” (Gerrard, 1994:58). The concept of inclusive education, however, is often interpreted in different ways depending on varying contextual factors (Miles & Singal, 2010). Inclusion is also a culturally relative term with the way in which one country



attempts to implement inclusion being perceived as exclusionary in another country; hence the absence of a universal definition (Doherty, 2012:792).

The South African educational system defines inclusive education in two ways: firstly, a learning environment that promotes full personal, academic and professional development of all learners irrespective of race, class, gender, disability, religion, culture, sexual preference, learning style or language and, secondly, in the Education White Paper 6 (EWP6) (SA, DoE, 2001a:16) with the most relevant aspects of the definition related to higher education being about:

- (i) providing enabling education structures, systems and learning methodologies to meet the needs of all learners;
- (ii) acknowledging and respecting differences in learners whether due to age, gender, ethnicity, language, class, disability or HIV status;
- (iii) changing attitudes, behaviour, teaching methodologies, curricula and the environment to meet the needs of all learners;
- (iv) maximising the participation of all learners in the culture and the curricula of educational institutions, and uncovering and minimising barriers to learning; and
- (v) empowering learners by developing their individual strengths and enabling them to participate critically in the process of learning.

Chataika, McKenzie, Swart and Lyner-Cleophas (2012:391) state that countries such as Botswana, Zimbabwe, Kenya and South Africa conceptualise inclusion broadly “by acknowledging all children and youth as full members of society, and recognising their rights regardless of age, gender, ethnicity, language, socio-economic status or impairment”.

According to Hay and Beyers (2000:1–2) there are four reasons why SA embraced inclusion:

- (1) South Africa disentangled itself from the isolation of the apartheid era and had to align itself with international trends;
- (2) a large number of ANC exiles who returned from abroad brought with them the most recent educational idea;
- (3) a fragmented education system before 1994, seventeen different departments, a unitary system built via inclusive education; and
- (4) the new democratically elected government was committed to transform South African society from its exclusive nature into an inclusive society at all levels.

Inclusive education was a perfect way to do all of this. Whatever the reasons for embracing inclusion, what is more important is that the South African government decided to follow international trends regarding inclusion, embarking on a journey which strives to provide a more

just, unified and equitable education system for all. Policies driving inclusion in South Africa are broad and include the concept of diversity which is interpreted to include students with disabilities.

With regard to schools, Ainscow *et al.* (2006:15) developed a typology of six ways of thinking about inclusion in schools:

- (1) inclusion as a concern with disabled students and other categorised as 'having special education needs';
- (2) inclusion as a response to disciplinary exclusion;
- (3) inclusion in relation to all groups seen as being vulnerable to exclusion;
- (4) inclusion as developing the school for all;
- (5) inclusion as 'education for all', and
- (6) inclusion as a principled approach to education and society.

In an ideal world, full inclusion would include all of these approaches.

Another angle from which to view inclusive education is through the philosophies of inclusion versus, inclusivity. Forlin (2004:196) argues that whereas inclusion relates to the placement of individuals with special needs into the mainstream environment, inclusivity embraces the challenge of providing the best possible learning environment for all, both disabled and non-disabled. This is the end goal for inclusive education in South Africa. Foreman (2008:31) agrees with this contention and adds that inclusivity –

... is a concept that extends well beyond students with a disability, and encompasses the idea that all schools [educational institutions] should strive to provide optimal learning environments for all their students, regardless of their social, cultural or ethnic background, or their ability or disability.

This thesis embraces both concepts of inclusion and inclusivity. Building on from this argument, inclusive practice can thus be defined as a way of thinking that allows inclusivity to be achieved (Berlach & Chambers, 2011:531). Without this fundamental shift in thinking, true inclusion is not possible to achieve. Besides this paradigm shift, relevant and adequate provision of resources and support need to be made to ensure the effective implementation of inclusive education across all levels of education, namely primary, secondary and tertiary (Swart & Pettipher, 2007).

Various researchers have investigated the impact and effectiveness of inclusive practices on students' educational experiences. Evidence from literature emphasises that "positive outcomes can be achieved by fostering an inclusive approach to teaching, learning and assessment in that best practice will improve provision overall by making appropriate changes for all students" (Borg, Maunder, Sharpling & Abson, 2008:3). Salend and Garrick's (1999:118) review of the literature on inclusion concluded that benefits of inclusion for students with disabilities may include gains in academic achievement, increased peer acceptance and richer friendship networks, higher self-esteem, avoidance of stigma and possible lifetime benefits, such as higher salaries and

independent living. Researchers also argue that the benefits of inclusive practice are broad and have the potential to minimise disadvantage for many people with and without impairment (May & Bridger, 2010; Salend & Garrick, 1999). In most countries where inclusive education has been well organised, it has been found to bring about equalisation of opportunity to education and social life (Abosi & Koay, 2008:2). Phasha and Moichela (2011:373–374) add that, in order for inclusion to be successful in South Africa by addressing the imbalances of the past, it should not be built on western ideals and contexts, but rather inclusion should rather be understood in relation to African values, built on notions aligned to African cultural beliefs and contexts.

The view of inclusion within this study involves a shift of focus from the individual to centres of learning (schools, colleges and universities), education systems and societies. The creation of inclusive cultures, policies and practices needs to take place at all levels of the education system. Furthermore, we need to move beyond pure access issues to the development of quality education for all, transforming outdated approaches to teaching and learning to flexible and responsive practices and in this way, promoting real, sustainable inclusion for all. In addition, the importance of the domestication of the UNCRPD, incorporating African values such as those referred to in Phasha and Moichela (2011:374), namely “interdependence, communalism and humanism”, cannot be over-emphasised.

### **3.2.2 Global initiatives**

Even though the Universal Declaration of Human Rights in 1949 (UNESCO, 2000) emphasised the right of every human to be educated, learners with disabilities were still discriminated against and institutionalised at that stage because they could not be accommodated in the education system. In 1975, an Education for All Handicapped Children Act (United States Department of Education, 1975) was passed which indicated that no child should be discriminated against and that every child has the right to receive a basic education of good quality. This commitment was based on both a human rights perspective and on the generally held belief that education is central to individual well-being and national development (Department for International Development, 2000). At the 1990 Jomtien World Conference in Thailand, the goals for education for all were set and it was proclaimed that every person – child, youth and adult – shall be able to benefit from educational opportunities which would meet their basic learning needs. In 1994, at the UNESCO World Conference on Special Needs Education held in Salamanca, Spain (UNESCO, 1994), the idea of inclusive education was given further impetus and culminated in the development of one of the most significant international documents in the special needs field, the Salamanca Statement. The statement argues that regular schools with an inclusive orientation are “the most effective means of combating discriminatory attitudes, building an inclusive society and achieving education for all” (UNESCO, 1994). The marginalisation and exclusion of learners from an educational

system was addressed at the Dakar World Education Forum in April 2000 (World Education Forum, 2000:6) culminating in the Dakar Framework for Action which has six goals:

- (1) expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children
- (2) ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to a completely free and compulsory primary education of good quality;
- (3) ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life skills programmes;
- (4) achieving a 50 per cent improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults;
- (5) eliminating gender disparities in primary and secondary education by 2005, and achieving gender equality by 2015; as well as
- (6) improving all aspects of the quality of education and ensuring excellence of all.

On 13 December 2006, the International Disability Caucus (IDC) celebrated and welcomed the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), which was adopted by the United Nations General Assembly after five years of negotiations. This was a significant achievement for disability activists, being the first human rights treaty of the century and the only international legal instrument dedicated to the rights of persons with disabilities. It marks a paradigm shift towards respecting persons with disabilities as individuals with human rights. The UNCRPD states (UNICEF, 2008) that disabled people should be guaranteed the right to inclusive education at all levels (primary, secondary and tertiary), without discrimination, and on the basis of equal opportunity. There are currently 155 signatories to the Convention since its opening for signature, 90 signatories to the Optional Protocol, 127 ratifications and accessions to the Convention and 76 ratifications and accessions of the Protocol. Article 24 of the UNCRPD (UN, 2006) is devoted to Education and states that:

States Parties recognize the right of persons with disabilities to education. With a view to realizing this right without discrimination and on the basis of equal opportunity, States Parties shall ensure an inclusive education system *at all levels* and lifelong learning directed to: (a) The full development of human potential and sense of dignity and self-worth, and the strengthening of respect for human rights, fundamental freedoms and human diversity; (b) The development by persons with disabilities of their personality, talents and creativity, as well as their mental and physical abilities, to their fullest potential; (c) Enabling persons with disabilities to participate effectively in a free society.

In many developed countries, legislation has also been a driving force towards a more inclusive higher education system. Two prime examples would be the United States of America (USA) and the United Kingdom (UK). The USA uses a legally mandated framework for disability support in higher education which entitles disabled students to receive support within higher education institutions. The agents of provision and sanction are two-fold, general anti-discriminatory legislation (Americans with Disabilities Act of 1990), a law that specifically provides for students with disabilities in HE (Rehabilitation Act of 1973, Section 504) and policies that provide for the support of disabled students in HE (Matshedisho, 2007a:709). The UK also makes use of an enforceable rights framework for disability support in higher education. The agent of provision and sanction is a general anti-discrimination disability law (Disability Discrimination Act of 1995,

amended 2005) and policies that provide specifically for students with disabilities in higher education. Institutional policies must assure non-discriminatory treatment of qualified students with disabilities in their recruitment, admissions, academic programmes, and non-academic services. Furthermore, the Disability Commission Act of 1999 provides for the establishment of a Disability Rights Commission, which investigates complaints and enforces the regulations of the Disability Discrimination Act. More recently, the Special Education Needs and Disability Act of 2001 was enacted, with Chapter two creating new rights for disabled students in the UK higher education system. Since 1 September 2002, universities in the UK have been required to make reasonable adjustments, such as retrofitting and modifying their built environments, albeit in stages, so that they are accessible to disabled students (Matshediso, 2007a:692).

Since the introduction of non-discriminatory legislation in various countries there have been many changes in higher education:

- (1) “colleges and universities have developed systems that provide access to qualified students with disabilities to participate effectively in academic and social programs” (Hartman, 1993:9);
- (2) “changes in faculty attitudes and practices” (Vogel, Leyser, Wyland & Brulle, 1999:173);
- (3) “increasing community awareness of the needs and problems of students with learning disabilities” (Levinson, 1986:296; Nielsen, 1997:169); and
- (4) “an increase in students’ self-awareness and knowledge of their own disabilities” (Ryan & Price, 1992:10).

Other authors, however, are not as optimistic. One particular study, which examined the potential of the current government strategy for special education needs (SEN) to drive forward and realise the inclusion agenda in the UK, revealed that there was a failure to recognise the complex and controversial nature of inclusion, that no attempt was made to address the exclusiveness of the curriculum, assessment procedures and practices of mainstream provision, and that the strategy was founded on notions of normalisation (Lloyd, 2008).

It seems that, although policy frameworks promote inclusive education within the framework of ‘education for all’, a different reality is revealed in practice, one of exclusive education (Armstrong, 2003; Booth, 2000; Fulcher, 1989). As Gibson (2006:326) so aptly states,

In so doing, a paradox has been made apparent; policy and research asserting one approach, inclusion through listening to the voices of those once silenced and practice denoting another, exclusion established by modernist practices maintained through a culture of silence

Freire (1985:83) also refers to the notion of the voices of people with disabilities, the ‘other’, remaining silenced. Hayes (2004), Kenny, McNeela, Shevlin and Daly (2000) and Wilson (2004) further purport that the barriers created through modernist knowledge prevent access to the subject world of the ‘other’, but also prevent the realisation of policy objectives and the ideals of

inclusive education. It is evident, therefore, that the aims and objectives of inclusive education, policy and research are entangled with cultural and political processes, and the only way to move forward is to listen to those who have been silenced (Gibson, 2006:315). This is imperative to fully meet the needs of marginalised and vulnerable groups. The barriers to the implementation of inclusive education will be discussed in more detail later in section 3.3.4 of this chapter.

### **3.2.3 National legislation and policy framework**

The changes in global initiatives regarding inclusive education have influenced the drive towards inclusive education in South Africa (Naicker, 2000). Prior to 1994, the South African Education Department was split into eighteen racially divided education departments. Change started for South Africans with disabilities after the first democratic elections in 1994. In October 1995, the South African Federal Council on Disability (SAFCD) called for the development of a single inclusive education system for South Africa so that all learners with special education needs would have a right to equal access to education at all levels in a single inclusive education system that would be responsive to the diverse needs of all learners. This philosophy is generally known as inclusive education. In countries of the south, Miles and Ahuja (2007:133) argue that inclusion is often perceived of as a western concept, although it is increasingly being embraced on the grounds of social justice and human rights, and within the discourse of 'education for all'. Ntombela (2011:6) purports that this new system of education "presents a paradigm shift in how education is understood, organised and run". It is now almost two decades after the publication of the Salamanca Statement and the establishment of a democratic government in South Africa, yet the implementation of inclusive education remains problematic (Wildeman & Nomdo, 2007).

Inclusion in South Africa is driven by a strong legislative framework. The central feature, which distinguishes South Africa from other countries in terms of educational provision, is the extent to which racially entrenched attitudes and discriminatory practices led to extreme disparities in the delivery of education. This preliminary discussion will focus on the two most important Acts, the Constitution and the School's Act. The South African Constitution (Act 108 of 1996, Sections 29 (1) and 9 (2, 3, 4 & 5)) which provides a challenge to all South Africans by requiring that we give all learners the fundamental right to basic education addressing the imbalances of the past by focusing on the key issues of access, equity and redress, with the focus being on restoring the human rights of all marginalised groups. According to the Bill of Rights contained in the Constitution of the Republic of South Africa (Act 108) (SA, 1996), everyone has the right to a basic education, including adult basic education and further education, which the state, through reasonable measures, must progressively make available and accessible. Secondly, the South African Schools Act, No. 84 of 1996 (SA, DoE, 1996b) also promotes the concept of inclusion –

... whereas this country requires a new national system for schools which will redress past injustices in educational provision, provide an education of progressively high quality for all learners and in so doing lay a strong foundation for the development of all our people's talents and capabilities, advance the democratic transformation of society, combat racism and sexism and all other forms of unfair discrimination and intolerance, contribute to the eradication of poverty and the economic well-being of society, protect and advance our diverse cultures and languages, uphold the rights of all learners ....

Another impetus is the UNCRRPD, which was adopted by the United Nations (UN) in 2006, and ratified by South Africa on 30 November 2007. For such a treaty to become legally binding and applicable, countries must both ratify the UNCRRPD as well as incorporate it into their own legal systems. Unfortunately, since ratification in 2007, South Africa has not adequately incorporated the Convention into its own legal framework which has weakened its effect in the country (PMG, 2011). The latest report on the implementation of the UNCRRPD in education (related to article 24) highlights a number of challenges such as the scale being too small and the time frame too extended, the absence of stronger legislative measures and funding norms, negative attitudes, etc. (South Africa, 2010:5–6). At the 2009 AfriNEAD symposium held in South Africa, a recurring theme that emerged from the Education, Training and Work Commission was the need for African governments that have ratified the UNCRRPD to ensure the domestication and implementation of its tenets and framework (AfriNEAD, 2009).

The policy framework put in place by government to drive inclusive education within the higher education sector, consists primarily of three documents, all having been published by the Department of Education (DoE) since 1994. These are, the Education White Paper 3 on the Transformation of the Higher Education System (SA, DoE, 1997b), the National Plan for Higher Education (SA, DoE, 2001b), which is intended to operationalise the imperatives stated in White Paper 3 and Education White Paper 6: Special Needs Education: Building an Inclusive Education and Training System (EWP6) (SA, DoE, 2001b). It is important to bear in mind that the equity goals contained within this policy framework are being implemented into a specific context in order to drive a particular transformational agenda. As argued by Armstrong and Cairnduff (2012:917), both nationally and internationally, the significance of policies and interventions promoting the theme of inclusive education must be understood within their particular social contexts.

Looking more closely at these three key documents, as Howell (2006) explains, firstly, within White Paper 3, the concept of student equity in higher education is explicated and the measures to drive the initiative are outlined. The policy states that one of the goals of the transformation process in South Africa is to build a higher education system that “Promote[s] equity of access and fair chances of success to all who are seeking to realise their potential through higher education, while eradicating all forms of unfair discrimination and advancing redress for past inequalities” (SA, DoE, 1997b:14). Equity, as stated in the policy, includes students with disabilities. The policy goes even further to provide a framework for how the needs of students with disabilities should be responded to by the education system as well as by universities, as individual institutions of higher learning;

laying emphasis on the way in which such institutions are structured and organised. The policy also acknowledges that students with disabilities are included as previously disadvantaged members of the population, and hence form part of transformation imperatives, although this is not evident in practice. White Paper 3 therefore argues that the new policy framework must “increase access for ... disabled students and should generate new curricula and flexible models of learning and teaching” (SA, DoE, 1997b:10). This policy has clearly not been fully implemented, neither by institutions nor by the allocation of sufficient financial support by government (SA, DHET, 2012) and thus there is an urgent need to address this situation.

The main focus of the second document, the National Plan for Higher Education (SA, DoE, 2001b) is the commitment by government to increase access for non-traditional students to higher education. Students with disabilities are included under this term. This plan holds institutions accountable for implementation and also focuses on the connection between equity of access and equity of outcomes. Simple access being insufficient, the plan alludes to successful graduation of students with disabilities as one of the critical outcomes. Although the plan does not clearly place an emphasis on an integrated and holistic approach to teaching and learning support specifically for students with disabilities, it does discuss academic development as an important equalisation mechanism (Howell, 2006).

Inclusive education moved from the conceptualisation phase to becoming more of a reality in South Africa by the National Commission on Special Needs in Education and Training (NCSNET) and the National Committee on Education Support Services (NCESS). Their research led to the Education Ministry releasing the Education White Paper 6 on Special Needs Education: Building an Inclusive Education and Training System (SA, DoE, 2001a). The primary purpose of this document is the creation of educational opportunities for learners who have not been able to access existing educational provision or who have experienced learning difficulties, largely because the education system has failed to “accommodate their learning needs” (SA, DoE, 2001a:6). Students with disabilities are viewed here as being one of the most vulnerable groups, having historically been victims of marginalisation and inequality in South Africa. The focus of this EWP6 is to ensure that the South African system is fully inclusive, attaining this through the creation of equal opportunities and the removal of barriers which limit equitable participation (Howell, 2006). Although the EWP6 provides a blueprint for inclusive education in South Africa as a means to address the challenge of disability across the educational landscape, the focus, however, is very much geared towards schooling. Where there is mention of further and higher education, this is largely only in relation to access. EWP6 also calls for regional collaboration when addressing disability, especially when referring to the more specialised, cost-intensive support that may be needed by some disabled students, but omits to outline how this should be done. In practice, regional collaboration is restrictive in terms of access as it implies that institutions only cater for certain disabilities at the expense of others (FOTIM, 2011; SA, DHET,



2012) and furthermore infringes on the rights of students with disabilities to exercise free choice regarding university selection. This policy also makes reference to the reporting requirements within the National Plan for HE and also states that the Education Ministry will make recommendations to HEIs “regarding minimum levels of provision for learners with special needs” (SA, DoE, 2001a:31).

Despite the broad commitments expressed in the policy and legislation towards addressing the needs of previously disadvantaged students, including students with disabilities, I would argue that existing higher education policy falls short of meeting the needs of this most vulnerable group of students. With only a vague commitment towards addressing this area of concern, little attempt has been made in the process of policy implementation to address the barriers in the education system which continue to exclude students with disabilities from higher education institutions and/or from the process of teaching and learning. Delegates from the 2009 AfriNEAD symposium (AfriNEAD, 2009) also reported that inclusion was far from being achieved in their countries, that there is a glaring gap between theory and practice and that disability issues seem to be treated in an ad hoc way in education, with students receiving limited support (Chataika *et al.*, 2012). Similarly, Howell (2000) argues that to date, initiatives to accommodate diversity and the building of equity have failed to specify mechanisms towards addressing the full spectrum of learning needs among the student population. Leicester (1999:95) also outlines some reasons why post-school education should improve facilities and support for students with special needs:

... they should have the same opportunities for a lifelong education as other citizens and due to various reasons for example, illness and lack of resources, many students with disabilities need and deserve a ‘second chance’ to acquire various skills and qualifications.

The recent Green Paper on Post-School Education and Training (SA, DHET, 2012) was approved by Cabinet in November 2011, and seeks to align the post-school education and training system with South Africa’s overall development agenda, with links to various development strategies such as the New Growth Path, the Industrial Policy Action Plan 2, the Human Resource Development Strategy for South Africa 2010–2030, and South Africa’s Ten-Year Innovation Plan. It highlights the fact that some progress has been made in transforming<sup>5</sup> post-school institutions but that the “system still bears the marks of apartheid” such as “lingering discrimination” and problems with regard to “access, staffing, curriculum, management, student funding, and other forms of student support” (SA, DHET, 2012:x). There is an intention in this document to address ongoing inequalities with regard to disability:

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<sup>5</sup> “Transformation” of universities refers broadly to opening up access to previously disadvantaged students and other minority groups, such as students with disabilities. Although HEIs have created access for students with hearing impairment by accommodating some of their needs, e.g. extra time for assessments, fundamentally little has been done and there is thus room for far more support opportunities, especially in the teaching and learning space.

The system continues to produce and reproduce gender, class, racial and other inequalities of access to educational opportunities and success. Eliminating all forms of discrimination and inequality and developing a general culture of human rights and democracy are among the key priorities of the DHET (SA, DHET, 2012:x).

An additional argument put forth is that the majority of disabled students still continue to experience discrimination with regard to access and that institutional practices have also largely failed to consider the learning needs of disabled students, or their support needs as part of the broader teaching and learning support processes, with commitment varying from institution to institution. A number of recommendations are made:

- that the varied needs of disabled students should be responded to by individual institutions and the system as a whole, which will require the allocation of additional resources;
- that a national policy on disability, which will guide education and training institutions in the post-school domain be developed; and
- as existing data on disability is inadequate and often inaccurate, the DHET intends commissioning a disability prevalence study across the post-school education and training sector so as to facilitate better planning at institutional and national levels (SA, DHET, 2012:54).

Of fundamental importance is the emphasis that the document places on working towards a more holistic and integrated approach that recognises the importance of adapting teaching and learning methodologies where necessary, instead of simply focusing on the built environment and the use of specialised technology and assistance devices geared for the disabled. Furthermore, the DHET commits to working towards developing a National Disability Policy and Strategic Framework (NDPSF) which will see to create an enabling and empowering environment across the system for staff and students with disabilities, with such a policy also serving as a benchmark for good practice. In addition, the NDPSF will attempt to accurately define disability in a manner which takes cognisance of multiple types of disability, from the physical to the cognitive and psychosocial. Furthermore, the DHET, as outlined in the Strategic Plan 2010–2015, will establish a social inclusion, equity and transformation unit that will focus on issues such as HIV and Aids, disability and curriculum (SA, DHET, 2010). These initiatives are truly welcomed.

Beyond the scope of the education sector, other initiatives have been formulated and implemented to drive inclusion within our society such as the Disability Framework for Local Government, which was developed with the aim of supporting and enabling local government to implement the Integrated National Disability Strategy (INDS) and other government policies on disability as an integral part of the local government mandate (SA, DPLG, 2009). The primary objective of this framework is to support and facilitate the mainstreaming of disability issues into all policies, plans,

programmes and activities of local government, thus significantly helping to enhance the quality of life and foster the full participation of men, women, youth, the elderly and children with disabilities in all spheres of life. The Department for Women, Children and People with Disabilities (DWCPD) was also established on 10 May 2009 with a mandate to facilitate the transformation of the state into efficient machinery for the advancement of the rights of these vulnerable groups. Unfortunately, the work of this department is yet to have any real impact for people with disabilities in South Africa.

From the above discussion it becomes clear that inclusive education within the South African context is framed within a human rights approach, the aim of which is to transform the human values of integration into the immediate rights of excluded learners. As expounded in White Paper 6, inclusive education is seen as a single system of freedom and equality, one which is dedicated to ensure that “all individuals are enabled to become competent citizens in a changing and diverse society” (Engelbrecht, 2006:256). In the section that follows, I focus more specifically on inclusive education within the higher education arena.

#### **3.2.4 Inclusion within higher education**

As previously elaborated (see sections 3.2.2 & 3.2.3), inclusive education is both a global (UN, 2006) and a national imperative in South Africa with a strong legislative framework (SA, DoE, 2001a; 2001b; 2002; SA, DHET, 2012) providing guiding principles and parameters for implementation in the educational environment, with a focus, however, mainly on primary and secondary education. This discussion (section 3.2.4) focuses on the inclusion of students with disabilities in general within higher education (or their exclusion). A more specific explanation regarding the inclusion of students with hearing impairment will occur later in this chapter (see section 3.4).

Despite the progressive legislative and policy framework discussed under 3.2.3, and the recommendations made by various reports over the last 18 years, students with disabilities, especially in higher education continue to face a multitude of barriers, including physical, social and attitudinal. Presentations regarding reasonable accommodation and access at the 2009 AfriNEAD conference highlighted infrastructural, institutional and environmental barriers faced by students with disabilities in higher education, which included “inaccessible environments, lack of reasonable accommodation, negative attitudes, discriminatory application and admission procedures and lack of disability policies and resources that unnecessarily disadvantage disabled students” (Kilonzo, 2009; Lyner-Cleophas, Swart & Bell, 2009). Abosi and Koay (2008:4) also mention a number of similar factors that constitute barriers to education for all. These factors include “... negative attitude influenced by traditional values, beliefs and culture; lack of statistics of the number of persons with disabilities; inadequate funding; lack of cooperation among specialist administrators and adopting policies that are difficult to implement”. The recent FOTIM report

(FOTIM, 2011) also highlights numerous barriers experienced by students with disabilities such as lack of support for Deaf and hearing impaired students, lack of assistive technologies and funding, difficulties with application and registration procedures, not being aware of services offered by disability units and many others.

Barriers, however, often begin even before attempting to enter higher education. According to the report of the Council for Higher Education (CHE, 2004:15), “for people with disabilities the first barrier to higher education is the schooling system. High levels of exclusion, particularly black children with disabilities, means it is difficult to quantify the extent of their exclusion.” The report states that the assessment of the quality of students’ teaching and learning experiences needs to include a specific focus on both the experience of students with disabilities at higher education institutions and the training of lecturers to deal with students with disabilities in a supportive manner. The CHE research also revealed that higher education institutions need to develop internal systems to identify students with disabilities and their profiles, to understand their needs and to monitor the extent to which these needs are met at individual institutions. An area that requires intervention is the development of support mechanisms for these students in order to facilitate teaching and learning processes. The research further points out that there is often weak and incomplete awareness at HEIs disability offices (or equivalent) of which government policies directly or indirectly relate to disability. There needs to be a clearer understanding of the ways in which the White Paper 3, the Higher Education Act, the White Paper 6 on disability and the National Plan for Higher Education relate to each other in the specific area of disability. The CHE study also revealed the different ways in which students with disabilities are dealt with at the various recently merged institutions in South Africa. Other barriers mentioned were: insufficient funding, lack of support from senior management, resistance from academics, and reluctance of students with disabilities to ask for assistance and insufficient staff to provide an effective service (CHE, 2004).

The Quality Education for All report of the NCESS and NCSNET (SA, DoE, 1998) stated that the primary challenge to higher education institutions “is to actively seek to admit students with disabilities who have historically been marginalised at this level, providing them with opportunities to receive the education and training required to enter a variety of job markets”. Alongside this is “the challenge to develop the institution’s capacity to address diverse needs and address barriers to learning and development” (SA, DoE, 1998:126). Furthermore, the report recommends that higher education institutions start addressing the needs of all students with a view to improving the quality of both teaching and learning. One of the major obstacles towards achieving these goals is lack of financial resources. In the UK during 1999, funding councils introduced a student-based ‘Disability Premium’ to compensate universities for the additional costs associated with providing for students with disabilities (Goode, 2007:36). Unless a similar system is implemented in South Africa, universities may continue to plead poverty and use this as an excuse for non-delivery.

Other studies examining the experiences of disabled students in higher education revealed that the students were rarely involved in or even consulted about policy and practice (Borland & James, 1999:96; Hall & Tinklin, 1998:84; Hurst, 1993; Riddell *et al.*, 2005a:627). There are, of course, some positive experiences reported by students with disabilities in higher education. In a study by Claiborne, Cornforth, Gibson and Smith (2011:517), students with disabilities discussed the value of flexibility in course design and delivery, and expressed an appreciation for support from lecturers. Students did, however, express confusion and frustration about accessing resources. There were also some complaints by students with disabilities that the needed technology was often not available. Furthermore, Goode (2007) asserts that the under-resourcing of disability personnel as well as a lack of support from senior management hampers progress to inclusion in higher education.

From this review of the literature, it is clear that, despite the progressive legislative framework in South Africa and the noble commitment to right the wrongs of the past, students with disabilities in higher education unfortunately still remain marginalised and insufficiently supported. Those who are fortunate enough to gain access to higher education still face many barriers which impinge not only on their human rights but also on the experience and quality of their education, which has a direct impact on their educational outcomes. Following on from this discussion, the next section focuses on access to and transition into higher education for students with disabilities.

### **3.3 ACCESSIBILITY AND HIGHER EDUCATION**

In the following sections the topics of access and transition into higher education, support services and accommodations for students with disabilities and barriers to inclusion in higher education are explicated.

#### **3.3.1 Access to and transition into higher education**

In 1996, the final adoption of the Constitution of South Africa emphasised the new democratic government's commitment to restoring the human rights of all marginalised groups (including persons with disabilities). Included in the Constitution of the Republic of South Africa Act of 1996 is the Bill of Rights that entrenches the rights of all South Africans, regardless of race, gender, sexual orientation, disability, religion, culture or language, to basic education and access to educational institutions (South Africa, 1996a). The Constitution thus lays the foundation for education for all, providing the motivation for inclusive education in South Africa.

Equal access is one way of addressing the legacy of apartheid and its impact on education in South Africa. In this regard, access can be viewed as a multi-layered issue encompassing the physical, attitudinal and curricular. The meaning of the term 'access', for the purposes of this discussion, refers to the participation of students with disabilities in higher education, namely their admission into university-level education. Since 1994, although the number of students with

disabilities entering higher education has increased (see discussion in section 2.4.5.3) there are still many students who are denied access (Chataika, 2010; Riddell *et al.*, 2005a). A key driver for increasing access was the 1997 Quality Education for All report (SA, DoE, 1998), which challenged HEIs to actively seek to admit learners with disabilities who had historically been marginalised. Another possible reason for the increasing numbers of students with disabilities in higher education (SSA, 2003) could be ascribed to the improvement in the number of children with disabilities entering the schooling system with the opportunity to complete matric (Howell, 2006). On the other hand, the ability of the schooling system to produce learners with disabilities that are able to enter the tertiary sector is questionable (FOTIM, 2011). The potential success of learners to obtain a matric certificate is severely hampered by the lack of appropriate and adequate provision for learners with disabilities.

There are many reasons why students with disabilities should be granted access to higher education. Education is often viewed as a gateway to a better future, with evidence indicating that university graduates earn significantly higher salaries than their non-graduate counterparts (Bloom, Canning & Chan, 2006; Chataika, 2010; Schroedel & Geyer, 2001). Additionally, Bloom *et al.* (2006) assert that both public and private benefits are accrued, with private benefits including improved employment opportunities (Schroedel & Geyer, 2001; Welsh & Walter, 1988), increased salaries and the capacity to save and invest earnings (Bloom *et al.*, 2006). Other benefits such as an improved quality of life can also be considered (Bloom *et al.*, 2006). Hurst (1996:141) maintains,

When disabled people enter higher education they are taking up an opportunity to increase their knowledge, to develop their social skills, to obtain good qualifications and to expose themselves to debate and discussion. It is an important experience for empowerment.

Even though the educational sector is well positioned to support increased participation by students with disabilities in higher education (Barnes, 2007), many barriers still exist. Matshediso (2007b:713) argues that there are four main reasons for restriction to access at the tertiary level:

- (i) the person with a disability must be qualified to enter an institution of higher education;
- (ii) he or she will receive assistance in as far as his or her impairment restricts the academic requirements of a particular academic course of activity;
- (iii) students' claims to assistance should be made within reasonable limits taking into account the availability of funding; and
- (iv) disability rights have to be upheld at institutional level and this requires active advocacy on campus and training of faculty.

Barriers to access and participation in higher education may include:

- (a) physical barriers, e.g. inaccessible buildings;
- (b) information barriers such as lack of knowledge regarding access issues or disabled learners in secondary education not always being appropriately advised or given the option to choose subjects that would facilitate their access into higher education (Howell, 2006);
- (c) entrance to higher education;
- (d) assumptions of 'normality'; and
- (e) levels of awareness (Borland & James, 1999; Holloway, 2001).

In South Africa, in particular, Howell (2005:7–10) adds that the main barriers to access include:

- the legacy of exclusion of disabled people at all levels of education;
- the lack of reliable data on disabled students;
- the negative attitudes and stereotypes that reinforce the marginal position of disabled people; and
- management's failure to formulate and implement policy for disability support services at most higher education institutions.

These challenges, she argues, are exacerbated by a lack of funding in trying to implement policies and resistance by faculty (lecturers) to use alternative methods of teaching disabled students. Matshediso (2007a) also argues that there is a lack of political commitment from relevant government officials to expedite the process of widening access to higher education for disabled students. Other barriers mentioned in the abundance of literature on the topic include:

- the ways in which institutions of higher learning are structured and function;
- students being denied access to certain courses because they are believed to be "unable – due to impairment to meet the course requirements" (Howell, 2006:166); and
- learners from secondary schools are not being adequately prepared (Brelje, 1999; Smith-Davis, 2004; Starikova, 2004).

Often the criteria for ineligibility are even seen to arise from the learner's own circumstances, such as the existence of an impairment (Fulcher, 1989) such as a hearing impairment, rather than from institutional practices. Barton and Oliver (1992) argue that the location of the problem lying with the learners rather than with the institution, and the associated medical emphasis, serve to depoliticise this area and remove it from public debate and accountability, severely hampering efforts to effect any real change.

Once a student has succeeded with the application and selection process and is granted access to higher education, the next challenging phase is the adaptation to the new, unfamiliar and often 'hostile' 'hearing' university environment. The transition from high school to a university is more often than not a challenging one, particularly for students with disabilities (Durlak, Rose & Bursuck, 1994:57). This period has been identified as a time of potential vulnerability, with the majority of students with disabilities maintaining that they do not get all the help they need and that they should be given some form of preparation before starting higher education (Crous, 2004:246). Issues important in transition were related to both the development of social networks and engagement with learning and included:

- (i) the importance of previous learning contexts and their influence on expectations;
- (ii) expectations versus the realities of life in higher education;
- (iii) the ethos and welcome experienced;
- (iv) the existence of support and the speed of putting this in place; and
- (iv) other aspects of their identity" (Jacklin, Robinson, O'Meara & Harris, 2006:6).

Furthermore, a review of 'grey' (not published in accredited journals e.g. technical reports) research by the National Disability Team and Skill (2004) added the following two factors which are seen to affect transition to higher education for disabled learners detrimentally, namely the opportunity to acquire additional skills needed for successful entry and the unavailability of continuous provision (such as organisational procedures and support arrangements) (National Disability Team and Skill: the National Bureau for Students with Disabilities, 2004).

Given that both transition planning and access to the general education arena are receiving increased attention to improve the current situation (Brinckerhoff, McGuire & Shaw, 2002:24; Starikova, 2004; Tonooka, 2002), it can be anticipated that there will be continued growth in the numbers of students with disabilities attending higher education institutions (Shaw, 2006:390). In a case study by Shevlin, Kenny and McNeela (2004:29) of two Irish universities, the authors argued that enhanced access for students with disabilities needs to be both "integrated and differentiated", so that "common requirements are recognised and addressed as such, and specific requirements are also appropriately registered and addressed".

I would argue, in agreement with Matshediso (2007b:706–707), that "without positive changes in [the] governmental commitment, institutional transformation, classroom diversity needs, and attitudinal structures regarding disability, access for disabled students is unattainable". Although the doors to higher education have opened for some students, policies and procedures have not been implemented fully, which prevents reasonable access for all. Higher education institutions



need to implement practical interventions such as increased funding and human resources, and training programmes for academics and administrative staff (to mention a few) to effect real change in redressing the current situation. Furthermore, disability-related policies should be quality assured, their implementation monitored and institutions held accountable for non-progress. Hopefully the eagerly anticipated NDPSF for higher education will lead not only to improved access, but also to improved transition and successful academic outcomes for students with disabilities.

### **3.3.2 Support services and accommodations for students with disabilities**

The shift or transition to higher education is a complicated process for students with disabilities with support services playing a major role. Their participation at universities is also increasing, with more students with disabilities being enrolled in higher education today than ever before. This increase in numbers is further compounded by the diversity and complexity of disabilities needing to be accommodated (Henderson, 1999). Historically, support services within higher education generally evolve out of crisis situations: either a student with a disability just appears or a prospective student makes an enquiry regarding specific support provision. These services are, unfortunately, most often reactive rather than proactive. Although universities claim to adhere to and promote the social model of disability, both the placement of disability support services within the realm of student welfare and the actual experiences of staff and students with disabilities contradict this and these services seem more aligned to the medical rather than the social model of disability (Borland & James, 1999:88; Howell, 2005:25). When support is conceived of in individual terms rather than broad, systemic change, it can only have a limited impact on practice and provision (Shevlin *et al.*, 2004:29).

Gardner, Barr and Lachs (2001) assert that, at university level, the responsibility to request support services lies with the student. When the student identifies as being a person with a disability and then presents documentation of the disability, his or her needs, and ideally, the recommended accommodation(s), it then is the university's responsibility to provide those accommodations that will give the student access to the programme. The responsibility of the student to request support assumes that the student is aware of his or her rights and the various accommodations available to him or her. Evidence, however, suggests that this is not the case. Cawthon (2008/2009:457) maintains that first-year students may not know which accommodations are available to them at university, or whether they can obtain accommodations like those they may have enjoyed in high school. Furthermore, it is stressed that students may find that they have a greater need for services such as captioning or note-taking when in a large undergraduate lecture hall than when they were in a high school classroom. Students who are deaf or hard of hearing may be most interested in resources such as note-taking and assistive listening devices and/or they may not be aware of other possible accommodations such as live text-captioning technologies such as C-Print

or CART (see 2.4.8.1 to 2.4.8.3) as those are rarely used in school settings. The argument regarding lack of awareness of available accommodations is supported by the findings from various studies (Borg *et al.*, 2008; Nightingale, 2007; Russell & Demko, 2006). Conversely, Albertini's (2012) research findings show that students perceived their use of support strategies as a clear strength, expressing confidence that they knew how to access and use support services such as tutors and student peers. The study at Warwick University (Borg *et al.*, 2008) recommended that information regarding student support services should be more widely publicised to all members of the university to raise general awareness at all levels. Research by Russell and Demko (2006:5) in the Canadian province of Alberta highlighted limited awareness (by students with hearing impairment) of legal issues affecting their right to accommodations as well as communication technologies available to them. Furthermore, evidence suggests that most students who do disclose their disability during enrolment do not make use of disability services (Brett, 2010:4). One of the major implications of this phenomenon is that university staff members are therefore unaware of the large number of students with hearing impairments (and other disabilities) on their campuses (Schroedel, Kelley & Conway, 2002:105), resulting in a low level of awareness of such students' needs in relation to the actual provision of support and assessment accommodations (Shevlin *et al.*, 2004:15).

### **3.3.2.1 Types of support services for students with hearing impairments**

Support services available to students with hearing impairments vary on a number of levels, such as various types of support services available and the quality of delivery. The services that address the communication needs of students with hearing impairments, as maintained by (Getzel, McManus & Briel, 2004:6; Greene, 1994:22), may be an important predictor of these students' success at enrolling in and completing a degree.

In attempting to theorise teaching and learning support in higher education, Simpson (1996) as cited in Myers & Taylor (2000:15) argues that an important distinction exists between 'learner or outside services' and those services orientated towards what he calls 'learning development or inside services'. 'Learner services' or 'outside services' refers to services such as counselling, healthcare, accommodation and career guidance, whereas 'learning development' refers to support in accessing the curriculum, which is delivered at course and programme level (tutorial support, assessment support or professional development) (Simpson, 1996:25). Simpson then suggests that, while both are important for effective learning, there needs to be a clear institutional distinction between learner services and learning development. Boutin (2008) purports that, in order to improve persistence, counselling helps students with disabilities to have an understanding and awareness of the issues they are facing, which reduces their anxiety. This section (3.3.2.1) focuses on the learning development or inside services that are necessary for students with hearing impairments to succeed in higher education.

The summary below of various quantitative studies regarding support provisioning clearly reveals that students with disabilities find assistance essential, with note-taking and personal tutors ranked as two of the more important services for students with hearing impairment in higher education.

**Table 3.1: Research findings of the support provided to students with hearing impairment in higher education**

Author(s)	Details	Main findings (related to support provisioning)
Cremer, 1991	Survey of 125 students in higher education in Germany	99,2 per cent – assistance through support services was a necessity  69,5 per cent – identified note-takers as important to their success  59,0 per cent – tutor services important  34,3 per cent – interpreters (low due to oral tradition in Germany)
National Center for Educational Statistics, 1994	Survey of a sample of 2- and 4-year programmes for the period 1989/1990 to 1992/1993; universities were respondents	75 per cent – provided note-takers  67 per cent – provided Sign Language interpreters and 65 per cent – stated that tutors assisted students with ongoing coursework
Greene, 1994	Survey of students in post-secondary education in USA	80 per cent – made use of at least one special service at the university  75 per cent – used note-takers  65 per cent – made use of tutors  33 per cent – used assistive listening devices  Few students mentioned testing accommodations, preferential seating, recording of class lectures, assistance with registration, discussions with faculty (lecturers) or other types of counselling.
Lancaster, Mellard & Hoffman, 2001	Community and technical colleges in three states in USA	10 to 15 per cent of students reported using extended time, a quiet testing location or a note-taker
Cawthon, 2008/2009	Study conducted at universities and colleges in Texas, USA	44 per cent – provision of note-taking  31 per cent – provision of assistive listening devices  27 per cent – extended time for test taking

Some of the various types of accommodations available to students with hearing impairment are now discussed in more detail, from the most to least common. For those with mild to moderate

forms of hearing impairment, participation has traditionally been facilitated through enabling preferential seating or hearing augmentation devices (such as audio loops in learning environments) (McLean, Osborne, McAuliffe, Houseden & Revens, 1999). For students with more significant levels of hearing impairment, note-takers are the most frequent form of support (Brett, 2010:6). There are two forms of note-taking: manual and electronic. Only manual note-taking will be referred to here as speech-to-text reporting, such as C-Print, CART and Polygraph, was previously discussed in Chapter 2 and is not yet used in South Africa.

### **3.3.2.2 Manual note-taking (using 'human' note-takers)**

For students whose comprehension of spoken information in academic environments is sub-optimal, with or without hearing augmentation devices, note-takers have been identified as an appropriate form of support (O'Connor, Watson, Power & Hartley, 1998; McLean *et al.*, 1999). With the assistance of a note-taker, students can focus their attention on the lecturer and, like other students, review the content of the class at a later stage. Some students use trained note-takers; other students ask to share the notes of hearing classmates, either using carbon paper or making photocopies after class. Making duplicate copies of notes allows one note-taker to serve more than one student in a given course (Elliot, Stinson, McKee, Everhart & Francis, 2001:287). The main purpose of note-takers is to document the main concepts communicated in a lecture in note format; not to provide a verbatim record of instruction (Al Mahmood, McLean, Powell & Ryan, 1998). One of the key benefits of this form of support, according to Hurwitz and Kersting (1993) is that the note-taker can also serve as a tutor to students with hearing impairments. Despite the numerous benefits of note-taking, as Brett (2010:6) also states, it is less effective for students whose speech comprehension is low as gaps arise between the information provided by the speaker and what is documented in the form of notes.

### **3.3.2.3 Academic tutors**

Usually, office staff from disability support services will assist a student with a hearing impairment in finding a suitable tutor. Lecturers may sometimes recommend outstanding senior students who are willing to serve as tutors. They are either paid per hour or per course and the cost may be incurred by either the faculty or the disability support services. These tutors provide individual academic support to students with hearing impairments.

### **3.3.2.4 Instructional and curricula adaptations**

Instructional adaptations are the most common type of learning environment modification. The lecturer may alter any part of the teaching and/or learning process such as teaching methods and strategies, learning activities and instructional materials, performance requirements for students, assessment, etcetera (Lewis & Doorlag, 1999:41). Konur (2006:356) asserts that there are two three of adjustments: 'presentation', 'response' and 'timing'. Presentation adjustments refers to

the format of the curriculum presented to the student, response adjustments is concerned with the format of the response made by the student and thirdly, timing adjustments are related to the examination and course work adjustments. These adaptations are meant to improve the accessibility to teaching and learning for students with hearing impairments. One of the ways to accommodate a hearing impaired student is to make sure he or she knows what is going on at all times in the learning environment by making use a microphone (Szczelkiewicz, 2002:7).

To date, the lack of curriculum flexibility in higher education (McLean, Heagney & Gardner, 2003:226) and the barriers to curriculum access which have arisen through the way in which learning support services for students with disabilities have been conceptualised (Howell, 2006:168), remain key challenges to equal participation. Curricula adaptation, one way of addressing this issue, refers to modifications that relate specifically to instruction or content of a curriculum. These could be adjustments or modifications to:

- (i) teaching and learning environment;
- (ii) teaching and learning techniques;
- (iii) teaching and learning support material that enhances a learner's performance or allows at least partial participation in a learning activity;
- (iv) learning programmes; and
- (v) assessment (SA, DoE, 2005).

### **3.3.2.5 Language modification**

This form of accommodation is not implemented very often and is mostly used for students who use Sign Language as their first language. Where a student's acquisition of language has been severely impaired, it may be necessary to modify the language of his or her assessments and, in some cases, assignment briefs. The aim of language modification is to make the English as clear as possible and to ensure that no time is spent decoding what is often a student's second language. When modifying text, only the non-technical carrier language is changed but, very importantly, the meaning and intent of the question should not be altered. This is ensured by asking the author or tutor to check the modifications thoroughly and, should any suggested modification be unacceptable, agreeing a mutually agreeable alternative with the deaf service team. Language modification is always carried out with a particular student's access to English in mind; therefore, the same paper may be modified differently for different students. Generally, language modification involves:

- shortening of long sentences;
- replacing high-level carrier language with lower-level alternatives;
- replacing passive verbs with active verbs;
- removing superfluous language;

- removing ambiguity and re-formatting, e.g. using bullets and spacing (SHU, n.d.).

### **3.3.2.6 Other general accommodations**

Other common strategies to enhance accessibility include management adaptations, which are changes in the behaviour management system, such as enforcing discipline to control noise levels (Lewis & Doorlag, 1999:41), as well as environmental adaptations which are changes in the physical environment, such as changing the location of learning materials in order to make learning activities accessible to a student with a hearing impairment (Lewis & Doorlag, 1999:41). Furthermore, students with hearing impairments are often allowed extended time for assessments, preferential seating in teaching venues and/or they make use of hearing augmentation devices (as discussed in Chapter 2), such as induction loop systems and FM systems.

As discussed above, there are a number of support services and strategies available to students with hearing impairments. According to a study by Shaw, Madaus and Banerjee (2009:187), it is best for students to learn to arrange their own accommodations to the greatest extent possible, to help monitor the effectiveness of any accommodations that have been used, to identify their technology needs and to use assistive technologies that will enable them to become independent learners. These factors form part of a student being able to self-advocate, an important characteristic that will be further discussed later in this chapter.

Furthermore, Riddell (1998:217) cautions against the “technological fix”, in other words, the assumption that the barriers faced by individual students are able to be remedied by a particular piece of equipment. Whilst supporting Riddell’s argument, I maintain that the use of assistive technologies is still a critical component of communication and information access for students with hearing impairments, but the use of these technologies, in the absence of other changes such as social context, pedagogical and attitudinal, is meaningless.

### **3.3.3 Support services within the South African context**

Disability support services for students with disabilities vary from university to university, with some institutions not yet having established ‘disability units’ and others providing a comprehensive array of services with a large staff complement (FOTIM, 2011; Howell, 2006). Crous (2004:247) maintains that all institutions should have a unit or centre providing for the support needs of students with disabilities. He furthermore advises that it could be part of student services or it could function independently. The former situation is the reality in South Africa (FOTIM, 2011; Lawton-Misra, 2005). I would argue that the unit being aligned with student services would support the medical model of conceptualising disability, and maintain that all learning support units should be independent with access to dedicated financial and human resources.

Disability support is generally provided within the diversity rights framework (general anti-discrimination legislation and policy) in South Africa with the underlying normative standards of “human rights, respect for diversity, equal opportunity and fair advantage” (Matshedisho, 2007a:685) for persons who qualify to enter higher education programmes, although, within the transformation agenda, students with disabilities are often excluded. Despite the anti-discrimination legislation and policy framework, Matshedisho (2007a) argues that there is no enforceable rights framework for disability support in higher education, which has resulted in support services being viewed as an “optional and benevolent gesture” (Matshedisho, 2007a:685), with the initial establishment of disability units dependent on the availability of funding and convenience with which support can be provided. Furthermore, the recent Green Paper on Post-Secondary Education and Training (SA, DHET, 2012), reported that students with disabilities are still excluded from higher education and that many universities do not regard disability support services as part of their “core role”, resulting in “discrimination remain[ing] part of the experience of students after they have been accepted by universities, and this inhibits their academic progress” (SA, DHET, 2012:11). It is critical that this reality for students with disabilities must change.

Using the distinction which was previously discussed of “learner services” versus “learning development” (Simpson, 1996:25), support services for students with disabilities in South Africa are more closely aligned to learner services such as tutors and counselling services. This assertion is endorsed by Howell (2006:168) and the Council on Higher Education (CHE, 2001) who similarly argue that most support services, where they do exist, tend to operate separately from or have limited collaboration with broader teaching and learning support initiatives. Other authors, such as Cummings, Dyson and Millward (2003), have also alluded to this, specifically referring to schools who argue that the focus of inclusion has been on organisational characteristics instead of on important issues such as pedagogy, curriculum and educational outcomes.

There is a lack of research on support services for students with disabilities in South Africa (Swart & Greyling, 2011), with only two main studies having been conducted on the types of provisions available, which will be reported on here. Firstly, the 2007 study by Matshedisho (2007a:688) reported that 83 per cent of universities offered support services for disabled students, whereas 17 per cent said they did not or that learning support services were limited to blind and physically disabled students, with little provision being made for deaf students, especially with regard to access to communication and information (Howell, 2006). Some findings from the more recent Foundation of Tertiary Institutes in the Northern Metropole (FOTIM) study (FOTIM, 2011:92–93) revealed that:

- support services vary considerably from university to university, with the more established disability units offering a wider range of services from policy development to the provision of specialist services such as subject tutoring;

- disability units serve as “diversity champions” (FOTIM, 2011:92) yet still face resistance from management; and
- response to students with disabilities is largely reactive, with the response depending on the year, the number of students, type of disability etcetera.

Dedicated support services for students with disabilities or so-called ‘disability units’ at South African universities face a number of challenges. The most important of these being (FOTIM, 2011) –

- lack of funding;
- too few dedicated staff members;
- ‘having no voice’ or little power within the institution;
- absence of national policies to guide service delivery; and
- disability coordinators being excessively burdened because of centralised functioning rather than dispersed and integrated inclusionary practices.

South Africa, as a developing country, is still new in its pursuit of inclusion and education for all and we can therefore learn from universities in more developed countries who have been supporting students with hearing impairments for many years as well as national initiatives, and propose three such examples.

One of the first universities to offer comprehensive support to students with hearing impairments is the Sheffield Hallam University in the United Kingdom, which attracts a high proportion of students with hearing impairments and which is viewed as a centre of good practice by universities of similar status. Smith (1997:333) and Olohan (1995) provide detailed information regarding the processes followed at this university as well as technical, financial and human resources available at the university to students with hearing impairment.

Secondly, there is an excellent initiative in the USA called the Postsecondary Education Programs Network (PEPNet, 2012), which is a national collaboration of four regional technical assistance centres (TACs) that provide technical assistance services to postsecondary education institutions to make their programmes accessible to students who are deaf or hard of hearing (Gardner *et al.*, 2001).

Thirdly, universities in New Zealand have also turned to creating codes of practice to support the extension of rights for students who identify as having a disability or impairment (ACHIEVE, 2004). A new national code of practice (Kia Ōrite) (ACHIEVE, 2004) for inclusion in post-compulsory (tertiary) education that aims to improve the educational experiences of students with disabilities was developed and implemented.



Disability units within higher education institutions in South Africa are encouraged to develop a centre of best practice for supporting the needs of students with hearing impairments. There is also a need for technical assistance (either from within or outside the organisation) to support the complex technological support needs of students with hearing impairments. National government is furthermore encouraged to fast-track the development and implementation of the NDPSF, including a national code of good practice, against which universities will be measured and their services quality assured. I would concur with the argument put forward by Porter, Camerlengo, DePuyne and Sommer (1999:5), namely that even given a legal realm of obligation regarding the adherence to laws, this legal obligation does not have the same focus as the educational realm of commitment regarding student development. Universities should not do only what is legally required, but should do everything in their power to ensure that students with hearing impairments are granted full opportunity to participate in all spheres of academic and student life, leading to a successful outcome. Disability support services need to take the view that their ultimate goal is to empower students and, with specific reference to students with hearing impairment, such students should be capacitated to take control over their lives, both in the short term such as in the classroom, as well as for the rest of their lives (Saur, 1992).

### **3.3.4 Barriers to inclusion in higher education**

Previous research suggests that students with disabilities face significantly more barriers during their educational journey when compared with non-disabled students. This is especially true when transitioning to higher education (Eaton & Coull, 1999). Students with disabilities are also more focused on support provisioning, learning how to access and manage such – often to the detriment of their academic work and leading to high levels of stress. Many students with disabilities, in addition to a lack of support, face negative attitudes from both staff and students on campus. Before presenting two important barriers which have yet to be successfully addressed, namely the role of educators, their attitudes and beliefs, as well as their need for professional development, I will first discuss the barriers faced by students with disabilities within the South African context. A more focused discussion on the barriers related to hearing impairment will be presented later in this chapter (see section 3.4.4).

#### **3.3.4.1 Barriers faced by students with disabilities within the local context**

The promotion and implementation of inclusive education in South Africa are in line with international trends, with one of the main drivers being to reverse the injustices of the past (see section 3.2.3). Inclusive education has been promoted as an educational strategy that can contribute towards building a democratic society and a philosophy which embraces the democratic values of equality and human rights, as well as the recognition of diversity (Engelbrecht, 2006).

Since 1994, there have been major advances in the implementation of inclusive education, especially in the primary and secondary schooling environment in the country. Hay and Beyers (2000:6), however, caution, “the ideological thrust of inclusion in South Africa should not be so strong as to ignore the practical realities of a developing country e.g. the teacher/learner ratio, scarcity of education support services, limited physical resources and limited trained teachers”. These realities translate into educational challenges, especially for students with disabilities. Some of the more common barriers experienced by universities and students with disabilities, as revealed through various local research studies, include:

- lack of availability of financial resources for implementation of inclusive education (FOTIM, 2011; Wildeman & Nomdo, 2007; Sukhraj, 2006);
- no single definition of ‘disability’ existing within tertiary sector, continued prominence of the medical model discourse of disability, a fragmented and reactive approach to disability support, disability issues remaining separate from other diversity and transformation initiatives, and the need for academic staff to receive disability-related training (FOTIM, 2011);
- teachers not being specialists such as on teaching learners with hearing impairments, stereotyped attitudes and practices caused by religion, custom, cultural beliefs and social conditions (Sukhraj, 2006:5);
- inaccessible environments, a lack of reasonable accommodation, negative attitudes, discriminatory application and admission procedures, lack of disability policies and resources that unnecessarily disadvantage disabled students (Chataika, 2009; Kilonzo, 2009; Lyner-Cleophas *et al.*, 2009).

Findings from a study by Howell and Lazarus (2003:72), suggest that negative experiences related to students’ impairment (e.g. hearing) tended to result from the absence of or delay in receiving support. Additionally, some of the challenges of inclusive education and training for distance learning, as stated by Moodley (2002:4), include the difficulty of creating an inclusive ethos and producing inclusive policies, negative attitudes and stereotypes, inflexible curricula, inaccessible learning materials, socio-economic barriers and poverty. There are also more subversive forms of barriers, especially in higher education, where, as proffered by Causton-Theoharis, Theoharis and Ashby (2008:30), a form of resistance comes from those educators who adorn themselves with the epithet “I’m already inclusive”, without having much insight into what such a statement really denotes. This epistemological and conceptual confusion, as argued by Slee (2004), often occurs implicitly and is therefore very difficult to alter.

In taking the inclusive education agenda forward in South Africa, critics argue that policies and processes need to be evaluated, coordinated, implemented and effectively monitored for real transformation and change to occur. Sukhraj (2006:2) asserts that, in the absence of the

abovementioned, learners who are impaired (such as visual or hearing impairment) would still be exposed to a different and inferior education from their 'normal' counterparts and that there is still long way to go before inclusive education in South Africa will bear positive results in practice.

### **3.3.4.2 Teachers (school), lecturers (university) and inclusion**

In this discussion (as well as sections 3.3.4.2.1 and 3.3.4.2.2), I will draw on research findings regarding inclusive education in schools. The reason for this is that all university students have been through the school system and the entire education system is meant to be one integrated seamless system. Certain patterns therefore run across from school to university, e.g. attitudes. There is also far more research on inclusion at school level when compared with higher education. I will specify when I am referring to schools (teachers) and when I am referring to higher education (lecturers). The term 'educator' will be used to refer to both teachers and lecturers.

Attitudes to disability are the major barrier to disabled people's full participation ... From pity, awkwardness and fear, to low expectations about what disabled people can contribute, stereotypical and negative attitudes hold people back (Massie, 2006:3).

As expressed by Massie (2006), people with disabilities regularly identify societal attitudes as one of their greatest obstacles to an enriching and fulfilling life. The attitudes and beliefs of lecturers and other university staff translate into practice, and where negative attitudes exist, the barriers are so much more evident and insurmountable. Scott (1994) maintains that lecturers have an academic responsibility and a moral obligation to provide students with an inclusive education that will enable them to deal with the contingencies of living in a diverse world and, according to Brinckerhoff *et al.* (2002), unless this happens, the low levels of persistence will continue and students with disabilities will not attain their educational objectives necessary for employment and adult success. The responsibility of lecturers should not merely be to acknowledge that accommodations should be allowed and made, but also that they need to embrace broader ownership of disability issues, especially in terms of teaching practices and curricula transformation. As highlighted by Fuller, Healey, Bradley and Hall (2004:315–316), the actions and attitudes of university staff are paramount when dealing with issues of inclusion.

#### **3.3.4.2.1 Educators' (teachers and lecturers) attitudes towards students with disabilities**

'Attitudinal barriers' is recognised widely as an impediment to the success of persons with disabilities. However, this also happens to be the least researched variable in studies done with lecturers and students with disabilities in higher education (Rao, 2004). Prior to presenting evidence from literature related to the term 'attitude', it is important to define it. Although social psychology describes the concept in various ways, for this study, the broad definition of Gall, Borg and Gall (1996:273), namely "an attitude is an individual's viewpoint or disposition towards a particular 'object' (a person, a thing, an idea, etc.)" will be used. Furthermore, attitudes are generally considered to have three components: cognitive (thinking), affective (feeling) and

behavioural (acting) (Eagly & Chaiken, 1993; Triandis, 1971). The cognitive component consists of the individual's beliefs or knowledge about the attitude object such as an educator's beliefs or knowledge concerning whether students with disabilities should be granted access to higher education, with lecturers (and other staff) thinking that university is 'not for the likes of you, dear' (Hoong-Sin & Fong, 2009). Feelings about the attitude object (student with a disability) refer to the affective component such as worrying about how they would cope with having a student with a disability in their classes or how the rest of the class would react. The third aspect, the behavioural component, reflects their predisposition to act (behave) towards the attitude object in a particular way, for example, refusing to give student with disabilities any additional support such as lecture notes in advance. These components are interrelated and suggest that, if the cognitive aspect can be altered, it would lead to change in the affective domain and ultimately result in a change in behaviour.

Jordon, Schwartz and McGhie-Richmond (2009:535) provide evidence from the school sector to suggest that teachers' beliefs about disability and about their responsibilities for their learners with disabilities may be part of a broader set of attitudes and beliefs known as 'epistemological beliefs' and that "these beliefs influence how they teach and how effective they are in reaching their students with and without special education needs". Swart and Pettipher (2011:20) add that "attitudes about diversity and change can be both a barrier to as well as a strong positive force in implementing inclusive education" and "if repressed and unquestioned, negative attitudes can be corrosive to efforts to implement inclusive education as well as counterproductive". They further argue that change is not dependent on an altered attitude, but rather that changes in behaviour are often followed by changes in attitude (Swart & Pettipher, 2005).

Several authors regard the attitude of teachers towards inclusive education as a significant factor or even as the most important factor in the implementation of successful inclusive education (Meijer, 2003; Norwich, 1994; Wishart & Manning, 1996) and that teachers' attitudes towards students with disabilities have a significant impact on the students' educational experience (Genesi, 2007; Kenny *et al.*, 2000). Literature further indicates that attitudes of university lecturers (faculty) and administrators towards students with disabilities are influenced by both institutional and individual characteristics (Anderson, 1993). Negative attitudes of faculty can therefore be deduced to be a significant barrier, with few having made the paradigm shift to inclusion (Hay, Smit & Paulsen, 2001; Hurwitz & Kersting, 1993). Educators at all levels of the educational pyramid are seen as key persons to implement inclusive education, and positive attitudes are therefore argued as playing a considerable role in its successful implementation. A literature review of twenty-six studies revealed that the majority of school teachers hold neutral or negative attitudes towards the inclusion of pupils with special needs in regular primary education. No studies reported clear positive results (De Boer, Pijl & Minnaert, 2011).

A comparison of three South African studies, conducted in Gauteng and the Western Cape to determine teacher attitudes (in schools) towards inclusion, as reported by (Swart, Pettipher, Engelbrecht, Eloff, Oswald, Ackerman & Prozesky, 2000) indicated –

- teachers have inadequate knowledge, skills and training in order to implement inclusive education effectively;
- there is lack of educational and teacher support; and
- there are inadequate provisions of facilities, infrastructure and assistive devices.

In South Africa, Wildeman and Nomdo (2007) found little evidence of active and well-directed advocacy and information campaigns to change the hearts and minds of the relevant school teaching staff. This situation is not dissimilar in higher education. A descriptive study conducted by Nursoo (2006) focused on identifying attitudes of university staff (lecturers and administrators) towards the inclusion of students with disabilities at the Mafikeng Campus of North-West University proved their hypothesis true, namely that the existence of negative attitudes amongst staff would inhibit the inclusion of students with disabilities at university. The literature reviewed for the current study also identified the following factors as barriers to the inclusion of students with disabilities at the university: inadequate understanding of disability, negative attitudes, stereotyping, inadequate support services and insufficient knowledge and experience of dealing with and teaching students with disabilities.

Other studies related to the attitudes of lecturers in higher education show the following:

- female staff members had a more positive attitude than their male counterparts, staff members with more years of experience and those from the Education faculty had a more positive attitude, lecturers who reported a better knowledge of the legislation had a more positive attitude (Rao, 2004);
- there is a positive connection between lecturer awareness and accommodation, their familiarity and experience with students with disabilities, and their knowledge about disability laws and rights (Bowman & Marzouk, 1990); and
- research regarding lecturer attitudes confirms their perceived confusion relative to disability issues (Hill, 1996; West, Kregel, Getzel, Zhu, Ipsen & Martin, 1993).

It is therefore suggested that lecturers at universities need to be better informed about disabilities and students with disabilities to improve or alter their attitudes, as those with positive attitudes are more readily able and prepared to accommodate the needs of students with disabilities (Barnes, 1994; Shevlin *et al.*, 2004). Lecturers are also, however, in need of support – both from staff within the disability unit and university management.

Students with disabilities deserve to have educators (teachers and lecturers) who are knowledgeable and who understand and support their needs. Successful outcomes for all students are unlikely to be achieved unless the behaviours of educators are altered. As put forward by Ainscow and Sandill (2010:412) when referring to teachers, “the starting point must be with staff members: in effect, enlarging their capacity to imagine what might be achieved, and increasing their sense of accountability for bringing this about”. As long as negative attitudes persist, the full rightful acceptance of people with disabilities is unlikely (Antonak & Livneh, 2000). One of the most important ways of bringing about this change in the school environment is through educational efforts such as pre-service teacher training and in higher education through professional staff development and training programmes.

#### **3.3.4.2.2 Pre-service training and continuing professional development**

Students with disabilities, at all levels of the education system, continue to be discriminated against. Konur (2000) argues that this discrimination by the higher education system, in particular, occurs at every stage including recruitment, admission, service-provision, placement and graduation. The same situation is perpetuated in the education system in South Africa, often resulting in learners and students with disabilities having to go to extreme lengths and having to display skills beyond those of their non-disabled peers simply to access the same opportunities and achieve the same entitlements as their non-disabled counterparts (Soorenian, 2006). The most pressing issue that needs to be overcome in order to implement inclusive education successfully in schools is for teachers to be empowered to be able to identify and effectively support learners who experience barriers to learning (Prinsloo, 2001).

One of the ways to achieve this (in schools), and potentially transform attitudes in the process, is through pre-service teacher training as well as professional development and training programmes (Swart & Pettipher, 2011). Ainscow (1999), however, maintains that workshop attendance is insufficient to effect real change and that, if teacher development is to impact significantly on thinking and practice, it needs to be linked to school development and therefore should be school-based and context-focused. This argument is strengthened by a study undertaken by Berry (2011) where the findings revealed that teacher training interventions should not only be provided through formal teacher preparation programmes but that there is also a need for on-the-job training so that teachers not only have general knowledge concerning disabilities but are also informed concerning local policies and practice. A study of pre-service teachers with disabilities, when reflecting on their educational experiences (both with students with a disability and as teachers in training), revealed that lecturers involved with teacher education need to model the strategies and practices that they teach (‘walk the talk’) otherwise they may be doing more harm than good (King, Aguinaga, O'Brien, Young & Zgonc, 2010). Research has also clearly shown that not including teachers in decisions about how practices will be reformed to be more inclusive leads to feelings of

imposition and resentment on their part, and therefore negative attitudes towards professional development designed to inform these changes (Carrington & Robinson, 2006; Edwards & Nicoll, 2006; Forlin, 2006; Ghore & York-Barr, 2007; Howard & Ford, 2007; Slee, 2006; Timmons, 2006).

A clear need for staff development and increased awareness amongst staff and students in higher education is also evident. Yocom and Coll (1995) report that university lecturers lack knowledge and consistency in supporting students with disabilities, concluding that there is a need for more staff preparation, with Lang (2002) expressing the need for staff development (specifically related to supporting students with hearing impairment) to focus on the critical nature of classroom participation and the psychosocial and communicative factors that may inhibit participation. Research also indicates inadequately trained staff members in disability resource centres (Dukes & Shaw, 1998). Without proper intervention, Piggott, Houghton and Armstrong (2006) argue that students with disabilities will remain at a disadvantage with respect to university teaching and learning experiences.

In developing countries, evidence also indicates that inclusive education is not being satisfactorily implemented (in schools) with factors such as absence of support services and relevant materials, lack of funding structures, the absence of enabling legislation and inadequate personnel training programmes (Eleweke & Rodda, 2002), all of which has resulted in “negative attitudes among ordinary educators towards inclusive education” (Abosi & Koay, 2008:7). There is an acknowledgement, however, that inclusivity should be a core component of all teacher education programmes (SA, DoBE, 2010) and that education faculties in higher education institutions should develop and offer programmes that develop the competencies (including inclusivity) required by educators (teachers) for all bands of education (SA, DoE, 1998). Research on the attitudes of school teachers in Zimbabwe towards students with disabilities suggested a need for the enhancement of teacher training in inclusive education practice (Mutepfa *et al.*, 2007). Similar results were reported in a recent South African study, with findings revealing that teachers have limited experience and understanding of inclusive education. As a result, most teachers felt inadequately prepared to implement it (Ntombela, 2011). The issue is more complex than simple provision of professional development programmes, with academic staff members in higher education even being given the choice of not participating (attendance being voluntary rather than mandatory), which, as argued by Matshediso (2007a:690), “effectively undermines the rights of disabled students”.

Some recommendations for improving the current situation for students with disabilities in higher education are offered. Chataika *et al.* (2012:394) suggest having a “compulsory module on disability/diversity for every university student in order to produce future leaders, policy-makers and programme planners who are disability sensitive”. Oswald and Swart (2011) suggest that the values of inclusive education and disability issues should not simply be an add-on module, but that

disability-related issues must infuse the curriculum for teacher training. The need for the voices of students with disabilities to provide input into these initiatives, is also argued for by Allan (2008). Furthermore, Crous (2004) argues that, in addition to lecturing staff receiving training to deal with students with disabilities, there is also a need for awareness campaigns to make lecturers aware of the specific needs and problems of such students.

### **3.3.5 Summary**

In summary, many students with disabilities are still denied access to higher education and those who are accepted find the transition from secondary school to university very challenging because of a large number of barriers that still exist. Support services play an important role in the participation of students with disabilities in higher education, yet evidence suggests that first-year students may not know which accommodations are available to them. Various types of accommodations are available to students with hearing impairment, such as note-taking, academic tutors, instructional, curricula and language adaptations. Students with disabilities face significantly more barriers during their educational journey when compared with non-disabled students. These barriers include, but are not limited to attitudes of teachers and lecturers, inadequate support provisioning and educator preparedness, lack of funding structures and an absence of enabling legislation, particularly in the higher education sector in South Africa.

## **3.4 STUDENTS WITH HEARING IMPAIRMENT IN HIGHER EDUCATION**

The following section focuses on: attrition, persistence and academic outcomes, personal/social factors related to students with hearing impairments, the potential impact of having a hearing impairment on learning, the barriers experienced and the various factors supporting the success of students with hearing impairment.

### **3.4.1 Attrition, persistence, and academic outcomes**

As previously mentioned in Chapter 2 (see section 2.4.8.3), the participation figures of students with hearing impairment in higher education is very low. Furthermore, little is known about how students with hearing impairment experience higher education (Lang, 2002; Luckner, Slike & Johnson, 2012). What is known, however, is that of those students who do enter higher education, many do not graduate successfully due to a variety of factors, such as lack of support, specifically for students with hearing impairments. The academic achievement gap between students who hear and those with a hearing impairment is a frequently reported fact (Marschark, 2006; Meadow-Orleans, 2001; Moores, 2003). This section will briefly discuss attrition, persistence and the academic outcomes for students with hearing impairment in higher education.

Attrition refers to the gradual decline in the number of registered students. Student attrition is one of the greatest areas of interest in higher education and has been a popular topic for quite some time. The highest rate of attrition commonly occurs during the first year of study. The same truth



applies to students with hearing impairment. According to Allen (1986), Rawlings *et al.* (1991) and Stinson and Walter (1992), almost 75 per cent of students with hearing impairments do not graduate from postsecondary (includes colleges and universities) educational institutions. In a later study, in support of this thesis, Stinson and Walter (1997) found that the two- and four-year college retention rates for students with hearing impairments were considerably lower than those for students who hear.

Tinto (1987), an authority in the field, is clear that persistence means to remain in college until graduating whether or not multiple institutions of higher education are utilised, and in a later study he found that persistence is particularly important during the first year of college since most attrition occurs at this time (Tinto, 1998). In postsecondary institutions in the USA, only about 35 per cent of students with hearing impairments graduate from 2-year programmes, compared with about 40 per cent of their hearing peers. Around 30 per cent of students with hearing impairments graduate from 4-year programmes compared with about 70 per cent of their hearing peers (Marschark, Lang & Albertini, 2002). There are a number of factors that influence persistence positively, such as –

- the students' confidence in their formal academic abilities (Lent, Brown & Hackett, 1994);
- their integration into the academic and social systems of the institution (Boutin, 2008; Scherer, Stinson & Walter, 1992; Tinto, 1998);
- overall social satisfaction during the first year of their studies (Stinson, Scherer & Walter, 1987);
- academic and social integration (Dowaliby, Garrison & Dagel, 1993); and
- student involvement with their peers in a learning environment (Tinto, 1998).

Other factors, according to Lang and Stinson (1982) and Stinson and Walter (1992) include –

- leaves of absence;
- programme lengths;
- difficulty in carrying full course loads;
- dissatisfaction with social life;
- an inability to decide on a major area of study; and
- changes in career interests.

According to Tinto (1987), it is important to monitor the progress of students with hearing impairment as per the variables of the 'model of persistence', particularly during the most vulnerable first 10 weeks of study (Boutin, 2008). Research conducted with degree-level students also showed that students with hearing impairments do not feel as much part of the 'university family' as their hearing peers (Foster, Long & Snell, 1999).

Other evidence, however, reveals that good academic outcomes for students with hearing impairment are possible. In a study by Richardson (2001), no evidence was provided to suggest that hearing impairment affects the likelihood of academic progression, completion or achievement in students enrolled at institutions of higher education in the UK. On the contrary, Richardson (2001) argues that the academic attainment of students with hearing impairment is what would be expected, given their age, their prior academic qualifications, their level and mode of study. Furthermore, his research suggests that students with hearing impairments are less likely to register for degrees in law, medicine, business studies, engineering or physical sciences and more likely to be studying in the fields of the humanities, creative arts or social studies. It is important to note that successful outcomes are only possible with the provision of appropriate human and technical resources to support the students in their studies.

### **3.4.2 Personal/Social factors related to students with hearing impairment**

Although each student with a hearing impairment is unique in his or her own right, and without trying to stereotype, there are some particular personal and social factors that can play a significant role in their academic success, such as the ability to manage time efficiently and effectively, the choice to disclose their disability, the option to request and make use of reasonable accommodations, and so forth. As comparatively few studies have been undertaken on this topic the sources are relatively dated.

An early study conducted by Quigley, Jenné and Phillips (1968) used a survey to investigate the reasons for success amongst students with hearing impairment in higher education. Amongst the most frequent answers were (a) being self-confident, (b) taking the initiative in getting special help, and (c) having good study habits. A sense of control of events seems to be implicit in each of these factors. Similar studies exploring psychological characteristics, found that students with hearing impairments perceive themselves as having –

- (a) little personal control of events in comparison with normally hearing peers (Bodner & Johns, 1977; Meadow, 1976);
- (b) relatively low self-esteem (Garrison & Tesch, 1978; Lane, 1994); and
- (c) a relative lack of ability to spontaneously generate self-motivating goals (Elliot & Vegely, 1969).

Qualities that promote the success of students with hearing impairment in higher education, as reported by (Lang, 2002:269) include (but are not limited to) “self-awareness and its relationship to career awareness, persistence, self-identity, self-efficacy, perseverance, ability to accommodate oneself in an integrative environment and general maturity”.

Another study by Stinson (1984), concerned with the motivation of students with hearing impairments, particularly those at the secondary and postsecondary levels, found that those who

have been successful in mainstreamed college settings seem to recognise that being in control of and responsible for learning outcome is essential for success. More than ten years later, Stinson and Walter (1997) found that certain personal 'characteristics' of students with hearing impairments that can influence social adjustment are communication skills, self-identity and the type of peer group with which they identify.

A qualitative study by Bishop *et al.* (2000) found that students with hearing impairments are often isolated. Participants in their study almost unanimously gave 'embarrassment' as a reason why they did not interact more socially. They reported being worried about mishearing people and therefore misinterpreting what is being said to them. The author argued that isolation can be self-regenerating, as limited interaction may prevent people with disabilities developing the social confidence and skills needed for full social participation, resulting in a vicious circle of events. In the most recent study concerning personal factors of students with hearing impairments, Albertini (2012) found that these students were confident about making use of support services but that they were less confident about their abilities to prepare for classes, manage their time and concentrate on assignments. Students reported high levels of academic difficulty, expressed concern about their study habits, lower levels of verbal confidence, lower motivation to finish college and less than positive attitudes towards teachers. Albertini (2012) argues that these personal factors were all related to lower academic scores.

The findings of the abovementioned studies confirm that students need more than mere academic ability. There is a need for them to develop personal characteristics that are critical to ensuring success in higher education. These characteristics should be taught, encouraged and practiced long before entering higher education in order to facilitate smooth transition and successful educational outcomes.

### **3.4.3 Potential impact of hearing impairment on learning**

Communication is a process that links human beings but which is also central to who we are; thus, more severe and profound forms of hearing impairment have the potential to significantly affect one's life, including the learning process when in the educational environment. The impact of hearing impairment does, however, depend on the type, extent and timing of the hearing impairment.

Communication is at the heart of everything human beings do; it defines and gives meaning to our emotions, beliefs, hopes, creativity, and life experiences. Without communication, a child is lost (California Department of Education, 1999:1).

Hearing impairment and its consequences are well documented. According to Tucci *et al.* (2009), mild to moderate hearing impairment in children can result in developmental delays with profound hearing impairment leading to significant speech and language delays, often with the resultant inability to engage in oral/aural communication. Without interventions such as hearing aids and

cochlear implants, children may never develop speech and language or any ability to communicate effectively. Moreover, hearing impairment may also inhibit the social interaction of students and if they communicate via speech, articulation problems may make it difficult to understand them (Lewis & Doorlag, 1999).

The main barriers experienced by students with hearing impairment are related to language and communication (SHU, n.d.). Findings from a study conducted by the Gallaudet Research Institute (2005) reported that the average reading comprehension score (as measured by the SAT-9) for 17- and 18-year-old students with hearing impairments was approximately equivalent to that of a fourth-grade hearing student. In the United States, research has linked hearing impairment in the school-age population with –

- delays in social development (Davis, Efenbein, Schum & Bentler, 1986);
- poor reading skills (California Deaf and Hard-of-hearing Education Advisory Task Force, 1999) and oral language (Bess & McConnell, 1981; Yoshinaga-Itano, Sedey, Coulter & Mehl, 1998); and
- serious limitations in educational performance relative to hearing peers, even when the hearing impairment is minimal (Doyle & Robson, 2002).

Additional literature also suggests that students who do not have full auditory access to spoken information in classrooms (from the teacher or from peers) do not learn at normal rates, that the loss of hearing is often accompanied by delayed acquisition of vocabulary, reduced incidental learning and limited reading abilities (Ries, 1994; Ross, 1990).

Margaret Burke (Burke, 2010), when conducting professional development training for staff at the University of Sheffield Hallam (a centre regarded in the UK as best practice for supporting students with hearing impairment) regarding the support needs of deaf and hard of hearing students, cites the following possible traits/effects of hearing impairment:

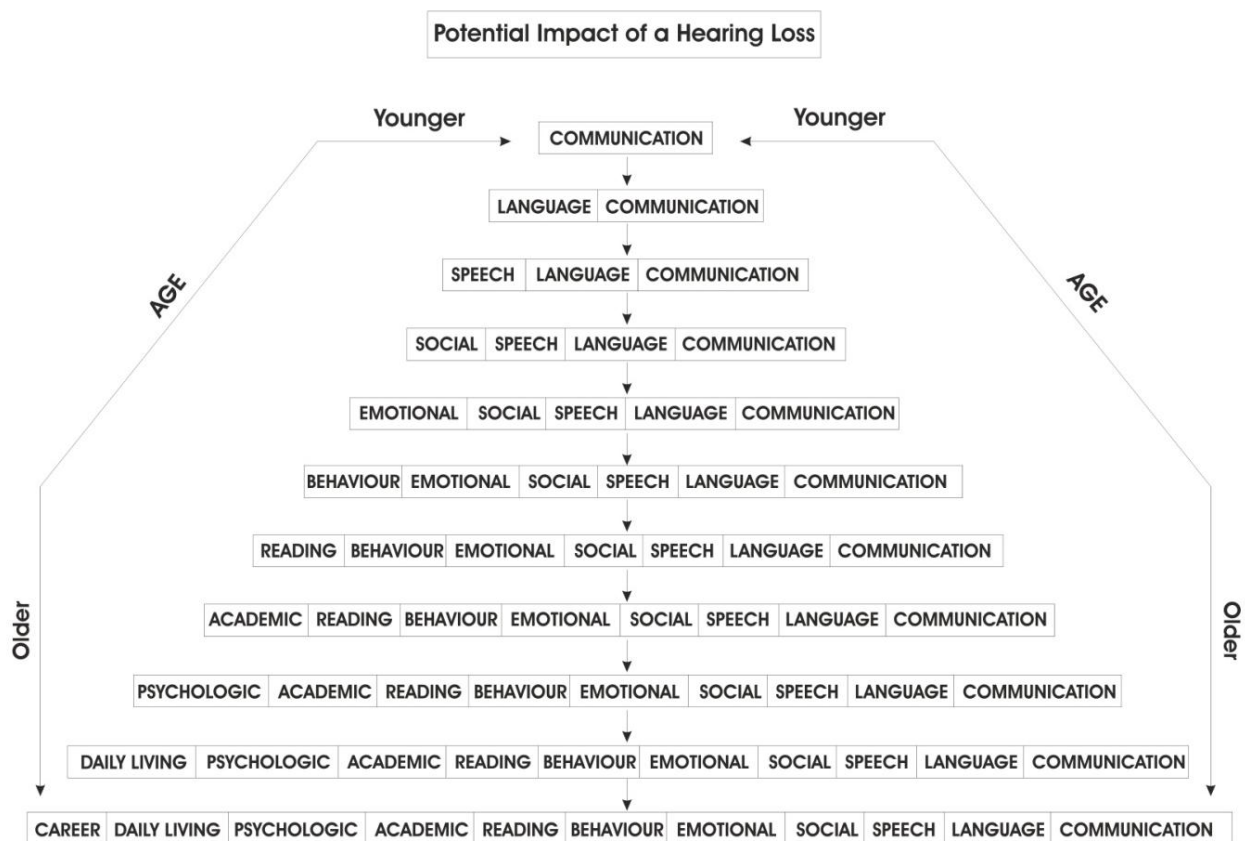
- written work may appear immature and may lack depth due to limited vocabulary and general knowledge;
- difficulty extracting meaning from text, including lecture notes, assignments and reference materials;
- restricted vocabulary shown by the acceptance of particular words as having a fixed meaning relating only to previous experience;
- difficulty absorbing and using new technical contexts;
- difficulty using everyday words in specific technical contexts;
- misinterpretation of information, especially where there is some ambiguity, incorrect verb endings and spelling mistakes in written work; and
- syntactical errors, such as incorrect word order, words missed out or extra words included.

Furthermore, it is explained that some students with hearing impairment in higher education may exhibit some or all of the following traits:

- difficulty producing discussion elements of an assignment, particularly where these depend on abstract thinking rather than practical observation;
- taking longer to read, understand and absorb information;
- heavy reliance on dictionaries, references and tutors to check their understanding;
- taking longer to plan and produce written work than the average student; and
- often having low self-confidence regarding their academic work (SHU, n.d.).

The fact that these effects are completely independent of the intellectual ability or potential of a student with a hearing impairment is highlighted (Burke, 2010). Even though students with hearing disabilities are able to master the academic content, their ability to demonstrate academic performance is compromised because of delays in developing communication, language, reading and writing skills (Luckner & Bowen, 2006). In addition, Brett (2010) argues that, in the higher education context, students with severe and profound levels of hearing impairment are more likely to present with functional difficulty with accessing spoken language, which in most academic contexts is the primary mode of instruction and knowledge transmission in the classroom. These students are therefore more likely to be excluded from participation, more likely to require services to enable their participation, and more likely to self-identify in questions relating to disability status.

Figure 3.1 below displays the compounding effect that a hearing impairment may have on an individual's life. Areas such as communication, socialisation, learning and work may be significantly affected. From this figure, it is evident that the effects are age-progressive with the main barrier at a young age being basic communication, but within adulthood the impact is more complex ranging from communication to behavioural and psychological impacts.



**Figure 3.1: Potential effect that hearing impairment may have on an individual’s life (Luckner, 2002:4).**

As depicted above and in relation to Table 2.1, a hearing impairment of any type or degree may affect development and functioning in many ways. In a recent article by Luckner *et al.* (2012:59), five specific challenges that often occur as by-products of a hearing impairment and that interfere with typical ways of learning are presented, namely

- language, vocabulary and literacy delays;
- gaps in background and domain knowledge;
- inadequate knowledge and use of learning strategies;
- social skills deficits; and
- reliance on assistive technologies.

It is important for each of these areas to be addressed to ensure educational success for students with hearing impairments.

### **3.4.4 Barriers experienced by students with hearing impairment in higher education**

Students with hearing impairment face a multitude of barriers in higher education. There could be many reasons to explain why these barriers exist, such as lack of support, lack of awareness of the accommodation needs of these students, the 'invisibility' of their hearing impairment, the uniqueness of hearing impairment and therefore complex support needs, teaching faculty ignoring calls for attendance at disability-related professional development courses, and lack of financial and human resources, to mention but a few. These factors make it 'unattractive' to universities to admit students with hearing impairments, resulting in under-representation in higher education. Furthermore, these barriers, as reported by Howell (2006:170), have a profound and sustained effect on the psychosocial well-being and functioning of the student. Disabled people who have managed to attend higher education institutions argue that the energy, emotional resources and levels of stress involved in dealing with the overwhelming range of barriers that confront them are extremely undermining and place them at an ongoing disadvantage in terms of other students, and if they are unable to 'deal with' these issues, the prevailing attitudes and prejudices towards their abilities are reinforced. Adding to this, I would strongly support Reindal's (1995) assertion that students with sensory disabilities encounter so many practical difficulties that their ability to study can be undermined, which often results in attrition or lack of persistence in higher education. This section will review literature related to the implications of hearing impairment in higher education and its associated barriers.

#### **3.4.4.1 Implications of hearing impairment on the individual**

The implications of hearing impairment on the individual vary depending on factors such as degree of loss and age of onset. With more severe and profound losses, the effects are substantial, such as lack of participation resulting in isolation or anti-social behaviour (Piggott *et al.*, 2006), weakened social capital networks (Potts, 1999), reduced employability, major fatigue and high levels of frustration (Luckner, 2003). Evidence suggests that the participation or active engagement by students with hearing impairments in higher education is one of the most difficult barriers to overcome (Lang, 2002). Students with hearing impairment often misunderstand what they hear resulting in confusion, they frequently feel isolated from their peers, and tend to become anti-social (Szelazkiewicz, 2002). Having to be alert at all times in class, together with hours of instruction or meetings result in the student being severely fatigued by the high-level auditory processing issues taking place. As voiced by a hearing-impaired participant in a teacher education programme: "The effort to direct your environment for maximal participation is never ending and draining" (King *et al.*, 2010:389). Another impact of hearing impairment is high levels of frustration, often due to continuous attempts to make themselves understood and having to cope with people who constantly forget that they are speaking to someone with a hearing impairment (Piggott *et al.*, 2006). Reindal (1995) and Hurst (1996) argue that, where students with disabilities are expected to look after the availability of supports such as note-provision or microphones, disability is being

conceptualised as purely an individual problem (medical model), which has far-reaching consequences, such as students with disabilities having to explain their needs repeatedly and having to face ongoing barriers attempting to access information (Holloway, 2001).

#### **3.4.4.2 Communication barriers within the learning environment**

Statistics reveal that most infants with hearing impairment are born to hearing parents. At school level, they make use of lip-reading together with their hearing instruments. Research indicates that the level of difficulty coping in a 'hearing' environment increases dramatically at post-school level. At university level, students with hearing impairments face various types of communication barriers within the learning environment, such as poor classroom acoustics together with excessive levels of background noise (King *et al.*, 2010), reverberant rooms, poor lighting conditions, staff/students unaccustomed to communicating with students with hearing impairments (Wald, 2002), the pace (rate of presentation by educator), the number of speakers involved, language and cultural differences, and the use of space (physical arrangements in the classroom) (Saur, Layne, Hurley & Opton, 1986), group work (Borg *et al.*, 2008), videos not being captioned (Easterbrooks, 2008) and inability to follow or participate in class discussions.

The results of a study of students with hearing impairment enrolled in distance education (Richardson, Long & Foster, 2004) reported that the main obstacle to being successful in higher education are difficulties with communication rather than any cognitive or academic demands. A survey of students with a disclosed disability at a single university in the UK found that more than 50 per cent of the respondents with hearing impairments reported barriers related to their disability which impacted on their learning during lectures:

- they experienced problems where lecturers talked too fast or removed visual materials such as overhead transparencies before the student had time to digest the contents;
- for many students, listening and writing notes or watching and making notes was a particular difficulty, leaving them with the dilemma as to which to concentrate on, and, frequently with poor notes as a result; and
- their opportunities to contribute to class discussions or question and answer sessions were restricted because students found it difficult to hear or see the lecturer or other students or they became frustrated at the quick pace of discussion.

Other reported barriers to learning stemmed from what students experienced as lack of cooperation from some lecturers, for example, failing to provide user-friendly handouts (Fuller *et al.*, 2004). Additional barriers reported by students were having to cope with unreliable equipment, lecturers who spoke too quietly, lecturers who forget to turn on the induction loop system, failed to wear the lapel microphone, did not face the students when lecturing or objected to the lecture being recorded (Piggott *et al.*, 2006). When a lecturer refuses to make use of assistive



technologies, such as a loop system, the student can often be made to feel helpless. Moreover, when students do not hear well, it undermines their ability to achieve their identified educational objectives such as successful graduation (Easterbrooks, 2008).

There are two main issues of concern regarding learning environments, namely background noise and the consequences of students not hearing instructions (for example, during exams and not stopping writing). With regard to the first issue, sources of background noise according to Nicholson (2007) include air conditioners, open windows, open doors, outside traffic noise, other students talking, machinery (in laboratories), data projectors, and wind and other general weather conditions on field trips. Often, various amplification devices are used to raise the educator's voice above the background noise, but evidence demonstrates that it is more desirable rather to reduce background noise (Nelson *et al.*, 2002). Large lecture halls with cement floors and walls, prevalent in so many higher education institutions, are more often than not well below acceptable acoustical standards. Conditions such as lack of window treatments, insufficient insulating seals on room doors facing common corridors, and noisy heating and cooling systems add to the problem with the overall acoustic characteristic of classrooms in universities generally presenting a significant communication barrier for students using hearing instruments, such as hearing aids and cochlear implants. For such students, background noise and sound reverberation present a greater problem in understanding speech than they do for normally hearing individuals. Reverberation in classrooms arises from sound reflecting off hard walls and high ceilings. In rooms with hard surfaces, sound reflects, causing a persistence of the sound after the source itself stops. Excessive reverberation 'smears' the temporal properties of speech signals. Instead of individual distinct speech sounds following one after another in words, the reverberation makes the sounds overlap each other, causing them to be more difficult to understand (Nelson *et al.*, 2002:7). Studies by Crandell and Smaldino (1999) show that a hearing aid user requires a classroom reverberation time to be under 0,4 seconds, and that the primary speech signal arrives at the listener's hearing aid microphone at least 15 decibels above any background noise. Furthermore, the overall room noise needs to be less than 35 to 40 dB. A study at the University of British Columbia found that only half of the 45 classrooms sampled rated 'good' for speech intelligibility (Hodgson, 1994). The argument by Nelson *et al.* (2002) that the removal of acoustical barriers to communication will facilitate learning for all is in line with the principles of universal learning design which will be discussed later in section 3.4.5.5 in this chapter. No evidence of studies on this topic conducted in South Africa could be sourced.

A further communication barrier in the learning environment relates to the use of assistive devices such as FM systems. Often lecturers are not aware of and do not understand the use of these technologies. There is therefore a need to include training such as how to manage assistive listening systems, such as induction loops systems, as part of their ongoing professional

development. This argument is supported by (Crandell & Smaldino, 1999; DeConde-Johnson, Benson & Seaton, 1997; Flexor, 1997).

#### **3.4.4.3 Societal barriers**

Students with hearing impairments face various societal barriers such as lack of knowledge and awareness regarding hearing impairment. Collins (2000) reports that students with disabilities identified attitudinal issues as the most significant barrier to progress, as opposed to teaching faculty who identified lack of physical access and assistive technology as the greatest obstacles to inclusion. The findings from a survey undertaken at universities by Wolfe and Woodrick (1997) identified that faculty and staff awareness of the needs of students with hearing impairment was the primary area of deficiency. Moreover, in a study by Punch, Creed and Hyde (2006), findings indicated that other people's lack of understanding hearing impairment constituted the greatest potential barrier to the educational and career goals of adolescents.

#### **3.4.4.4 Inflexible curricula**

Of all the barriers experienced by students with hearing impairments, the lack of curriculum transformation to increase access to communication and information, in my opinion, is the most prevalent and has received the least attention, especially in South Africa. Despite the report of the National Commission on Special Needs in Education and Training and the National Committee on Education Support Services (SA, DoE, 1998) arguing that, in an inclusive education and training system, the curriculum needs to be accessible and responsive to the needs of all learners, this is certainly not the case yet, especially in higher education. The report calls for overall curriculum transformation, including such aspects as learning programmes, teaching practices, capacity of teachers, assessment of learning outcomes, medium of teaching and learning, materials and the nature of support provided to enable access to learning programmes.

In the higher education sector, Howell (2006) argues that universities and the support services that they offer are influenced by the dominance of the medical discourse of disability, with barriers experienced by students with disabilities being ascribed to a lack of technological equipment, such as assistive listening devices, without any attention being devoted to the teaching and learning process in supporting these students' needs. The way in which teaching occurs and the learning environment tend to marginalise students with disabilities, more especially those students with hearing impairments. An example of this is the situation where a student with a hearing impairment is part of a class where a lecturer makes use of a video without subtitles. Matshedisho (2007a:690) extends this argument by adding that academic staff electing not to attend disability-related workshops together with the absence of formal policy requirements are effectively undermining the rights of students with disabilities to curriculum flexibility.

### 3.4.5 Factors supporting success

The following section includes a discussion on topics related to the factors which support the academic success of students with hearing impairments.

#### 3.4.5.1 Literature on student success

Literature, in the field of Disability Studies, regarding factors that support the success of students with disabilities is presented in Table 3.2 below. Details pertaining to the author and year of the research study are provided as well as the recommendations made (in each study) concerning the enhancement of inclusivity within higher education.

The studies conducted between 1991 and 2011 and displayed in chronological order, relate to teaching and learning, support services, institutional culture and leadership, as well as personal characteristics. Where the research focuses specifically on students with hearing impairments, this is indicated. The topics of disclosure, self-advocacy, self-esteem, coping strategies, universal learning design (ULD) and curricula transformation are discussed in depth thereafter.

**Table 3.2: Literature reviewed related to enhancing inclusivity within higher education**

REFERENCE	RECOMMENDATIONS FOR ENHANCING INCLUSIVITY WITHIN HIGHER EDUCATION
Norton, 1992; 1997	<ul style="list-style-type: none"> <li>Each student with a disability is unique and each individual case should be seen as such, there is no 'one-solution-fits-all'; support provisioning should therefore be tailored for each individual student and his or her specific needs</li> </ul>
Hurwitz & Kersting, 1993  (students with hearing impairment)	<ul style="list-style-type: none"> <li>As the pace of teaching and classroom discussions can be fast-paced and difficult to follow, it is suggested that an outline of the topics to be addressed should be provided – either in the form of a handout or written on the board</li> <li>Faculty should minimise movements so that students have a full view of the instructor and the board</li> </ul>
Stinson & Walter, 1997	<ul style="list-style-type: none"> <li>Identified three social issues to be addressed in order for students with disabilities to adjust effectively to higher education: developing social skills, establishing an identity and acquiring independence and interdependence</li> <li>They also recommend admitting students who match the demands of the university environment, early identification of the difficulties faced by students and early as well as appropriate interventions</li> </ul>
Solberg & Villarreal, 1997	<ul style="list-style-type: none"> <li>Social support is one of the most important protective factors in students' adjustment to a university setting and has been identified as a critical factor in long-term adjustment to the disability and overall success</li> <li>Social support may be conceptualised as interactions with family members, friends, professionals and peers that communicate information, reliable alliance, aid and esteem, allowing for sharing feelings to reduce stress and offering help with learning materials</li> </ul>
Lang, Stinson,	<ul style="list-style-type: none"> <li>There is a correlation between 'participative' learning styles and</li> </ul>

<p>Kavanagh, Liu &amp; Basile, 1998</p> <p>(students with hearing impairment)</p>	<p>academic achievement</p> <ul style="list-style-type: none"> <li>• Students with hearing impairments need to be more involved in the learning process</li> </ul>
<p>Chelin, 1999</p>	<ul style="list-style-type: none"> <li>• Strong institutional commitment to inclusivity and a good human infrastructure</li> <li>• The support for students with disabilities must be co-ordinated</li> <li>• Disability awareness training for all staff</li> <li>• Disability provision needs to be embraced at the top level of the university and filtered down</li> </ul>
<p>Porter <i>et al.</i>, 1999.</p>	<ul style="list-style-type: none"> <li>• Universities need to treat inclusion as a transformative process within the institution, and not as something to be 'added on'</li> </ul>
<p>Holloway, 2001</p>	<ul style="list-style-type: none"> <li>• In order for students with disabilities to have positive experiences in higher education they need access to appropriate equipment, sufficient funding to support their learning needs and academic staff need to be well informed, aware of diverse learning needs and be highly committed</li> </ul>
<p>Lang, 2002</p> <p>(international study on students with hearing impairments)</p>	<ul style="list-style-type: none"> <li>• Students need to work hard to be academically prepared</li> <li>• Social skills need to be developed</li> <li>• Individuals must acquire independence and interdependence</li> <li>• Positive social adjustment should occur and students with hearing impairments must learn to manage their reliance on a third party</li> </ul>
<p>Luckner &amp; Muir 2002</p> <p>(focus on students with hearing impairment)</p>	<ul style="list-style-type: none"> <li>• Suggest the importance of eight factors for promoting the success of deaf students: family involvement, extracurricular activities, friendships and social skills, collaboration and communication with teachers, pre-teach/teach/post-teach content and vocabulary being learnt, collaboration with service providers, reading and high expectations</li> </ul>
<p>Antia, Stinson &amp; Gaustad, 2002</p>	<ul style="list-style-type: none"> <li>• Educational institutions should encourage full membership (being an integral part of the school or university community) for students with disabilities</li> <li>• To facilitate membership, inclusive programmes must carefully address teacher attitudes, teacher roles and relationships, student knowledge and curriculum, structural barriers, extracurricular activities and community relationships</li> </ul>
<p>Wald, 2002</p> <p>(specifically related to hearing impairment)</p>	<ul style="list-style-type: none"> <li>• More accessible resource-based learning using small tutorial groups and computer-based learning which can reduce the need for communication support</li> <li>• The provision of course notes in advance and in electronic format, the use of visual aids to help support the understanding of spoken language, radio aids, captioning/subtitles, real-time verbatim transcription system (Palantype or Stenotype), note-taking support, portable note-taking devices, electronic note-taking, remote real-time communication support, text communication (SMS), using speech recognition to assist teaching and learning, real-time text transcription in lectures</li> </ul>
<p>Howell &amp; Lazarus, 2003</p>	<ul style="list-style-type: none"> <li>• People with disabilities need to be included and participate in decision-making processes and structures within institutions, such as institutional planning and resource allocation</li> </ul>
<p>Quick, Lehmann &amp; Deniston, 2003</p>	<ul style="list-style-type: none"> <li>• It is important that services and support systems be individualised, ensuring that students with different disabilities are able to access what they need</li> </ul>

	<ul style="list-style-type: none"> <li>The co-ordination of these services across campuses is also deemed essential</li> </ul>
Taylor, 2004	<ul style="list-style-type: none"> <li>Students need to be prepared for the transition between further and higher education</li> <li>Students should be encouraged to explore assistive technologies as part of their transition plan</li> </ul>
Fuller <i>et al.</i> , 2004	<ul style="list-style-type: none"> <li>There is a need for both variety and flexibility in all aspects of teaching and learning</li> <li>There is a need to ensure quality as well as parity of provision in comparison with non-disabled peers</li> <li>Access to information is vital, both for the students with disabilities as well as their lecturers</li> </ul>
Foster, Long, Ferrari & Snell, 2004  (specifically related to postsecondary students with hearing impairment)	<ul style="list-style-type: none"> <li>There is a need for comprehensive support services</li> <li>The importance of the role of pedagogy in relation to inclusive teaching practices is emphasised</li> <li>Instructors need to be aware of and learn how to deal with the individual communication preferences of students in their classes</li> <li>Teaching modifications made for deaf students also facilitate access to learning for all students, e.g. when a deaf student asks the instructor to repeat something, many hearing students also benefit from hearing the information a second time (part of universal access design, to be discussed later)</li> </ul>
Mudgett-DeCaro & DeCaro, 2006	<ul style="list-style-type: none"> <li>Creative ways to teach via visually orientated approaches should be explored</li> <li>Explore creative ways of using existing and new instructional technologies</li> <li>Undertake research to test new, more inclusive, teaching methods</li> <li>All aspects of the higher education curriculum should be reviewed in terms of diversity and addressing barriers to learning and development so that all learners may engage in the learning process</li> <li>Teaching practices should ensure flexibility that accommodates a range of needs, and facilitates integration and mutual respect among learners</li> <li>All teaching and learning materials should be developed in such a way that they accommodate different learning needs</li> <li>Assistive devices must be available to learners with disabilities who require them</li> <li>Assessment options should accommodate a range of needs</li> </ul>
Cawthon, 2006	<ul style="list-style-type: none"> <li>There is a need for assessment accommodations in higher education which are designed to remove factors that penalise students because of their disability, resulting in assessment scores that do not accurately represent their content knowledge; the goal is to ensure that assessments measure content knowledge and not the ability to take the test (Elliott &amp; Branden, 2000; Shrine &amp; DeStefano, 2003)</li> <li>Additional research needs to be undertaken regarding assessment accommodations</li> </ul>
Borg <i>et al.</i> , 2008	<ul style="list-style-type: none"> <li>Higher education institutions need to develop and implement a genuinely inclusive assessment framework</li> <li>An inclusive approach towards assessment requires a strong culture shift away from traditional forms of assessment (often dominated by the written word), towards a more broad-ranging schema of assessment</li> </ul>
Hyde, Punch, Power, Hartley, Neale &	<ul style="list-style-type: none"> <li>A critical success factor for university students who are Deaf or hard of hearing is having satisfying friendships and feeling a sense of belonging</li> </ul>

Brennan, 2009:87	through their contact with other Deaf and hard of hearing people. As one participant expressed: "It was the first time in my education that I had support. Having other Deaf and hearing impaired students in the same course, I wasn't the only one."
King <i>et al.</i> , 2010	<ul style="list-style-type: none"> <li>• The need for open dialogue with individuals with disabilities regarding their required supports and accommodations is imperative</li> <li>• There should not be reliance on the student with a disability to explicitly ask for what he or she needs; the university could start the dialogue and be proactive</li> </ul>
Ainscow & Sandill, 2010:401	<ul style="list-style-type: none"> <li>• "Leadership practice is a crucial element in gearing education systems towards inclusive values and bringing about sustainable change."</li> </ul>

From the table above, it is evident that a paucity of literature exists in this area of research, providing guidance to both institutions and students with disabilities concerning factors that support a meaningful, positive and successful educational outcome by enhancing true inclusivity. Four main categories are evident: teaching and learning, the individual student, the university, and disability support services. A large number of studies focused on the teaching, learning and assessment aspects of accommodating the needs of students with disabilities, such as teaching methods, the pace of teaching, keeping movement to a minimum in the teaching venue and using a participatory teaching style. Studies related to the individual assert that students with disabilities need to acquire social skills, form an identity, acquire independence and interdependence, they should work hard and manage their reliance on third parties. Literature on higher education institutions purport that universities need a strong institutional commitment to inclusivity. Such inclusion should be treated as a transformative process (not an add-on), the necessary resources, such as equipment and funding must be made available and universities should encourage full membership for students with disabilities. Additionally, literature points to the need for disability support to be individualised and comprehensive.

The following subsections, as derived from the literature, focus on the concepts of disclosure, self-determination, self-advocacy, self-esteem and coping strategies in relation to students with hearing impairment.

### 3.4.5.2 Disclosure

Disclosure relates to the choice made by a student whether to declare that he or she has an impairment or not. It can take on many forms, including application and registration declarations, requesting support within a designated disability service or making complaints when needs are not met. For each student, the decision and manner in which he or she chooses to disclose is personal and often a complex process, with each individual having different expectations regarding how he or she would prefer people to react to the disclosure. Often students learn by experience how they feel about disclosing, which influences their decisions regarding how, when and to whom

they disclose. Students are not only confronted by the issue of disclosure at university, but also when they apply for jobs and enter the working environment.

Students with disabilities often enter colleges and universities unprepared to disclose their disability or lack the understanding of how to access services on campus (Wagner, Newman, Cameto, Garza & Levine, 2005; Getzel & Thoma, 2008). For students with a hidden or less obvious impairment, such as a hearing impairment, it may be possible for them to pass as a non-disabled student. Many students with invisible disabilities hold strong opinions about their ability to maintain a non-disabled status when necessary (Mullins & Preyde, 2013:155). The choice made by these students not to disclose, however, may be detrimental to their academic success as it limits the extent to which an institution is able to provide appropriate support (Houghton, Piggott & Armstrong, 2006).

Statistics regarding disclosure of hearing impairment by students in higher education is largely unavailable, and from the two studies that provided this information, the statistics are somewhat outdated. Data for the period 2000–2004 provided by the National Disability Team in the UK and presented by Gravestock (2006) revealed that an average of 5 per cent of all first-year undergraduate students disclosed some form of disability, with 6,1 per cent of these disclosing some degree of hearing impairment (Nicholson, 2007). In a 2004 study by Richardson, Woodley and Long (2004), it was stated that only 8 per cent of postsecondary students in the USA who had a hearing impairment had disclosed this to their university, further suggesting that there were over 42 000 students enrolled in higher education in the UK who had a hearing impairment that have not disclosed this to their institutions at the time of the study. One reason for this resistance to disclose may be due to these students' dependence on the hearing world for their social identity, not wishing to draw attention to their hearing impairment, and not wanting to enter the culturally Deaf world. Other reasons may be related to labelling or being stigmatised (Burgstahler & Doe, 2006; Getzel & McManus, 2005; Gordon & Keiser, 1998; Piggott *et al.*, 2006) as disclosure was viewed negatively, as a form of special pleading for special concessions (Borland & James, 1999) or because of a lack of understanding of terminology on documentation (Sanderson, 2001). Furthermore, students are wary of disclosing during application for the following reasons:

- fear of not being granted access to higher education (Brock, 1991);
- experiencing patronising attitudes from staff in further education leading to anxieties about disclosure in higher education (Madriaga, 2007);
- not seeing themselves as disabled or seeing themselves as 'not disabled enough' (Waters, Stevens, Holland & Madriaga, 2012:7).

Many students only disclose when they are forced to seek support when academic problems arise (Getzel & Briel, 2006; Getzel & McManus, 2005). In many cases, such as in the case of students

with hearing impairments when their hearing instruments are visible, the decision to disclose is imposed, and also if they wish to be fully included in social interaction disclosure is necessary (Piggott *et al.*, 2006).

The reasons for resistance to disclosure have been presented but the reasons that students with disabilities elect to disclose also require explication. The Equity Challenge Unit in the UK (ECU, 2011), recently conducted a survey of higher education institutions in England, Scotland and Wales, with the most commonly cited reasons given by students to disclose being:

- to have reasonable adjustments put in place;
- the influence of supportive, inspirational and understanding tutors;
- advice from friends and family;
- the importance of disclosure as a route to understand more about their impairment (Waters *et al.*, 2012); and
- students are also more likely to disclose if they are aware of the financial benefits available to them (Houghton, Piggott & Armstrong, 2006).

#### **3.4.5.3 Self-determination and self-advocacy skills**

The transition from the secondary to the tertiary environment is challenging for most students, but is even more so for students with disabilities, especially when trying to cope with their academic work and simultaneously managing their accommodations (Getzel & Thoma, 2008). One way in which students with disabilities can improve their higher education outcome is to be self-determined and to advocate for themselves by expressing their needs.

Self-determination has been defined as referring to “the attitudes, abilities, and skills that lead people to define goals for themselves and to take the initiative to reach these goals” (Ward, 1988:2). Thus, for individuals to be self-determined, they must “know what they want, understand their strengths and limitations and view themselves as being able to take control of their lives so that they can assume adult roles” (Luckner & Muir, 2002:24). Research has noted the need to foster independence and self-determination when providing supports for students with disabilities (Field, Sarver & Shaw, 2003), especially in terms of retention; whilst other studies have focused on the transition process when entering higher education (Getzel & Briel, 2006; Halpern, 1994; Stodden, Galloway & Stodden, 2003; Getzel & Thoma, 2008). Some arguing that not only do students with disabilities require self-determination skills for transition, but also to adjust to and remain at the college or university as well as to accept their disability and to understand it influence their learning (deFur, Getzel & Trossi, 1996; Eaton & Coull, 1999; Getzel, Briel & Kregel, 2000; Getzel *et al.*, 2004). In order for students with disabilities to be successful in higher education, researchers argue that, in addition to self-determination, the development of skills such as self-management, a keenness to explore technology and obtaining internships or other career-related



experiences are also essential (Briel & Wehman, 2005; Burgstahler, 2003; Burgstahler & Doe, 2006; Getzel & McManus, 2005).

When students were asked what advocacy or self-determination skills they think are absolutely essential at university, the students responded: “seeking services on campus, forming relationships with professors and instructors, developing support systems on campus and self-awareness (knowing oneself)” (Getzel & Thoma, 2008:81). Self-advocacy, a skill related to self-determination, refers to an individual’s efforts to understand and communicate his or her learning and communication requests to other people. As defined by Friend and Bursuck (2002), the term ‘self-advocacy’ refers to an individual’s ability to identify the support needed to succeed and to communicate such information effectively to others, including teachers, disability support personnel and employers.

The need for effective self-advocacy skills is often a key research finding (Taylor, 2004), for example –

- Lang and Meath-Lang (1992) call for students with hearing impairment in higher education to become more involved in redirecting their own destinies;
- Nicholson (2007) states that students with hearing impairments are least likely to communicate to their tutors or peers any difficulties or problems that exist;
- Garay (2000) maintains that students with hearing impairments often lack instruction in advocating for themselves during transition planning which limits their opportunities for additional academic and vocational training;
- Lyner-Cleophas *et al.* (2009) stated that the skills of self-representation and self-advocacy are important for students with disabilities to develop prior to entering higher education; and
- students themselves also believe that they lack self-advocacy skills because they have not had any training or experience in describing their disability to others, with them expressing a need to learn more so that they could gain the necessary strength and courage to ask for what they need to be able to succeed (Lehmann, Davies & Laurin, 2000).

Self-advocacy strategies have been shown to be effective ways to be proactive in postsecondary classroom settings (Durlak *et al.*, 1994), with research indicating that parents need to first pass on the skill and then relinquish their advocacy role to the greatest degree possible as students in higher education need to request services and advocate for themselves (Van Dyke, Martin & Lovett, 2006). Further benefits of the development of self-advocacy skills include: students becoming actively involved in identifying and meeting their educational, social-emotional, and career goals, being aware of their strengths and weaknesses and the potential impact of these on their performance, being able to identify the support that they will need to succeed, and also

developing the appropriate communication skills to express their needs in a positive and assertive manner (Luckner & Muir, 2002).

#### **3.4.5.4 Self-esteem and coping strategies**

Self-esteem can be viewed as a person's summary evaluation of their worthiness as a human being (Rosenberg, 1979), referring to the sum of all personal attributes rather than only to one specific dimension (Rosenberg, Schooler, Schoenbach & Rosenberg, 1995). Although early theories postulate that the negative attitudes of the hearing majority towards people with hearing impairment lead to low self-esteem (Lane, 1994), few empirical studies investigating this phenomenon actually support this thesis but rather argue to the contrary (Bat-Chava, 1993; 1994). In the educational environment, but not specifically related to students with hearing impairment, studies indicate that academic achievement is only related to students' self-esteem when they value it as an indicator of their self-worth (Crocker, Karpinski, Quinn & Chase, 2003), and that family and peer support are also related to self-esteem among college students (Fass & Tubman, 2002). A review of the literature suggests that a number of factors may protect and enhance the self-esteem of people with hearing impairment:

- (a) mode of communication at home;
- (b) type of schooling prior to college (Bat-Chava, 1993; 1994; Greers, 1990; Kluwin, 1999; Luckner, 1999);
- (c) age of onset of deafness (Higgings, 1980; Munoz-Baell & Ruiz, 2000; Strong & Shaver, 1991)
- (d) severity of hearing impairment with hearing aid (Jambor & Elliott, 2005; Luey, Glass & Elliott, 1995), and
- (e) group identification (Schirmer, 2001; Shah, Arnold & Travers, 2004).

Coping strategies or mechanisms are used by people to assist them to deal with hardships as a way of reducing the physical and psychological pain associated with negative life events (Jambor & Elliott, 2005:64). The scant literature available argues that the adoption of productive coping styles can positively influence the self-esteem of members of minority groups (such as people with disabilities) (Jones, Farina, Hastorf, Markus, Miller & Scott, 1984); however, which strategies they use and when has not been thoroughly investigated (Bat-Chava, 1993; 1994; Becker, 1981; Higgings, 1980).

People with hearing impairments also "choose among various coping mechanisms to protect and enhance their sense of self-worth" (Jambor & Elliott, 2005:64). There are two primary groups of coping styles: proactive and reactive. Proactive styles include (a) assertiveness to obtain goals and (b) overcompensation, or endeavouring harder than peers who hear to succeed. Reactive styles are characterised by denial of the hearing impairment, pretence, bluffing, deception, limited

interaction, and social withdrawal. Many of these reactive behaviours reflect resistance to change by the person with a hearing impairment (Carmen, 2001). Covering is a technique used by people with hearing impairment that allows them to pass as hearing. The negative consequence of using this technique is that it leads to a lot of stress as the person is constantly in fear of being 'found out', leading to that person paying a high psychological price (Goffman, 1963). Furthermore, literature argues that, although the use of covering (and societal withdrawal) can lead to positive self-esteem, the negative trade-off is isolation (Link, Struening, Rahav, Phelan & Nuttbrock, 1997; Jones *et al.*, 1984).

Due to the gap in the literature concerning people with hearing impairment and the concept of self-esteem and coping strategies, Jambor and Elliott (2005) set out to explore the factors that might determine these concepts among students with hearing impairments at California State University. The study focused on means of communication at home and severity of hearing impairment with hearing aid, as well as the coping styles that people with hearing impairments adopt to cope with everyday life in a hearing world. The findings indicated that the strategies for coping that individuals with hearing impairments used included withdrawal from social settings, covering for material that they missed due to their hearing impairment, and using bicultural awareness to make appropriate responses in given situations (Jambor & Elliott, 2005). Results also revealed that students with a greater degree of hearing impairment and with bicultural skills that help them function in both the hearing and the Deaf community generally have higher self-esteem. One of the reasons suggested for this is the acceptance of themselves as Deaf people and instead of attempting to remedy their deafness through surgeries and hearing aids, their attention is focused on ways to succeed personally and professionally. Jambor and Elliott (2005) further argue that those individuals with some residual hearing may feel torn between two worlds: not fully being part of either and their "constant search for a clear-cut self-concept" (Jambor & Elliott, 2005:75) may take its toll on their self-esteem. There is, however, no empirical evidence to support these claims.

#### **3.4.5.5 Curriculum accessibility**

As previously highlighted, one of the major obstacles for students with disabilities is the inflexibility and inaccessibility of the curriculum. Despite the Report of the National Commission on Special Needs in Education and Training and the National Committee on Education Support Services (SA, DoE, 1998) calling for appropriate curriculum and institutional transformation in the educational system in South Africa, some progress has been made through rearticulation within primary and secondary schooling, as well as National Certificate (Vocational) programmes (NCV) in FET colleges, but the status quo in higher education has remained largely unchanged.

It is not sufficient for universities to only grant access; there is an urgent need for them to actually ensure that students with disabilities are educated in inclusive settings with an inclusive culture and with faculty who create inclusive curricula and teach in inclusive ways. As suggested by Chataika

*et al.* (2012), “universities should endeavour to make their environment and curriculum accessible, as well as generating new knowledge about disability; not just as a health and welfare issue, but also as an issue of difference and diversity such as gender or race”. Students with disabilities also need to be given the opportunity to have a ‘voice’ in higher education by sharing their experiences and providing input regarding policies, procedures and support provisioning. Rizvi and Lingard (1996:21) similarly go on to say, “It is not sufficient for these students simply to have access – their engaged participation is necessary; it should not merely be symbolic but real.” The only way for this to take place is for institutions to move away from the ‘add-on’ approach (‘politics of incorporation’) where individuals from marginalised groups are “added to established institutional regimes without considering that these might need to change” (Bacchi & Eveline, 1996:79–80).

For students with hearing impairments, at all levels of education in South Africa, access to the curriculum is largely denied. This occurs not only through the curriculum, but also through inadequate availability of assistive technology to support their communication needs (Shevlin *et al.*, 2004). A review of the literature related to supporting the learning needs of students with hearing impairment reveal –

- students perform better academically when a participative learning style is used (Lang, 2002);
- materials should be developed from the outset with students with hearing impairment in mind rather than adapting existing materials (Kaplan, Mahshie, Moseley, Singer & Winston, 1993);
- the importance of consistent language and communication in instruction and assessment activities (Cawthon, 2008); and
- there has been a call for “curricula justice”, which in Connell’s view of curriculum focuses on the relationship between students and teachers, as clearly stated, “The problem is not so much in unequal shares of an educational service, as in the educational relationships embedded in that service which makes its effects unequal or oppressive” (Connell, 1998:94).

One way of removing barriers of access to the curriculum is to use the philosophies and principles of universal learning design (ULD) or universal design for learning (ULD) which came to prominence in the field of education in the late 1990s, based upon the architectural principle that buildings and spaces must be readily accessible to all, including those with disability or impairment (Centre for Universal Design, 1997; Mace, 1998). By the end of the 1990s in the USA, universal design became a primary goal when developing education curricula and ULD emerged along with the emphasis on access, participation and progress, driving the objective of ‘education for all’. The general concept is to incorporate accessible features systematically into a design instead of making changes or accommodations at a later stage.

A concise definition for UDL was provided by the Higher Education Opportunity Act of 2008 (USA), which stated,

The term ‘Universal Design for Learning’ means a scientifically valid framework for guiding educational practice that:

- (i) provides flexibility in the ways information is presented, in the ways students respond or demonstrate knowledge and skills, and in the ways students are engaged; and
- (ii) reduces barriers in instruction, provides appropriate accommodations, supports, and challenges, and maintains high achievement expectations for all students, including students with disabilities and students who are limited English proficient.

UDL is intended to reduce obstacles in curriculum and instruction. The word ‘universal’ in universal designs is not about a single best practice for all students, but rather “it is assumed that multiple and flexible teaching methods, assignments, activities, assessments, technologies and materials are essential” (Cochran-Smith, 2012:241; Rose & Meyer, 2006).

The Centre for Universal Design (1997) also proposed seven guiding principles for ULD:

- equitable use;
- flexible use;
- simple and intuitive application;
- perceptible information;
- tolerance for error; and
- low physical effort; and accessible size and space.

Two additional principles were added for instruction in post-secondary education: the establishment of a community of learners and a positive instructional climate (McGuire, Scott & Shaw, 2006; Scott, McGuire & Shaw, 2001; 2003). Although ULD does not remove challenges, but is intended to remove barriers to access, with curricula being designed from the outset to meet the needs of all learners, additional benefits include time- and cost-savings.

Authors such as Curry, Cohen and Lightbody (2006), Scott *et al.* (2003) and Van Kraayenoord (2007a; 2007b) maintain that UDL is particularly relevant to both special and inclusive education as it addresses equal educational access, meets students’ needs and learning preferences, challenges the need for education of students in special settings, and eliminates marginalisation. ULD is seen as an effective way to shift the burden of adaptation from the learner to the curriculum, acknowledging that learners who are ‘in the margins’, such as learners with disabilities, are particularly vulnerable to barriers created within instructional environments (CAST, 2011). In 2003, Scott, McGuire and Shaw developed a more inclusive paradigm for teaching by adapting the

framework of ULD and its principles to reflect the instructional practices that have been acknowledged as effective with students with disabilities. Almost no literature on the topic of ULD exists with reference to the South African context, although the FOTIM (2011) research report does call for HEIs to incorporate concepts of universal design into faculty instruction and curricula so that all students could benefit from the learning process.

Curriculum differentiation appears to be an alternative way of framing UDL, and if there is any difference between the two concepts, Tomlinson (2001) argues it could only be in the delivery of a differentiated curriculum that can be both planned and spontaneous. Curriculum differentiation is seen to be a key component of creating flexible learning environments in which inclusive practices are encouraged that address the learning needs of students (Ashman, 2010; Hart, 1996; Page & Valli, 1990; Tomlinson, 2003). Maker (1982), arguably one of the earliest advocates of differentiation, and Van Tassel-Baska (1998) suggest that curriculum differentiation requires consideration of the learners' characteristics, their skills and knowledge, the pace of presentation, the complexity of the information and the depth of learning required.

At the higher education level, Ashman (2010:671) asserts that lecturers should consider the "purpose of a particular course, programme, discipline or domain; the intentions of specific teaching-learning sequences, the knowledge and understandings that an instructor wishes to encourage or foster, and the learning outcomes sought", which is often not part of their thinking. Furthermore, he maintains that the attendance of professional staff development programmes by lecturers (e.g. regarding curriculum differentiation) does not necessarily lead to changes in practice and that the often prescriptive nature of curricula in higher education is an obstacle to successful differentiation, especially in the hard sciences.

Readers are encouraged to refer to the following two examples of best practice regarding inclusion and students with hearing impairments for additional reading: (i) Wareham, T., Clark, G. & Turner, R. (2006). *Developing an inclusive curriculum for students with hearing impairments*. Cheltenham: University of Gloucestershire and (ii) Watson, D., Schroedel, J., DeCaro, J. & Kavin, D. (2007). *Hard of hearing students in postsecondary settings - a guide for service providers*. Knoxville, TN: University of Tennessee.

### **3.5 CHAPTER SUMMARY**

In this chapter, the changing paradigm of education towards inclusion was discussed whilst the legislative and policy framework was sketched and support provisioning and accommodations for students with disabilities were explicated. Barriers to success in higher education as well as factors that support success were also reviewed.

South Africa, still in the early stages of introducing inclusive education, has made some strides in terms of implementation, especially in the primary and secondary learning environments. Greater

access to all levels of education for learners with disabilities has also been achieved; however, many barriers still exist. Although the doors to higher education have opened for some students, policies and procedures have not fully been implemented, which prevents reasonable access for all. Higher education institutions need to implement practical interventions such as increased funding and human resources, and training programmes for academics and administrative staff (to mention a few) to effect real change in redressing the current unsatisfactory situation. Furthermore, disability-related policies should be quality assured, their implementation monitored and institutions held accountable for non-progress. Hopefully the eagerly anticipated National Disability Policy and Strategic Framework (NDPSF) for higher education will lead not only to improved access, but also to improved transition and successful academic outcomes for all students with disabilities.

With reference to students with hearing impairments, they seem to be under-represented and under-supported in higher education. One of the reasons for this may be non-disclosure. There is a need for skills development enabling these students to become self-advocates who are able to determine the path of their own futures. Teaching faculty also need to be held accountable for their actions or non-actions and attitudinal barriers should be addressed through compulsory professional development programmes. The critical issue of curriculum inaccessibility also needs to be addressed. Furthermore, faculty need to be enskilled regarding assistive technologies related to hearing impairment.

The next chapter presents the research design and methods used in this study, including discussions concerning the rationale for the research approach, sampling issues, data transformation and synthesis, ethical considerations, trustworthiness as well as limitations of the study.

## CHAPTER 4

### RESEARCH DESIGN AND METHODOLOGY

#### 4.1 INTRODUCTION AND OVERVIEW

Growing numbers of students who have hearing impairments and make use of the oral method of communication are being granted access into higher education due to the adoption of inclusive educational policies in South Africa (see section 3.2.3) as well as technological advances (see sections 2.4.9, 2.4.10 and 2.4.11) allowing these students improved communication abilities. Now, more than ever, it is imperative that all students in South Africa, including those with disabilities, receive a quality education to equip them with the necessary skills and competencies required to become productive citizens who are able to contribute to the South African economy. Although various pieces of legislation (see section 3.2.3) place the onus on educational institutions to promote equal access to all qualifying students, and to offer important learning experiences that promote the success of these students, meaningful implementation of these policies is generally still lacking (Howell & Lazarus, 2003:59). Higher education institution's (HEIs) are accepting and registering students who have a mild, moderate, severe or profound hearing impairment, but are failing to provide suitable academic support and truly inclusive teaching and learning environments (FOTIM, 2011; SA, DoE, 1998; 1997).

The main research goal of this study was to analyse and describe the teaching and learning (academic) experiences of students with hearing impairments, using the oral method of communication, at the case study university. Aspects such as barriers faced, coping strategies employed, use of assistive technologies, curriculum access and the provision of academic and other support services were included. Few investigations of higher education provision for people with disabilities have previously been undertaken in South Africa (CHE, 2005) (see section 2.3.3). Of the studies which have been conducted both nationally and internationally, researchers such as Fuller *et al.* (2004:303) argue that "despite the growing interest in issues of inclusion, the voices of students with disabilities themselves have hardly been heard". It was important, therefore, in this inquiry that the 'students be heard'. As researcher, I believe that a better understanding of their lived educational experience would allow university management, lecturers and support staff to proceed from a more informed perspective in terms of academic programme design and delivery, academic support as well as the development of academic (teaching and learning) and support policies.

In seeking to understand this lived experience of students with hearing impairment, the inquiry sought to address the following central research question: "*How do students with hearing impairment using the oral method of communication experience teaching and learning support?*" The following sub-questions consequently emanated from the main research question:



- (a) Which, if any, curriculum transformation has occurred in order to accommodate the needs of students with hearing impairments?
- (b) Which support is provided by the university to students with hearing impairments?
- (c) Which barriers, in relation to teaching and learning, do students with hearing impairments experience and how do they attempt to overcome them?
- (d) Which factors did participants perceive might help them to complete their studies successfully?
- (e) Which components (both academic and non-academic), within the context of higher education, should be encompassed in a holistic Learning Support Framework?

This chapter describes the study's research methodology and includes discussions around the following areas:

- (a) rationale for the research approach;
- (b) description of the research sample;
- (c) summary of information needed;
- (d) overview of research design;
- (e) methods of data generation;
- (f) transformation and synthesis of data;
- (g) ethical considerations;
- (h) issues of trustworthiness; and
- (i) limitations of the study.

The chapter culminates with a brief concluding summary.

## **4.2 THEORETICAL PARADIGM AND PERSPECTIVES**

There are many definitions of research, but what they all have in common is the notion of inquiring into, or investigating a phenomenon in a scientific manner. As Cohen, Manion and Morrison (2007:7) point out, research is about understanding the world, and one's understanding is informed by how you view the world, what you view understanding to be and what you see as the purpose of the understanding. This implies that paradigms (which represent what we think about the world, but cannot prove) serve as the organising principles or 'lenses' by which realities are interpreted. These 'lenses' are known as ontology, epistemology and methodology. Hitchcock and Hughes (1995:21) suggest that ontological (What is truth/reality?) assumptions give rise to epistemological (How can we know?) assumptions which in turn give rise to methodological considerations, which lead to instrumentation and data generation. Henning *et al.* (2004:15) explain that the term 'epistemology' comes from the Greek word *episteme* which means 'how we come to know', and that methodology is about 'how we come to know by enquiring in certain ways'. An interpretive

(constructivist) framework which aims for human action to be understood from the insiders' perspectives, together with qualitative methods, was used in this inquiry.

**Ontology** (What is truth/reality?): In this study, I took on a nominalistic stance, i.e. the view that participants' internal and subjective experiences are important to answering the research question, which led to the use of qualitative methods, focusing on the social construction of people's ideas and concepts. This inquiry sought to analyse and describe the personal and subjective teaching and learning (academic) experiences of students with hearing impairments at university. In this way, I was able to discover the multiple perspectives of the participants from the standpoint of their unique contexts, backgrounds and experiences related to their particular type and degree of hearing impairment, and to their education. By focusing on participants' personal meanings, qualitative research 'gives voice' to people who have been historically silenced or marginalised (Brantlinger, Jimenez, Klinger, Pugach & Richardson, 2005:199).

**Epistemology** (How can we know?): Maykut and Morehouse (1994:3) argue that epistemological assumptions concern the origins of knowledge, attempting to understand the relationship between the 'knower' and 'the known'. One also has to consider the role that values play in one's understanding. Over time, there has been a shift away from 'hard knowledge' towards understanding and interpreting the lives of the research participants. This interpretivist (constructivist) paradigm emphasises that all human beings are engaged in the process of making sense of their (life) worlds and that humans continually interpret, create and give meaning to, define, justify and rationalise actions. There is also a definite logic – the methods of inquiry should ultimately lead to interpretation and to explication – clarifying the research topic by means of a 'thick description' and a 'thick explanation' (Henning *et al.*, 2004:142).

Maree (2007:59) explains that the ultimate aim of research which involves 'interpretation' is to offer a perspective of a situation and to analyse the situation under study in order to provide insight into the way in which a particular group of people make sense of their situation and of the phenomena they encounter, and provides the following assumptions:

- human life can only be understood from within;
- social life is a distinctively human product;
- the human mind is the purposive source of origin of meaning;
- human behaviour is affected by knowledge of the social world, and
- the social world does not 'exist' independently of human knowledge.

This interpretive (constructivist) paradigm assumes that reality is socially constructed, which implies that there is no single reality, but that each single event is interpreted through multiple realities. In this way, researchers do not 'find' knowledge but rather construct it; affirming that

social constructivism helps to inform interpretive or qualitative research (Merriam, 2009:9). As a case study researcher, I was able to use my experiences as a mother of a daughter with a profound hearing impairment, a lecturer, involvement in the disability sector but, more importantly, the contextual accounts of the participants to assist me in the construction of knowledge.

An interpretive (constructivist) framework was used for this inquiry, attempting to understand the academic experiences of university students with hearing impairment. Through interacting closely with the participants I was able to gain insight into their (life) worlds, appreciating and clarifying the meanings they ascribed to some of their daily experiences whilst studying at university and, as researcher, to interpret the meanings of such in order to improve our overall comprehension of the phenomenon being studied.

**Methodology:** This refers to the choices researchers make about cases to study, methods of data generation, forms of data transformation etc., in planning a research study. It specifies how the researcher may go about practically constructing knowledge and insight. The researcher who works from the interpretive (constructivist) paradigm prefers to use personal and interactive means and methods to generate data. Unstructured observation, open interviewing, idiographic descriptions and qualitative data transformation are all ways to capture 'insider' knowledge that is part of an interpretivist methodology (Henning *et al.*, 2004:20). In this study, qualitative methods, such as individual semi-structured interviews, were best suited to capture the real 'voice' of each participant.

Henning *et al.* (2004:3) also argue that the distinction between qualitative and quantitative studies lies in the quest for understanding an in-depth inquiry. In a qualitative study, the 'variables' are usually not controlled because it is exactly this freedom and natural development of action and representation that one wants to capture. The qualities, characteristics or properties of a phenomenon are examined for better understanding and explanation. Denzin and Lincoln (2000:8) refer to qualitative researchers striving to seek answers to questions that stress 'how' social experiences are created and also given meaning. Qualitative research allows for the studying of 'things' in their natural settings through the generating of data from the views of participants in how they make sense of the world. This is important as it reinstates 'people' at the centre of the research agenda (Muecke, 1997). Stone and Priestley (1996) and Stone (1999) argue that this is particularly important in disability research where, over decades, scientific research has perpetrated the marginalisation of people with disabilities.

Patton (1985:1) explains,:

[Qualitative research] is an effort to understand situations in their uniqueness as part of a particular context and the interactions there. This understanding is an end in itself, so that it is not attempting to predict what may happen in the future necessarily, but to understand the nature of that setting – what it means for participants to be in that setting, what their lives are like, what's going on for them, what their meanings are, what the world looks like in that particular setting – and in the analysis to be

able to communicate that faithfully to others who are interested in that setting. The analysis strives for depth of understanding.

Based on the assumptions stated above, qualitative research has certain basic characteristics (Creswell, 2009:175; Hatch, 2002; Marshall & Rossman, 2006) that distinguish it from other forms of research. The characteristics of qualitative research, as purported by Merriam (2009:13–16), can be summarised as –

- (1) Focus on meaning and understanding: In this study, the educational experiences of students with hearing impairment were listened to and interpreted in order to construct meaning.
- (2) Researcher as primary instrument: I, as qualitative researcher, was the primary instrument for data generation and data transformation in this study.
- (3) An inductive process: Use was made of inductive reasoning, moving from generating data to building concepts and/or theories.
- (4) Rich description: The interview questions in this study were asked in such a way as to elicit detailed responses, resulting in rich, ‘thick’ description.
- (5) The design of a qualitative study is emergent and flexible, responsive to changing conditions. In addition to ‘thick’ description, this study also provided, through deep analysis, a ‘thick’ explanation.

In my view as researcher, these fundamental characteristics and key features that distinguish what it means to proceed from a qualitative stance, fit well with this study.

Historically, research in the area of disabilities has been dominated by quantitative surveys and questionnaires that estimate and measure the functional limitations of people in their day-to-day lives (see section 2.3.2) (Finkelflugel, 1998; Holeman, 1993; Mitchell, 1999; Stone, 1999; Wirz, 1996). Disability scholars (Finkelstein, 1996; Oliver & Barnes, 1998; Shakespeare, Gillespie-Sells & Davies, 1996) argue that such research serves mainly to confirm disability as an individual deficit and that the growing usage of qualitative research methods is an attempt to explore the lived experiences of persons with disabilities through their direct involvement in order to effect real social change. The focus of qualitative research should be on “hearing their [research participants] voices” (Moswela & Mukhopadhyay, 2011:311). It was also my contention that purely quantitative methods were unlikely to elicit the thick, rich data necessary to address the proposed research purposes; hence, the qualitative research approach was used to study human action from the insiders’ perspective; understanding the individual’s point of view within their particular context. This research study was conducted in a natural setting, namely on a university campus, and the sample of students i.e. those with hearing impairment using the oral method of communication,

and their lecturers, was small (only 13 students with hearing impairments had disclosed their hearing impairment and their need for support at the disability unit).

In any research it is important to capture the individual's point of view. In quantitative research, the term 'subjects' or 'respondents' are often used to describe the people from whom the data or information is obtained. Denzin and Lincoln (2000:10) argue that quantitative researchers need to rely on more remote inferential empirical methods and materials and therefore struggle to capture their subject's perspectives. However, qualitative researchers are able to get closer to the perspective of the 'actors' through detailed or in-depth interviewing and observation. Merriam (2009:162) states that the term 'participant' infers inclusion and willingness to co-operate. As researcher, I chose to use this term as the single word 'participant' encapsulates adherence to issues of inclusion, ethics and embodies qualitative studies.

### **4.3 RESEARCH DESIGN, STRATEGY AND METHODOLOGY**

A research design, according to Denzin and Lincoln (2011:14), "situates researchers in the empirical world and connects them to specific sites, people, groups, institutions, and bodies of relevant interpretive material, including documents and archives", whereas a strategy of inquiry "refers to a bundle of skills, assumptions, and practices that researchers employ as they move from their paradigm to the empirical world" Denzin and Lincoln (2011:14). In this way, strategies of inquiry "put paradigms of interpretation into motion ... and connect the researcher to specific methods of collecting and analysing empirical materials" Denzin and Lincoln (2011:14). The design strategy employed in this inquiry was the case study.

According to Merriam (2009:51), a qualitative case study is an ideal design for understanding and interpreting educational phenomena. She goes on to explain that a case study research design is used to gain an in-depth understanding of the situation and meaning for those involved, and that these are intensive descriptions and analyses of a single unit or bounded system. The current study fits well Merriam's explanation because it sought to understand the academic experiences of university students with hearing impairments. More particularly, a descriptive case study design was used for this study as it helped to answer the questions of 'how' and 'why' (Yin, 2008:13) and allowed the participants' views to remain predominant whilst taking a holistic 'real-life' look at the way specific groups of people (students with hearing impairment and their lecturers) face their particular challenges in a specific context.

Merriam (2009:40) also argues that the single most defining characteristic of case study research lies in delimiting the object of the study, i.e. the notion of the case as a bounded integrated system. In this instance, the context of the case study was a university in the Western Cape and the boundaries (units of analysis) were registered students with hearing impairments, using the oral method of communication, lecturers teaching these particular students or past students with

hearing impairments, as well as a support staff member from the disability unit whose main job function is the support of students with disabilities. There was a definite 'boundedness' of the topic as the study was limited to those participants who were willing and able to share their experiences regarding the subject matter.

The case study can further be defined by its special features and can therefore be characterised as being particularistic (case studies that focus on a particular situation, event, programme or phenomenon), descriptive (the end product of a case is a rich, 'thick' description<sup>6</sup> of the phenomenon under study) or heuristic (the case study illuminates the reader's understanding of the phenomenon under study). 'Thick description' is a term from anthropology and means the complete, literal description of the entity being investigated (Merriam, 2009:43). Case studies in education generally focus on questions, issues and concerns broadly related to teaching and learning. The setting, delivery system, curriculum, student body and theoretical orientation may vary widely, but the general arena of education remains central to these studies (Merriam, 2009:51). The current study was descriptive in nature, describing the experiences of being a student with a hearing impairment in a 'hearing' university, i.e. an educational setting. Aspects investigated included support provided by the university, the accessibility of the curriculum, barriers to learning, coping strategies and best practice as well as lecturers' experiences of teaching students with hearing impairments.

The research methodology used in this study was qualitative, moving away from the historical fact that previous research in the area of disability was dominated by quantitative surveys and questionnaires, which mainly served to estimate and measure functional limitations, as well as focusing on disability as an individual deficit (Andrews *et al.*, 2006; Finkelstein, 1996; Johnstone, 1998:122;). As Ritchie and Lewis (2003:47) explain, "A good qualitative research study design is one which has a clearly defined purpose, in which there is coherence between the research questions and the methods or approaches proposed, and which generate data which is valid and reliable". In the current study, the purpose was to explore, in detail, the perceptions and experiences of students (cases) with hearing impairments regarding their academic encounters as university students. This led to the formulation of a main research question and a number of sub-questions, all of which were interrelated, with the end goal of providing a rich and full understanding.

Constructivist grounded theory (Charmaz, 2000; 2006) was utilised as an approach to the process of generating and transforming the data, as well as the construction of theory. The rationale for using grounded theory method is discussed later in this chapter under section 4.9.

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<sup>6</sup> As a researcher, using a descriptive case study design, I wanted to name the university so as to provide a much more detailed context, but was prohibited from doing so due to ethical clearance conditions.

## 4.4 THE RESEARCH SAMPLE

There are two basic types of sampling, namely probability and non-probability. Usually, when a researcher makes use of probability sampling, it is with the aim of generalising the results from the sample to the population. Since this is not an aim of qualitative research, probability sampling is not at all applicable. For qualitative studies, the most appropriate sampling strategy is non-probabilistic, of which purposive or purposeful sampling is most common (Marshall & Rossman, 2006:70).

### 4.4.1 Selection of participants

A purposeful sampling procedure, which is typical of case study methodology (Patton, 1985:46; Silverman, 2005:129), was used to select the sample for the current study. Information-rich cases (students) were selected to allow me, through their lived experiences, to construct meaning using an interpretive (constructivist) research paradigm. The criteria for inclusion of students in the study were that

- (a) the participants had to have hearing impairments, regardless of the degree of hearing impairment or the age of onset;
- (b) they needed to be registered students at the selected university (either undergraduate or postgraduate); and
- (c) they needed to use spoken language (either English or Afrikaans as their home language) rather than Sign Language.

One university within South Africa was chosen as the context for the cases to be studied for the following reasons:

- HEMIS data from the DoE (SA, DoE, 2008) indicated that the selected university had forty-three students with disclosed hearing impairments in 2008 (from 15 in 2007) and was therefore selected on account of this high number of enrolments.
- In this study, the group of thirteen students with hearing impairments included both undergraduate and postgraduate students.
- This particular university has been supporting students with hearing impairment for the past few years and I therefore assumed that they had gained knowledge and experience in supporting them.
- Only one university was selected as a single case, rather than multiple universities as multiple cases, as each institution brings with it its own identity, culture, historical context and varying support for students with disabilities, particularly students with hearing impairments.

The selection of the various types of participants will be discussed according to the following three categories: students with hearing impairments, lecturers of students with hearing impairments, and support staff member of the disability unit.

#### **4.4.1.1 Students with hearing impairment**

Within the qualitative paradigm, the units (of analysis) within the case included all undergraduate and postgraduate registered students with hearing impairments at the university. This represented a non-probabilistic unique purposive sampling method, using the abovementioned selection criteria. Seven out of a possible thirteen students volunteered to participate in the study.

It is important to note that at first, with the permission of the university, I requested a list of students from the assistant registrar who had indicated 'other hearing disability' on their application forms, which yielded a list of thirty-one students. This was data captured on the HEMIS management information system of the university. After contacting these students via email, I learnt that many of them did not have any form of hearing impairment and that the data was mostly invalid. Thereafter I requested a list of students with a declared hearing impairment who had presented to the disability unit for academic and/or other support. This list yielded thirteen students with a known hearing impairment.

#### **4.4.1.2 Lecturers of students with hearing impairment**

Each student was requested to provide the details of at least two of his or her lecturers. This was also a form of purposive sampling as the lecturers were only selected if they were currently teaching or had previously taught a student with a hearing impairment. The lecturers included in the study were identified by each student with a hearing impairment based on the following criterion:

- Classes in which the students had disclosed their hearing impairment and felt they were receiving academic support and where the lecturer was attempting to cater for their specific academic needs using various teaching techniques. (Initially I thought about the students identifying classes in which they were just coping, struggling or receiving modest support, but then realised that there would be little to learn from these potential participants as they were not actually providing any reasonable accommodations.)

Of the seven students interviewed, only two were able to identify and provide the details of one lecturer each that met the criterion as mentioned above. I had hoped that the students would have identified many more lecturers, but realised during the interviews that, because many of them had not disclosed their disability or informed their lecturers of their hearing impairment, no academic support or other reasonable accommodations would have been employed. Their past or current lecturers would therefore not have been in a position to provide insights into answering the



research questions. Once faced with this dilemma, I decided to contact the disability unit to request a list of academic staff who had, in turn, been contacted by their office regarding the support of students with hearing impairments. The list provided contained the names of twelve lecturers (including the two identified by the students) of whom seven agreed to participate in the study.

#### **4.4.1.3 Support staff member: Disability unit**

One of the staff members at the disability unit was also included as a participant as she was able to provide comprehensive data on all the various types of support currently available to students with hearing impairment as well as her opinions about the challenges that are faced, both from a student with a disability perspective as well as from an institutional perspective. This participant was selected as her main job function was to support students with disabilities at the university; hence, no other staff members from the disability unit were included in the study. This participant also served as 'gatekeeper', providing the following data: the registered numbers of students with hearing impairment, those students with hearing impairment who had presented to the disability unit for support as well as the names of academic staff members with whom her office had been in contact regarding the support of students with hearing impairment who should participate in the study.

The way in which the data were generated for this case study is presented in the next section, after which the steps used to carry out the research will be discussed.

## **4.5 INFORMATION NEEDED TO CONDUCT THE STUDY**

This case study focused on seven students with hearing impairment, seven lecturers who was either currently teaching or who had previously taught a student with a hearing impairment at the university and one staff member from the disability unit.

This intention of the study was to analyse and describe the teaching and learning (academic) experiences of students with hearing impairment at the case study university. In seeking to achieve this goal, one main research question was posed, namely "How do students with a hearing impairment, using the oral method of communication, experience university?" as well as five research sub-questions. The information needed to answer these research questions was determined by the conceptual framework and fell into four categories:

- (a) Contextual: This information refers to the context within which the participants reside or work and it is information that describes the culture and environment of the setting (Bloomberg & Volpe, 2008:70). It was important to include this information, as the environment can often influence the way people behave. The following information was gathered about the university: history, vision, strategic objectives, institutional leaders and organisational

structure, support systems, staff development and training, associations and organisations, rules, policies and procedures. This contextual information was generated through a review of relevant internal documents and reported information.

- (b) Demographic: This information refers to participant profile information that describes who the participants in the study are – where they come from, some of their history and/or background, education and personal information such as age, gender and nature of the hearing impairment. As individual perceptions often vary, this type of demographic data were generated to help explain the reasons for these differing perceptions. This information was generated through a detailed questionnaire, which each student participant completed (see Table 4.1).
- (c) Perceptual: This type of information refers to particular participants' perceptions related to a specific subject of inquiry. The perceptions of students with hearing impairment of their overall academic learning experiences and lecturers' experiences of teaching these students were investigated in this study.
- (d) Theoretical: This included information searched and generated from the various literature sources to assess what is already known in the field and to identify gaps in the literature. An ongoing review of the literature around defining 'disability', the various models related to disability, the legislative and educational environments, understanding hearing impairment, academic support for students with disabilities, or more particularly, with hearing impairment, the concept of self-identity as well as the use of assistive technologies was conducted. As Silverman (2005:106) points out, theory (statements about how things are connected) only becomes worthwhile when it is used to explain something and without theory, research is impossibly narrow. Silverman also purports that research questions are inescapably informed through theory and that we need social theories to help us address even basic issues in social research. According to Henning *et al.* (2004:14), perspectives are interrelated sets of assumptions, concepts and propositions that constitute a particular view of the world. In this study, it was important to gain insight into the university experiences of students with hearing impairment. The theoretical framework used to analyse the data was Bronfenbrenner's systems theory of human development, using his bio-ecological perspective and model (Bronfenbrenner, 1992; Bronfenbrenner & Morris, 1998) as well as the social model of disability.

#### **4.6 STEPS IN RESEARCH PROCESS**

The following list summarises the steps used to carry out this research.

1. Before the actual generation of data, a selected review of the literature was done to study the contributions of other researchers and writers in the broad areas of disability models, disabilities and higher education, academic support for students with hearing impairment as

well as understanding hearing impairment. This brief review helped to inform the research questions and the design of the research instruments.

2. Following the proposal defence and some changes recommended by the Faculty of Education's research committee, I acquired approval from said committee to proceed with the research. The university's ethical approval process involved outlining all procedures and processes needed to ensure adherence to standards put forth for the study of human participants, including confidentiality, anonymity and informed consent.
3. I contacted the key informant during March 2009, a selected staff member from the disability unit, and conducted a semi-structured interview at an agreed date and time. This interview was held first as the participant would serve as 'gate-keeper' regarding information about and access to the rest of the participants. The information generated during this interview also informed the design of the survey questionnaire and interview guides for the students with hearing impairment and their lecturers. At my request, the participant contacted the registrar and requested a list of all students who had indicated 'deaf' on the institutional registration database. A list of the names and contact details of thirty-one students who had indicated 'other hearing impairment' (list 1) on their registration forms and thirteen students who had indicated 'deaf' (list 2) was received. Relevant documentation, e.g. institutional policies and procedures, guidelines for teaching students with disabilities was also provided by this research participant.
4. All of the potential research participants from both lists 1 and 2 were contacted via email and SMS/text message (on three occasions) to invite them to participate in the study. Six students out of a total thirteen students from list 1 agreed to participate. Of the thirty-one students on list 2, eleven students replied. Five students replied indicating that they did not have a hearing impairment and another five students replied explaining that they had mild hearing impairment and did not make use of hearing aid/s or cochlear implant/s. One student agreed to participate in the study. Due to the unreliability of the registration data, especially provided in list 1 and after discussions with both my supervisors as well as with the staff member from the disability unit, it was decided to rather work with the list of students with hearing impairment, who had been in contact with the disability unit, namely those on list 3. These were students who had severe to profound hearing impairment and made use of hearing devices. This list provided the details of thirteen students, some of whom had already agreed to participate, from either list 1 or list 2. The remainder of the potential research participants from list 3 were contacted by both SMS and email. The seven students with hearing impairment who agreed to participate were sent a further email requesting an initial meeting during which I explained the research process, went through the consent form

very carefully with each participant and requested their signature and handed out the questionnaire for completion before the actual interview.

5. At our scheduled second meeting during the period 15 April to 6 May 2009, individual semi-structured interviews were conducted with these seven students with hearing impairment. The students also submitted their completed questionnaires as well as copies of other documentation requested, e.g. audiograms, communiqués from audiologists, etc. The students were also given a form and requested to provide the names and contact details (if possible) of at least two lecturers who they felt had supported them in some way, e.g. used specific teaching strategies, alternate assessment strategies, etcetera.
6. As only two of the seven students were able to identify and provide the contact details of one lecturer each that met the specified criteria (point 5 above), I decided to contact the disability unit to request a list of academic staff who had been in contact with them regarding the support for students with hearing impairment. The list provided contained the names of twelve lecturers (including the two identified by the students) of whom seven agreed to participate in the study. Individual semi-structured interviews were conducted with these participants.
7. The data generated by means of the interviews were transformed and viewed through two participant lenses, one being the students with hearing impairment and the other the lecturers.

#### **4.7 DATA GENERATION METHODS**

Although Merriam (2009) generally uses the term ‘collection’, in terms of the qualitative paradigm, she also clarifies that data is not ‘out there’ to be collected or gathered. She argues that one plans and then generates data to answer the research questions. I agree with her rationale and have thus used the term ‘data generation’ rather than ‘data collection or gathering’. The sources of evidence most commonly used in doing case studies include: interviews, observation and documents (Henning *et al.*, 2004:99; Merriam, 2009:85). Data in this investigation were generated from two main sources of evidence, namely interviews in order to establish credibility, consistency and transferability of the case study evidence as well as documentation (public records, personal and researcher-generated documents). Data generated from the questionnaire was used to support the interview data.

Interviews allow for the generation of data through conversations – talking and listening to people. In addition to data generation, interviewing facilitates the gaining of knowledge from individuals. Kvale (2007:14) regard interviews as “... an interchange of views between two or more people on a topic of mutual interest, sees the centrality of human interaction for knowledge production, and

emphasises the social situatedness of research data”. Cohen *et al.* (2007:356) take this a step further and explain “... the interview is not simply concerned with collecting data about life: it is part of life itself, its human embeddedness is inescapable”. The use of interviews was thus seen as appropriate for this study, allowing for the generation of data through conversations. Interviews can either be structured, semi-structured or unstructured. On the one end of the continuum of interviewing is the ‘structured’ interview, which is standardised and quite rigid, such as the same questions being asked in the same order. On the opposite end is the ‘unstructured’ interview, which is non-directed and very flexible, and somewhere in-between one finds the ‘semi-structured’ interview. This type of interview is non-standardised and is frequently used in qualitative research. Although an interview guide is used, additional questions can be asked and the order in which they are asked can also change. Use was made of this form of interview in this study as the format allowed me, as described by Merriam (2009:90), “to respond to the situation at hand, to the emerging worldview of the respondent [participant], and to new ideas on the topic” affording me the opportunity of attempting to make meaning of the experiences expressed by the participants.

The qualitative data in this study, in line with the social constructivist paradigm which emphasises the socially constructed nature of reality and trying to uncover the deeper meaning and significance of human behaviour and experience (Denzin & Lincoln, 2005), was thus generated through the use of individual semi-structured interviews with students with hearing impairment, lecturers and a support staff member from the disability unit, in this way gaining a rich and complex understanding of issues at hand. Three separate interview guides were used: one for each category of participant. Contextually similar questions and probes were put to the participants to encourage conversation. In addition to interview data from these three categories of role players, the study also included data generated by means of document analysis. The various phases of the research are presented in the next section.

#### **4.7.1 Phase I: Survey (questionnaire) (March and April 2009)**

The questionnaire utilised was an adapted version of the instrument designed by Quigley *et al.* (1968), which was used to determine the extent to which persons with hearing impairment were successful in attending regular colleges and universities in the United States. The following changes were made to the original questionnaire: the terminology was ‘modernised’, only questions applicable to this research study were included and any superfluous questions were deleted. Some of the questions were also modified for clarity and readability. The adapted questionnaire was designed to obtain information from the students with hearing impairment regarding their family background, hearing impairment, communication methods, schooling, and university experience. This data was used to supplement and support the interview data to provide context to some responses and also to provide a more holistic overview of each participant.

Thirteen students were contacted as potential research participants both by SMS and email. Of this total, the seven who agreed to participate were sent a second email thanking them for their willingness to participate and requesting an initial meeting to establish a good working relationship and to build trust. Each student was met with individually. At this initial meeting, the following took place: introductions, background to the study, explanation of the purpose of the research, request to complete the questionnaire and to submit at next meeting as well as the finalisation of a date for the follow-up meeting when the actual interview would take place. The questionnaire was designed to generate profile data as well as information regarding the student's family, educational background and experience, university experience, communication strategies and coping strategies. The questionnaire appears as Appendix C.

Using a survey has several characteristics and several advantages, namely: it provides both descriptive and explanatory information, it gathers standardised information (i.e. using the same instruments and questions for all participants), and it is relatively unobtrusive and easy to administer (Cohen *et al.*, 2007:206). The questionnaire that was developed contained both closed and open-ended questions, the latter serving to tap into the personal experiences of the participants. As surveys are unable to provide the required rich, thick descriptions of the 'lived' experience of the students with hearing impairments, it was necessary to also make use of semi-structured interviews. The survey served as a useful tool which complemented the primary data generation method, namely interviewing. The intention was not to produce qualitative data through the use of the questionnaire, but to provide a deep contextual background on each participant. It also assisted me to compile the interview guides.

#### **4.7.2 Phase II: Interviews (15 April to 20 August 2009)**

The interview was selected as the primary method for generating data in this study as this would elicit the rich, thick descriptions required. According to Charmaz (2006:25), interviewing is a useful data generation method, permitting an in-depth exploration of a particular topic or experience. Henning *et al.* (2004:78) also argue that interviews are "communicative events aimed at finding out what participants think, know and feel" rather than simply a mechanism to gather data. Further, the interview gives the researcher an opportunity to clarify statements and probe for additional information. Kvale (2007:11) also explains that the interview seeks to understand the meaning of central themes of one's 'lived world'. Interviews enable participants to discuss their interpretations of the world in which they live, and to express how they regard situations from their own point of view, allowing the researcher to "see the world through the eyes of the participant" (Maree, 2007:87). For this study, it was important to use a technique that would provide a valid way to create data through interacting with the participants, i.e. talking and listening to them and attempting to capture the true meaning of their experience, albeit through the interpretation and construction of myself as researcher. The interview process was started by making use of one or

two grand tour questions (McCaslin & Scott, 2003:447) regarding the participant's experiences at university, as a student with a hearing impairment, with these open ended questions allowing the participants to set the direction of the interview, after which I returned to the pre-planned questions.

There are a number of advantages of using interviewing as a technique. One of the more important benefits of using interviews is that –

- they allow the researcher to understand the meanings that everyday activities hold for people;
- interviews are useful when participants cannot be observed directly;
- participants can provide historical information; and
- interviewing allows the researcher control over the line and type of questioning.

Although interviews have certain strengths, there are also some limitations. Some of these include:

- not all people are equally cooperative, articulate or perceptive;
- interviewer flexibility in sequencing and wording questions can result in substantially different responses, thus reducing the comparability of responses;
- important and salient topics may be inadvertently omitted;
- the researcher's presence may bias responses; and
- participants may have good reason not to be truthful at times (Creswell, 2009:151; Marshall & Rossman, 2006:101–103).

In this study, it was important to be sensitive to the communication needs of the students with hearing impairment. The following accommodations were provided:

- an initial meeting was arranged so that, at the actual interview, the students could feel more comfortable to speak with and open up to me;
- the interviews took place in a quiet environment with good lighting (for lip-reading);
- I tried to speak clearly (good pronunciation) and not too softly;
- the students were provided with written copies of the questions to be asked; and
- I made use of gestures and facial expressions and did not cover my face (lips) with my hands at any time.

The interviews in this study covered a number of topics in order to be able to generate sufficiently rich data to analyse and describe the teaching and learning (academic) experiences of students with hearing impairment at the case study university. Three perspectives were included, namely the student participants with hearing impairment, lecturers who had experience teaching at least one student with hearing impairment, as well as a staff member from student support services, i.e. the disability unit. Semi-structured individual interviews were conducted with all three 'groups'

between April and August 2009. The raw data were generated using an interview guide containing thematic research questions (Kvale, 2007:59). By doing it this way, topics and issues to be covered were specified in advance, in outline form, allowing me to decide on the sequence and working of questions during the course of the interview, thus allowing for a more conversational style of discussion.

#### **4.7.2.1 Interview schedule of questions**

With the guidance of the literature and my supervisors, I used the study's research sub-questions as a framework from which to develop the interview questions: one for each category of participants. The interview schedules focused on the following topics (per 'group'):

- a) Students with hearing impairment: support services and assistive technology, curriculum accessibility, barriers experienced, coping strategies, critical success factors, and views on inclusion.
- b) Lecturers of students with hearing impairment: curriculum accessibility, assistive technology, support services, staff development, and views on inclusion.
- c) Staff member from the disability unit: support services, policies, assistive technology and views on inclusion.

Two of my colleagues, both of whom hold PhD degrees and who work in the field of disabilities, were requested to review the three interview guides and to provide me with some feedback. This is in line with Merriam's (2009:160) stance that utilising a qualitative research design allows ones study to be 'emergent and flexible'. Some minor suggestions regarding language and the removal of one question were made. After incorporating their feedback as well as the comments from my supervisors, and after submitting the final version for approval, I began with the first scheduled interview. The final interview schedules are included as Appendices D, E and F.

#### **4.7.2.2 Interview process**

Prospective participants were sent individual emails describing the purpose of the study, inviting their participation and requesting a convenient date and time to meet. Confirmation emails were sent to those individuals who agreed to participate. The (semi-structured) interviews took place between April and August 2009. Before the interviews commenced, the interviewees were requested to sign a letter of consent (refer to section 4.13 on ethical clearance and Appendices A and B) required for participation in the study. Below are further details regarding the interview process for each participant category.

##### **4.7.2.2.1 Interview with a support staff member from the disability unit**

I decided to start the data generation process by interviewing a selected member of staff from the disability unit. The main reason for this was to investigate the existing types of institutional and



other academic support provided to students with hearing impairment which would then also inform discussions with both the students and lecturers. Other information was also generated, e.g. policy documents (persons with disabilities, teaching and learning, assessment, etc.) and the contact details of currently registered students with hearing impairments. This interview was conducted in English, audio recorded and transcribed during April 2009.

#### 4.7.2.2.2 Interviews with students with hearing impairment

The second category of participants to be interviewed was the students with hearing impairment. Of the thirteen students who had disclosed their hearing impairment to the disability unit between 2007 and 2009, only seven students agreed to participate. As these students made use of the oral/aural method of communication, i.e. spoken language, the interviews were recorded using a digital audio recorder. All of the participants were comfortable with English, had a good command of the language and agreed that the interview could be conducted in English. The interviews took place between April and May 2009. Participants were each provided with a copy of the interview guide to allow them to read the questions and probes to overcome any potential communication problems. Each of the audio-recorded interviews were transcribed and, if the participant answered a question mostly in English, but with a few Afrikaans words occasionally added in, then those specific words were first translated into English, and then transcribed by the researcher for ease of data transformation as English is my first language. An attempt was made to have the transcriptions verified by emailing the transcribed interviews to each respective participant and requesting them to verify the text. Only one student replied positively, possibly due to the lateness of my request for feedback. She agreed with the transcription content and no changes were suggested. Table 4.1 below provides some biographical data for each of the student participants.

**Table 4.1: Biographical data for each student participant**

Participant	Age	Gender	Year of study	Onset	Degree of hearing impairment	Assistive listening devices	First language	Residence	Population
Student 1	23	Male	3 <sup>rd</sup>	Birth	Profound (L & R)	Cochlear implant (R)	English	University residence	White
Student 2	21	Female	3 <sup>rd</sup>	Birth	Moderate (L & R)	None	Afrikaans	Private	White
Student 3	24	Male	3 <sup>rd</sup>	Birth	Profound (R)	BTE* Hearing aid (R)	Afrikaans	Private	White
Student 4	24	Female	4 <sup>th</sup>	L = 4 yr R = 8 yr	Profound (L & R)	Cochlear implant (R)	English	University residence	White
Student 5	20	Male	1 <sup>st</sup>	Birth	Moderate	BTE	Afrikaans	University	White

					(L & R)	Hearing aid (R)		residence	
Student 6	20	Male	1 <sup>st</sup>	Birth	Severe (L & R)	BA** Hearing aid (L & R)	Afrikaans	Private	White
Student 7	19	Female	1 <sup>st</sup>	L = 2 yr R = 10 yr	Profound (L & R)	Cochlear implant (R)	English	University residence	White

\*L = left and R = right

\*\*Behind-the-ear

\*\*\*Bone-anchored

#### 4.7.2.2.3 Interviews with the lecturers

The third category of participants to be interviewed was the lecturers of the students with hearing impairment. Each interviewed student was requested to identify at least two lecturers who could be included in the study based on the following criteria:

- a class (subject) in which the lecturer was aware of the student's hearing impairment, and
- situations where the student felt that the lecturer was accommodating his/her needs in some way.

The interviews were recorded using a digital audio recorder. As Afrikaans was the home language of three of the participants, the interview guide was also translated into Afrikaans but the interview questions, with their permission, were asked in English and they answered mostly in English. Where any responses to specific questions were provided in Afrikaans, these were translated into English and put between brackets during the transcription of the recorded data. Each of the audio recorded interviews was transcribed.

**Table 4.2: Lecturers of students with hearing impairment interviewed**

Participant	Gender	Faculty	First language	Population
Lecturer 1	Female	Engineering	English	White
Lecturer 2	Male	Health Sciences	Afrikaans	White
Lecturer 3	Male	Health Sciences	English	White
Lecturer 4	Female	Commerce	English	Coloured
Lecturer 5	Male	Health Sciences	Afrikaans	White
Lecturer 6	Female	Health Sciences	Afrikaans	White

Lecturer 7: An additional interview was also conducted with an academic from the university whose research is located in the field of disabilities and who had been instrumental in supporting a student with a hearing impairment a few years previously. I have not included this participant in the table to ensure anonymity. Providing details concerning gender, faculty and language could compromise this.

### 4.7.3 Phase III: Educational artefacts as documentation

The term 'document' may be viewed as an umbrella term which refers to a wide range of written, visual, digital and other physical material relevant to the study, having been in existence prior to the current research (Merriam, 2009:139–140). Marshall and Rossman (2006:107) note that the reviewing of documents (as an unobtrusive method) provides some knowledge regarding the history and context surrounding a specific setting and that the analysis of documents supplement other data generation methods, e.g. interviewing and observation.

With the permission of the participants and the university, documentation used in this study included the following:

- administrative documents, e.g. student progress reports and other internal records, e.g. audiograms, medical reports;
- university policies, e.g. students with disabilities, teaching and learning, assessment;
- guidelines for lecturers;
- guidelines for students with disabilities; and
- newspaper clippings and other articles appearing in the mass media or in community newsletters related to hearing impairment.

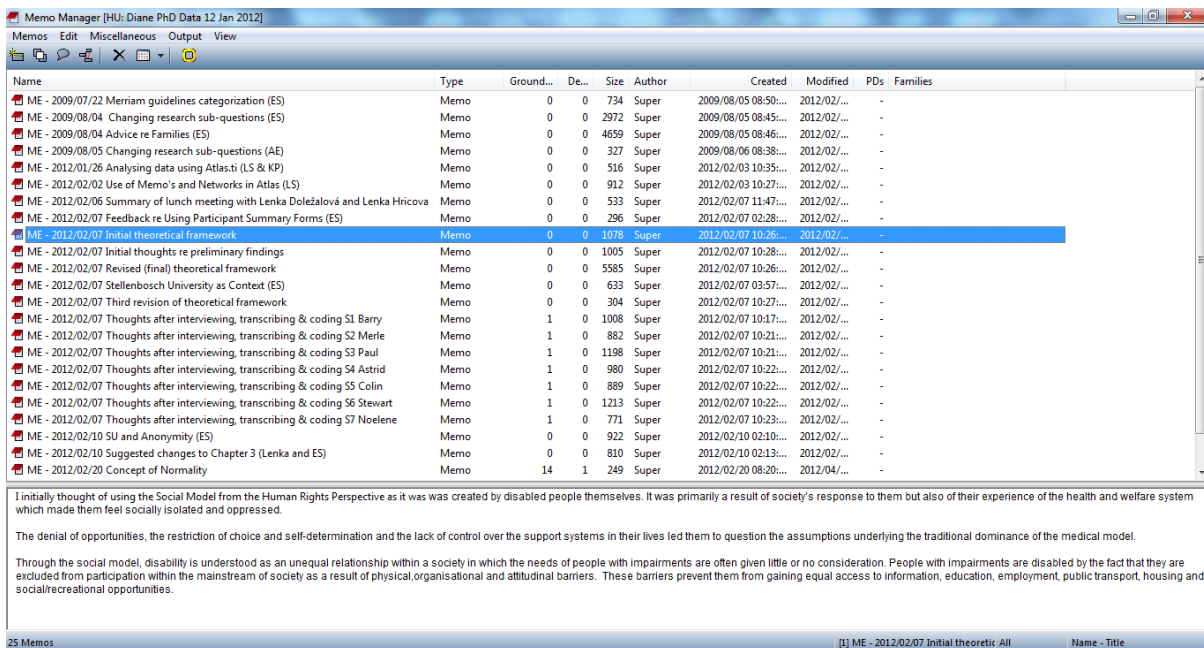
Archival records, taking the form of computer files and records were also included in the study as supportive data. The following archival records were accessed:

- lists of names and contact details of registered undergraduate and postgraduate students with hearing impairment (provided by the disability unit) who had reported to the disability unit for support; and
- personal records of the student participants, e.g. audiograms to verify hearing impairment and assistive devices and/or technologies being utilised, etc.

The primary data for the study, however, were generated by means of semi-structured individual interviews (refer to Appendix G).

I also made use of field notes and memos during the research process. For the purpose of this study, field notes included any observations noted during interviewing, discussions with experts in the field as well as any additional information bearing relevance to the study, allowing me the opportunity to gain a clear view of my thoughts. Memos were also captured in ATLAS.ti during the data coding and data transformation phases and these contain descriptions of my reflections regarding conversations, interviews, moments of confusion, intuitions and the stimulation of new ideas during the study. An example of my thoughts regarding the initial theoretical framework is

provided. The screenshot below (see Figure 4.1) also shows the extensive use of memos in this study.



**Figure 4.1<sup>7</sup>: Example memo**

There are, however, some limitations in using a particular source of data. According to Merriam (2009:54), there are three main limitations:

- the source may provide unrepresentative samples;
- the information needs to be provided in a useable form; and
- the authenticity and accuracy of the sources have to be determined.

For this study, all of the abovementioned potential limitations were overcome as I was able to obtain documentary evidence for all the participants, the documents were easily useable and authenticity and accuracy were proven.

In summary, various methods of data generation were used in this study, which exhibits the strength of the descriptive case.

#### **4.8 METHODS FOR DATA TRANSFORMATION AND SYNTHESIS**

Grounded theory methods emerged from sociologists Glaser and Strauss's (1967) successful collaboration during their studies of 'dying in hospitals'. Their first book *The discovery of grounded theory* (1967) explains their strategies and argues for developing theories from research grounded in data. Since then the methodology has been refined and developed by many other interpretive

<sup>7</sup> The use of screenshots was included in the text to make the data accessible at the point where the illustration is being made. Furthermore, as few studies make use of ATLAS.ti for data analysis, this is one way of depicting the use of the software (for developmental purposes), instead of the reader having to constantly refer to the appendices.

scholars including Charmaz (2000; 2006), Corbin and Strauss (1990), Glaser (1978; 1992; 1998), Strauss and Corbin (1990; 1994; 1998). Simply stated, grounded theorists “theorise reality according to a set of empirically organised categories” (Henning, 1995:115), with the emergent theories therefore being grounded in the researcher’s own theoretical position and knowledge. There are, however, two extremes in practice, namely the objectivist and the constructivist versions. In this study, use was made of the constructivist grounded approach, i.e. “seeing the data as created from the shared experiences of researcher and participants and the researcher’s relationships with the participants” (Charmaz, 2000:677), which “entails the relativism of multiple social realities, recognises the mutual creation of knowledge by the viewer and the viewed and aims toward interpretive understanding of subjects’ meanings” (Charmaz, 2000:420). Constructivist grounded theory assumes that neither data nor theories are discovered, but rather that these are constructed by the researcher as a result of his or her interactions with the field and the participants. In this way, data is co-constructed and “filtered” through the chosen theoretical framework as well as my perspectives and values as primary research instrument.

Tesch (1990) identified some principles appropriate for most types of qualitative research analysis which I used as a guide. The analysis process, which began soon after the data generation practice was initiated, followed certain steps:

- looking for similarities, differences, categories, themes, concepts and ideas;
- the data transformation beginning with reading and then dividing the data into smaller more meaningful units (codes);
- the data segments or codes being organised into a system that was predominantly derived from the data, using an inductive analytical approach;
- use being made of the constant comparative method to build and refine categories, to define conceptual similarities and to discover patterns;
- the developing categories being quite flexible and open to modification at times during the data transformation process;
- all of this being done in such a way as to truly reflect the perceptions of the research participants; and
- finally, the data transformation process resulting in a kind of higher-order synthesis in the form of a descriptive picture and the emergence of substantive themes.

Using Merriam’s (2009:175) point of view that qualitative data transformation is inductive and comparative, I made use of a grounded theory method when transforming the data. Charmaz (2000:9), explains that “Like any container into which different content can be poured, researchers can use basic grounded theory guidelines (or method) such as coding, memo writing and sampling for theory development, and comparative methods are, in many ways, neutral...I view GTM as a set of principles and practices, not as prescriptions or packages...GTM’s can complement other

approaches to qualitative data analysis, rather than stand in opposition to them”. Henning (2004:6) similarly talks about grounded theory analysis “...see data and analysis as created from the shared experiences of researcher and participants.” The use of grounded theory method will be further expounded upon in the following sections on data reduction, data display, data consolidation and interpretation.

#### **4.9 DATA REDUCTION**

The challenge throughout data generation and transformation is to make sense of large amounts of data, to reduce the volume of information, to identify significant patterns and to construct a theoretical framework. Qualitative coding, the process of defining what the data are about, is the initial analytical step. Miles and Huberman (1994:42) also suggest that careful data display is an important element of data reduction and selection. Data reduction therefore begins with coding. Charmaz (2006:43) explains that coding means naming segments of data with a label that simultaneously categorises, summarises and accounts for each piece of data. Strauss and Corbin (1990:57) define coding as “representing the operations by which data is broken down, conceptualised and put back together in new ways. It is the central process from which theory is built from data.”

Various authors such as Merriam (1998), Merriam (2009) and Strauss and Corbin (1990) describe the coding process (in grounded theory) in terms of the following three steps:

- The first step is concerned with open coding, which is the process of breaking down and conceptualising the data. Each separate idea in the data is given a label and similar ideas are named with the same label.
- After initial coding, the codes are collapsed into groups of concepts with similar traits which are called categories, and then one continues with axial coding where the data is reassembled to build major categories or themes.
- The third step is selective coding, which is coding for the main phenomenon, the core category, i.e. the researcher uncovers the essence of the study.

In the current study, a codebook was developed during this process. The code book indicates the code, a description of the code and an example of a quote from a participant (refer to Appendix H). At the end of the coding process, the codebook was refined to iron out any inconsistencies. Figure 4.2 below is an excerpt from the code book. The code book functions as a “frame or boundary that the analyst constructs in order to systematically map the informational terrain of the text” (MacQueen, McLellan, Kay & Milstein, 1999:33).

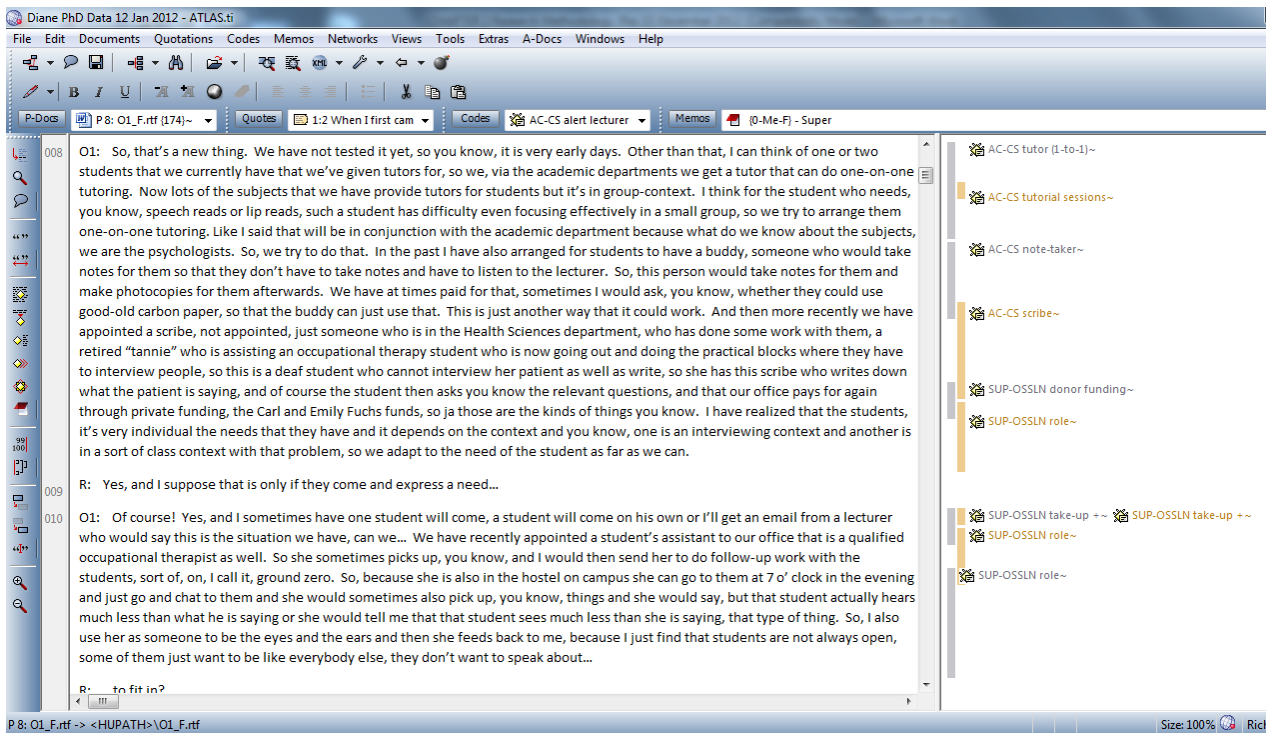
## CODEBOOK

CODE	DESCRIPTION	EXAMPLE (QUOTATION FROM TRANSCRIPT)
AC-coping strategy - alert lecturer	The student with a hearing loss would alert the lecturer to him/her not hearing, but by referring to the other students in the class	No, I wouldn't have a problem with saying it, but I would rather put it differently and say generally you talk very soft to the class and maybe the people at the back can't hear properly and they'll say okay.
AC-coping strategy - concentration	Students need to concentrate in class i.e. focus their undivided attention on what the lecturer is saying	I would just try and concentrate more, yes, but it was for short periods.
AC-coping strategy - consult lecturer	Students consult one-on-one with the lecturer to clarify what they missed (hearing) in class or to solve other problems	What helped me was to go with the professor after the lecture, to tell them that the professor, he tried to help, and ask how he can help me.
AC-coping strategy - declare disability	Students with hearing loss declare their disability to their lecturers and/or to their peers to elicit support	The other day in psychology there was a lecturer who was walking up and down all the time and I couldn't lip read, so I told him of my disability.
AC-coping strategy - e-notes	Students with hearing loss rely especially on the PowerPoint slides presented in class which they access via WebCT, (either before or after class)	So I really do rely on the PowerPoint notes that they have on WebCT as it explains the stuff to you.
AC-coping strategy - extended programme	Some students with a hearing loss register for an extended (prolonged) degree programme e.g. 5 years instead of 3	That is a programme where you don't take all the subjects that you require for your degree immediately, you take the subjects they offer in the programme and then you add an additional two subjects. I have taken an extra subject as I feel I can handle it.
AC-coping strategy - hearing aid/s	Hearing instruments assist students with a hearing loss to be able to hear the lecturer's voice during lectures	Quite a big impact, the technology in the hearing aid incredible, the background noise is totally filtered out. It picks up just enough of the lecturer's voice enough for me to be comfortable to hear what she is saying and not to have to concentrate on how to hear what she is saying. It is almost like you don't have to stretch yourself to hear what she is saying. It is easier.
AC-coping strategy - interact with lecturer	Students interact directly with the lecturer to ensure they know what is being said in class or to understand the work	Well I will work with the professor
AC-coping strategy - lip-reading	Students rely on lip-reading to assist them to follow what is being said in class	Yes, usually if people speak clearly or pronounce the word clearly I can, I tend to lip read as well. Yes, I do that.
AC-coping strategy - listening skills	Students with a hearing loss rely on their listening skills during lectures (and also after lectures to know what to do for e.g. assignments)	Yes, I can't dose off or anything, because also I conceive information better by hearing it and I remember it better. It is good for me to have it on paper, but it is better, I will recall the things better that I heard than that that I read.

**Figure 4.2: Code book**

Similarly, as Charmaz (2006:46) explains, grounded theory coding consists of at least two main phases: an initial phase, that involves naming each word, line or segment of data, followed by a focused, selective phase that uses the most significant or frequent initial codes to sort, synthesise, integrate and organise large amounts of data. A third step involves theoretical coding – a sophisticated level where the theoretical codes specify possible relationships between categories developed during focused coding. All three steps were followed during the current study. Memos were also used throughout the data transformation process (refer to Figure 4.1). Punch (1998:206–208) explains that memos assist the researcher to think, to make decisions or to interpret while transforming the data.

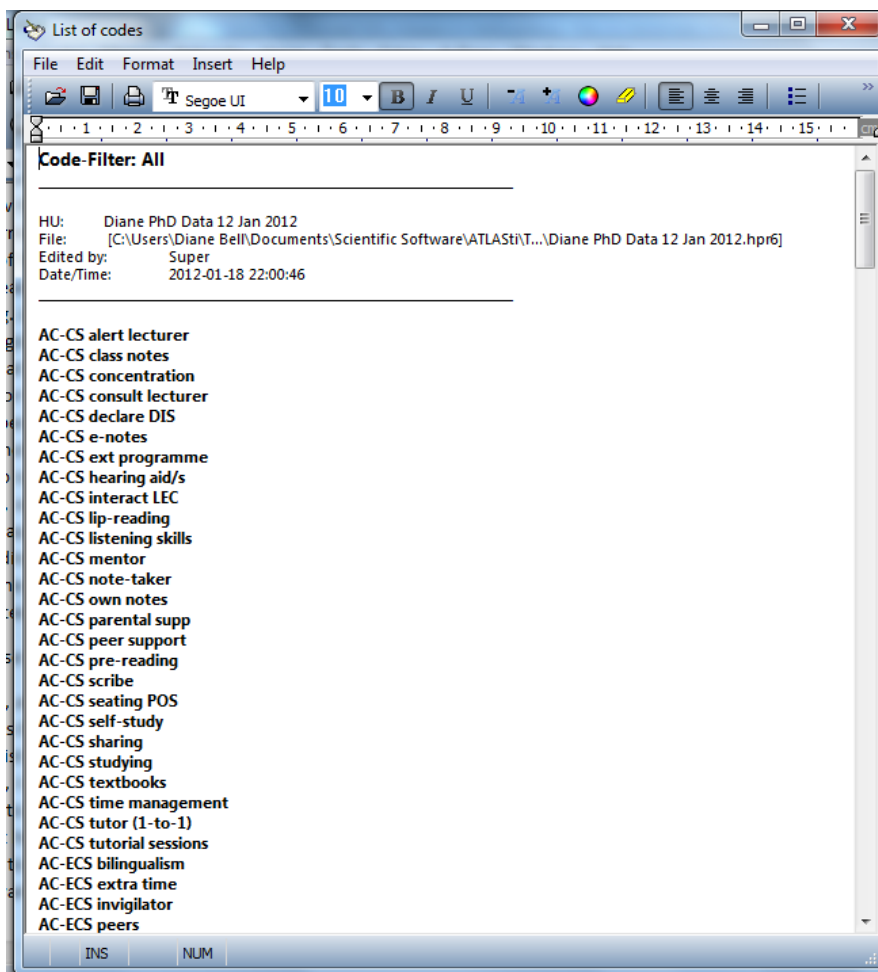
For the data transformation I exploited the new possibilities offered by ATLAS.ti (version 6), a computer-aided qualitative data analysis software (CAQDAS) package. ATLAS.ti facilitates activities involved in text analysis and interpretation, especially selecting, coding, annotating and comparing noteworthy segments. The software renders a comprehensive overview of a research project, which is called the hermeneutic unit (HU), and it facilitates immediate search and retrieval functions. The programme also has a network-building feature, which allows one to visually connect selected texts, memos and codes by means of diagrams. Using the software, I worked with all the interview transcripts, called primary documents, in ATLAS.ti, highlighted various text segments (referred to as 'quotations' in ATLAS.ti), which yielded labels (called 'codes' in the software) and then grouped the codes into code clusters (called 'code families' in ATLAS.ti) and later formulated themes. Figure 4.3 serves as an example of the initial coding process.



**Figure 4.3: Identifying data by means of coding**

After I had completed the first round of coding, I printed out a code list (two hundred and forty-five codes, in alphabetical order), and working manually, checked for duplications, renamed codes, combined and deleted codes. Figure 4.4 is the first page of the "raw" codes before I started sorting them into categories.





**Figure 4.4: 'Raw' codes**

After the codes had been refined and finalised I created a Word document and copied and pasted the research questions and the codes into the document. I then proceeded to find links between various codes in order to formulate code families or categories and themes. Figure 4.5 is an example of this manual process. Afterwards I went back to ATLAS.ti and created the families within the software.

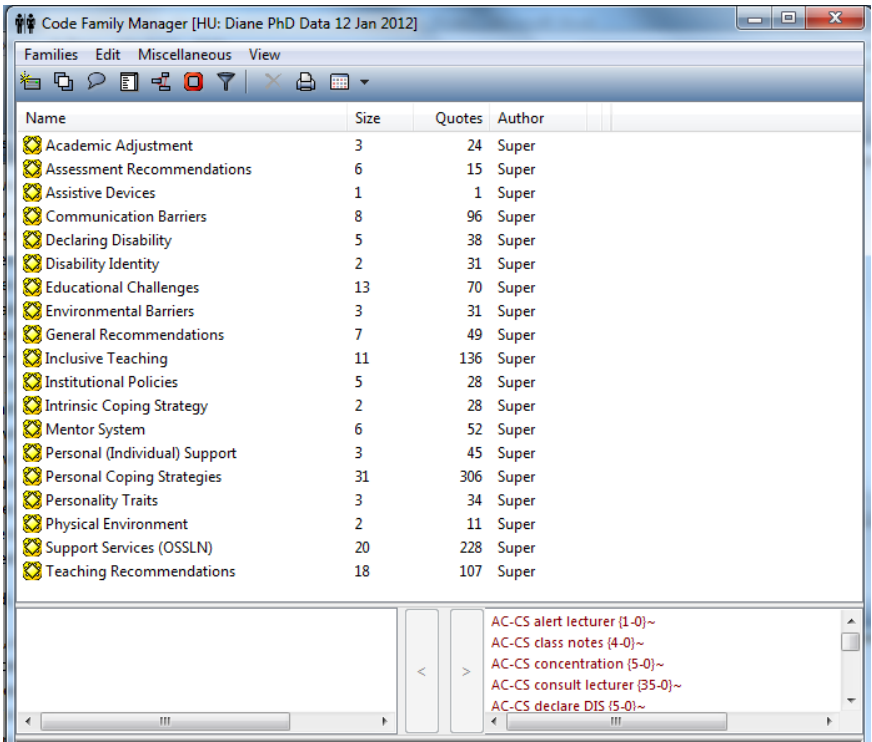


Figure 4.5: Creation of code families

After the code families had been created, I re-read the individual code comments of all the codes in each family as well as the quotes linked to each code, and then I formulated a descriptive comment for each code family, as indicated in Figure 4.6 below.

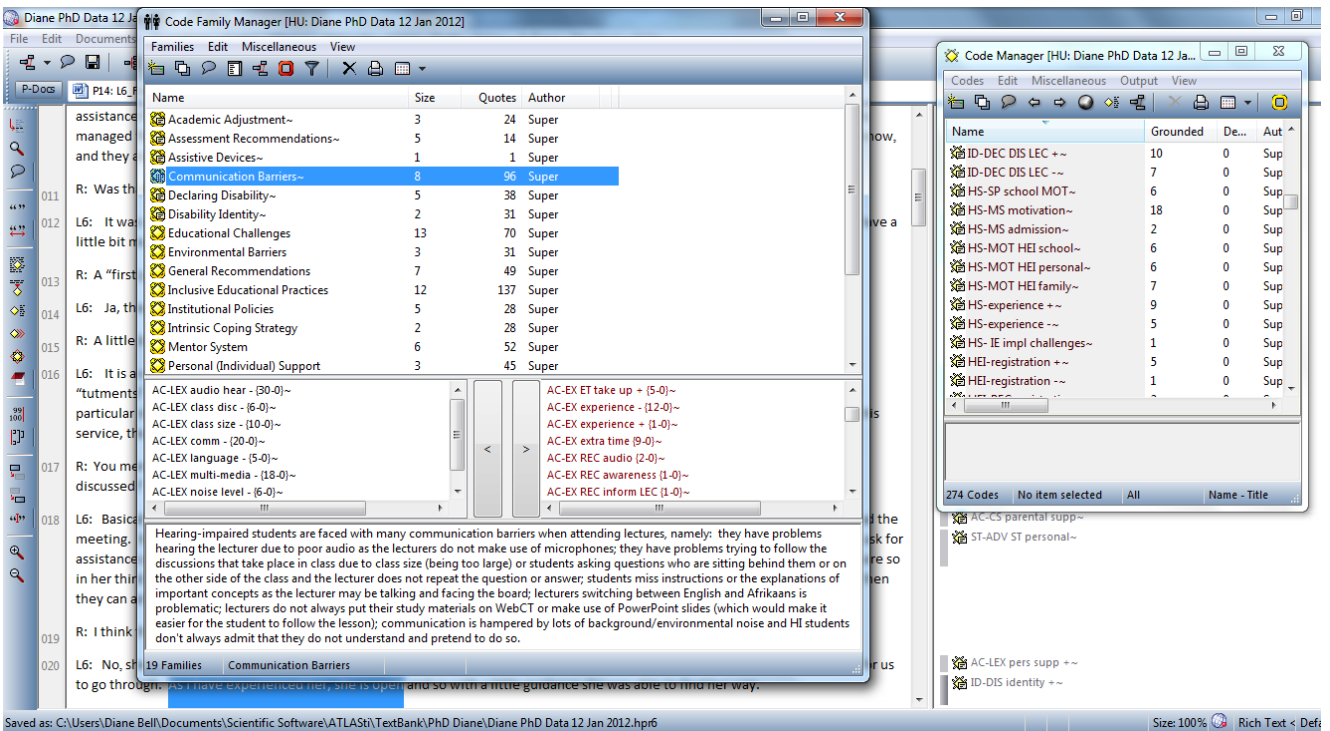


Figure 4.6: Comments relevant to code families (categories)

Miles and Huberman (1994:44), as outlined in Table 4.3 below (column titled “Description”), suggest the following applications when combining the use of a CAQDAS (e.g. ATLAS.ti) and a word processor package (e.g. Word 2007).

**Table 4.3: Ways in which the use of MS Word and ATLAS.ti were combined in this study**

NO.	DESCRIPTION	UTILISED IN THIS STUDY
1.	Making notes in the field	Handwritten notes
2.	Writing up or transcribing field notes	Microsoft Word 2007
3.	Editing: correcting, extending or revising field notes	Microsoft Word 2007
4.	Coding: attaching keywords or tags to segments of text to permit later retrieval	ATLAS.ti version 6.2.27
5.	Storage: keeping texts in an organised database	ATLAS.ti version 6.2.27
6.	Searching and retrieving: locating relevant segments of text and making them available for inspection	ATLAS.ti version 6.2.27
7.	Data linking: connecting relevant data segments with each other, forming clusters or networks of information	ATLAS.ti version 6.2.27
8.	Meaning: writing reflective commentaries on some aspects of the data, as a basis for deeper data transformation	ATLAS.ti version 6.2.27
9.	Content analysis: counting frequencies, sequence or locations of words and phrases	ATLAS.ti version 6.2.27
10.	Data display: placing selected or reduced data in a condensed, organised format, such as a matrix or network, for inspection.	ATLAS.ti version 6.2.27
11.	Conclusion drawing and verification: aiding the analyst to interpret displayed data and to test or confirm findings.	ATLAS.ti version 6.2.27
12.	Theory building: developing systematic, conceptually coherent explanations of findings. Graphic mappings: creating diagrams that depict findings or theories	ATLAS.ti version 6.2.27 and Microsoft Word 2007
13.	Preparing interim and final reports	Microsoft Word 2007

Once the data have been reduced and synthesised, and thus understood as a whole, they need to be organised into a visual display in order to present the findings in a visually clear format (see point 10 above).

#### **4.10 DATA DISPLAY**

Coding and memos are necessary, but not sufficient for moving data transformation forward. Data displays can aid further data sorting and organisation. Miles and Huberman (1994:11) suggest using data displays in order to “assemble organised information into an immediately accessible, compact form” allowing the reader a quick assimilation of the huge quantities of information being

presented. This is done once the raw data have been processed. Data displays present information in visual formats such as matrices and networks (which display nodes or points with links between them showing relationships). Data displays are powerful analytical tools. In this study, I used networks (an ATLAS.ti output) to help me to make sense of the data and present the developed theory (refer to Appendix J). Tables and charts were also used in order to make it easier for the reader to absorb large amounts of information at a quick peek.

#### **4.11 DATA CONSOLIDATION AND INTERPRETATION**

The transformation and display of the data should eventually lead to the amalgamation and interpretation of the findings. This requires the use of inductive reasoning in order to theorise, recontextualise and draw conclusions. Induction is a type of reasoning that begins with the study of a range of individual cases and extrapolates patterns from them to form a conceptual category (Charmaz, 2006:188).

ATLAS.ti works on two modes of data transformation, namely textual level and conceptual level. In order to consolidate the data, I used the conceptual level, i.e. framework-building, activities such as interrelating codes, concepts and categories to form theoretical networks (Smit, 2002:73). The theory that is developed through this process ultimately gives the research relevance. Finally, conclusions are drawn and recommendations made for future research.

#### **4.12 ETHICAL CONSIDERATIONS**

Most authors who discuss qualitative research design address the importance of ethical considerations (Henning *et al.*, 2004; Marshall & Rossman, 2006; Merriam, 2009; Patton, 2002). Most importantly, the researcher has an obligation to respect the rights, needs, values and desires of the participants.

Clearance was obtained from the university's Ethical Clearance Committee for Human and Social Sciences to conduct the research (refer to Appendix A). The clearance certificate stipulated the following three conditions:

- that the researcher would remain within the procedures and protocols indicated in the proposal, particularly in terms of any undertakings made in terms of the confidentiality of the information generated;
- that the research would again be submitted for ethical clearance if there is any substantial departure from the existing proposal; and
- that the researcher would remain within the parameters of any applicable national legislation, institutional guidelines and scientific standards relevant to the specific field of research.

The ethical arrangements described in the next three paragraphs were taken into consideration.

#### **4.12.1 Informed consent**

Besides the research participants being recruited on a purely voluntary basis during the research process, it is also important to note that informed consent remained a priority throughout the study with the participants being well informed regarding –

- the purpose of the research study;
- how the data would be used; and
- what participation would require of them, i.e. the topics to be covered and how much time would be required.

Written consent by means of a signed letter of consent was received from each voluntary participant (see Appendix B). The following topics were incorporated into the letter of consent:

- an explanation of the purpose of the study;
- procedures to be followed;
- potential risks and benefits to the participants;
- payment for participation;
- confidentiality;
- participation and withdrawal;
- identification of researcher and promoters as well as the rights of each research participant.

In this study, the participants' rights and interests were also considered of primary importance when choices were made regarding the reporting and dissemination of data.

#### **4.12.2 Anonymity and confidentiality**

'Anonymity' generally means that the identity of the participants, as well as the case study university, should not be known outside of the research team, and 'confidentiality', that any comments in reports or presentations will not be attributed directly to identifiable participants (Ritchie & Lewis, 2003:67). Wiles, Crow, Heath and Charles (2006) argue that confidentiality and anonymity tend to be conflated in much of the literature on research methods and that these two concepts are very closely related, that anonymity is a "vehicle by which confidentiality is operationalised" (Wiles, Crow, Heath and Charles, 2006:4) and furthermore that anonymisation of data does not cover all the issues raised by concerns about confidentiality.

In this study, various precautions were taken to try to ensure both confidentiality and anonymity:

- Data/records were kept confidential: I ensured the separation of data from identifiable individuals (using codes instead of names) and storing the code-linking data to individuals securely.
- Cautionary measures were also taken to secure the storage of research-related records and data, and no-one other than the researcher and supervisors had access to this material.

The abovementioned precautions were made very clear to participants.

#### **4.12.3 Protecting participants from harm**

According to Ritchie and Lewis (2003:68), it is important in any study to consider ways in which taking part in the study may be harmful to the participants and to take action to avoid this. This scenario is most likely to occur when dealing with sensitive topics or when working with vulnerable groups. In this study, in order to protect the rights of the students I gave them a clear understanding of the issues that the study would address before asking them to take part. Any sensitive topics were also addressed in an appropriate manner, generally through clear and direct questions to avoid any ambiguity. As researcher, I also remained alert to any signs of discomfort and if this presented itself, I checked the participant's willingness to continue with the interview. Another strategy that I used was to build relationships deliberately (Swartz, 2011:47) by means of an initial "coffee date" meeting with the research participants so that they would not feel threatened or ill at ease when meeting with me for the actual interview.

#### **4.13 TRUSTWORTHINESS OF THE DATA**

The aim of all research is mainly to generate knowledge that is valid and reliable in an ethical manner. Being able to trust the research results in this study was especially important to me as I had intervened in the lives of the students and wanted to depict their experiences accurately.

The term 'trustworthiness' relates to there being some rigour when carrying out the study (Merriam, 2009:209), consisting of efforts by the researcher to address the more quantitative issues of validity (the degree to which something measures that which it purports to measure) and reliability (the consistency with which it measures over time). In a quantitative study, the reader must be convinced that procedures have been followed faithfully as there is very little description provided, whereas in qualitative research, the reader must be provided with sufficient depiction, in enough detail, to show that the author's conclusion 'makes sense'. Establishing validity, reliability, generalisability and objectivity in quantitative research is relatively straightforward:

- findings are **internally valid** when the researcher can draw meaningful inferences from instruments that measure what they are intended to measure;
- findings are **reliable** when various researchers using the same approach would find the same result;
- findings are **externally valid** or **generalisable** when they extend to certain individuals and settings beyond those immediately studied; and
- findings are **objective** when the influence of the researcher in collecting, analysing and reporting data is negated (Toma, 2006:405 & 412).

In qualitative research, these standards are broadly termed ‘trustworthiness’. Lincoln and Guba (1985) suggest that qualitative researchers establish the trustworthiness of their findings by demonstrating that they are credible, transferable, dependable, and confirmable (see Table 4.4 below). Madill, Jordon and Shirley (2000) argue, “in the context of multiple realities and meanings, criteria concerned with accuracy and confirmability” such as those proposed by Lincoln and Guba (1985) are meaningless and they consequently offer three alternatives: internal coherence, deviant case analysis and reader evaluation. Cho and Trent (2006) note the emergence of two quite different approaches to the question of validity, categorising them as “transactional validity and “transformational validity” (Cho and Trent , 2006:319). These authors, however, assert that neither approach is sufficient to meet the current needs of the field, and they therefore propose an alternative framework, offering a holistic conception of validity which is “polyvocal” (Cho & Trent, 2006:334). As researcher, I have chosen to make use of the terms purported by Lincoln and Guba (1985) as they fit in better with the naturalistic enquiry of my study, and their criteria are generally accepted. It is worth noting that regardless of the terminology used, it is important that any qualitative researcher should attempt to control potential bias that may be present throughout the design, implementation and analysis of the study (Bloomberg & Volpe, 2008:85).

**Table 4.4: Lincoln and Guba’s translation of terms in Finlay (2006:321), adapted from Lincoln and Guba (1985) and Ballinger (2006)**

<b>Conventional inquiry</b>	<b>Naturalistic inquiry</b>	<b>Methods to ensure quality</b>
Internal validity	Credibility	Member checks; prolonged engagement in the field; data triangulation
External validity	Transferability	Thick description of setting and/or participants
Reliability	Dependability	Audit: researcher’s documentation of data, methods and decisions; researcher triangulation
Objectivity	Confirmability	Audit and reflexivity

The criteria for rigour in qualitative research also differ from rigour in quantitative research. Stake (1995:110) accepts “consequential validity” as the standard in qualitative case study research, i.e. the consequences of applying the conclusions, interpretations and recommendations of the work. He therefore argues that the case study researcher has a responsibility to minimise misrepresentation and misunderstanding, especially through presenting a “substantial body of uncontested description” (Stake, 1995:110). Following is a discussion of each term in relation to my study.

#### **4.13.1 Credibility**

According to Lincoln and Guba (1985) and Glaser and Strauss (1967 cited in Ritchie & Lewis, 2003:273) there have been moves away from the quantitative concept of ‘internal validity’ having been replaced by other terms such as ‘credibility’ or ‘plausibility’. The criterion of credibility suggests whether the findings are accurate and credible from the standpoint of the researcher, that of the participant or that of the reader. While the credibility in quantitative research depends on instrument construction, in qualitative research, “the researcher is the instrument” (Patton, 2002:14). Merriam (2009:213) states that ‘validity’ (credibility) is another word for ‘truth’ and that it deals with the question of how research findings match reality and how congruent the findings are with reality.

Although it is difficult to capture an objective ‘truth’ or ‘reality’, there are a number of strategies that one can employ to increase the ‘credibility’ of one’s findings. Firstly, one of the more prominent strategies to ensure internal validity (credibility) is triangulation, which is used in the more positivist traditions and which involves an attempt to get closer to the truth by bringing together multiple forms of data. However, Richardson (2000:934) argues, “we do not triangulate; we crystallize ... recognising that what we see depends on our angle of response”. She uses the crystal as an image in contrast to the triangle to understand credibility, emphasising that there is no one single truth and that there is always more that which we can learn regarding any topic simply by looking at it from different angles. The crystal “combines symmetry and substance with an infinite variety of shapes, substances, transmutations, multi-dimensionality and angles of approaches” (Richardson & St. Pierre, 2005:963). Furthermore, whereas triangulation seeks a more definitive truth, crystallisation in this study helped to put forward the problem of the multiple truths represented and enabled me to generate less naïve representations of the experiences shared.

Credibility in the study was enhanced as data were generated from multiple participants with varying perspectives, which allowed rich descriptions to be obtained by looking from different angles at the data and discovering multiple meanings. The data were assembled via interviews (from three different categories of participants), documents, field notes, memos and archival records. This generation of data from multiple methods yielded a full and rich picture of the



phenomenon under review – a measure of looking for “crystallisation” (Henning *et al.*, 2004:93; Kvale, 2007:300). I came to realise that having a disability means different things to different people, depending on their personal backgrounds and experiences, that it is a multi-layered and multi-faceted ‘condition’ and that what I expected to hear as a response to an interview question was often not what was shared with me.

A second common strategy to ensure credibility is to make use of ‘member checks’ or also known as ‘respondent validation’, i.e. obtaining feedback from participants. A member check, as explained by Holloway (1997:160) is “a useful device for researchers to verify their findings through feedback from the participants to whom they return”. Lincoln and Guba (1985) use this term to refer to the process of asking research participants to tell you whether you have accurately described their experience. The use of member checks is therefore an important way of ruling out the possibility of misinterpreting the meaning of what participants had said. Although it was not possible for me to obtain feedback on the actual emerging findings, I did however request feedback on the transcribed interviews, checking for accuracy.

Adequate engagement in data generation is a third strategy utilised to ensure credibility. In this study, the generation of data continued until the point of saturation, i.e. until no new data (codes) emerged during the data transformation process. As researcher, I spent time looking for data that could support alternative explanations (sometimes referred to as ‘negative or discrepant case analysis’), but this was not forthcoming.

The fourth strategy is “peer examination or peer review” (Merriam, 2009:219–220). My consultations with an independent qualitative researcher and two supervisors also served to enhance the credibility of this study. In order to perform a thorough peer examination, the independent qualitative researcher worked through the raw data and assessed whether the findings based on the data were plausible. The dependability of the study was further enhanced by my regular contact sessions with my study supervisors.

A final strategy is one of “reflexivity” (Lincoln & Guba, 1985:183) which is a process of reflecting critically oneself as researcher. To enhance the trustworthiness of the study, I used reflexivity, which helped me to clarify my thinking, values, purposes and beliefs. It allowed me to be up front about my thoughts so that others know where I am coming from. I could not ignore my biases but needed to make them known and then, during the process of interpretation of the data, memos were also kept, allowing me to reflect on the codes, categories and emerging trends.

Reviewing and discussing findings with professional colleagues was a further way of ensuring that the true ‘lived experience’ and ‘reality’ of the participants were adequately reflected in the findings. Finally, in order to add further to the credibility of the study, I constructed findings that are believable and convincing but also presented negative or inconsistent findings. The interview

guides were also assessed by my study supervisors to ensure that they were adequate to elicit responses in order to answer the research question and sub-questions.

#### **4.13.2 Transferability**

'Transferability' replaces the concept of 'external validity'. Transferability, according to Lincoln and Guba (1985), refers to the ways in which the reader determines whether and to what extent this particular phenomenon in this particular context can transfer to another particular context. In quantitative research, this is referred to as 'generalising' the findings to the population. Patton (2002:584) promotes the notion of 'extrapolating', rather than 'generalising' in qualitative research, asserting that "extrapolations are modest speculations on the likely applicability of findings to other situations under similar, but not identical, conditions". Thus, the researcher's interest is not in statistical generalisation; it is primarily concerned with providing rich, in-depth 'thick' descriptions of the research findings in order to make successful comparisons (Babbie & Mouton, 2001). The phrase 'thick descriptions' was originally coined by the philosopher Gilbert Ryle (1949) and originally meant an 'insider's account', but has more recently been used by qualitative research scholars to refer to a highly descriptive, detailed presentation of the setting and the findings of the study. Furthermore, the selection of diverse participants contributes to the transferability of the study (Babbie & Mouton, 2001). Towards this result I attempted to address the issue of transferability by providing a detailed description of the context of the research study and the participants, as well as a detailed description of the results with adequate evidence presented in the form of quotes from participant interviews, field notes and documents. In addition, in section 4.9 the selection of participants is described. This is also set out in Tables 4.1 and 4.2 in order to show how the diversity of the participants was maximised.

#### **4.13.3 Dependability**

Reliability, in the traditional sense, refers to the extent to which research findings can be replicated. The concept of dependability replaces the idea of reliability, and encourages researchers to provide an audit trail which can be laid open to scrutiny. Authors concur that the most important question is whether the findings are consistent and dependable with the data that was collected (Lincoln & Guba, 1985; Merriam, 2009:221). Seale (1999:148) goes further to state that no act can be free from the underlying assumptions that guide it and that "low-inference descriptors" should be used. These descriptors involve "recording verbatim accounts of what people say as concretely as possible ... rather than the researchers' reconstructions of the general sense of what the person said" (Seale, 1999:148). As I understood it, in qualitative research, the goal is not to eliminate inconsistencies completely, but rather to ensure that I understand if and when they occur. Based on this goal, one of my most important tasks was to document all my research procedures and to show that the coding schemes and categories were used consistently. Strategies that a qualitative researcher may use to ensure dependability are triangulation, peer examination, investigator's

position and the audit trail (Merriam, 2009:222). As discussed under credibility, I used more than one data generation method in pursuit of generating rich, thick data viewed from different angles, ensuring the data were congruent with the reality of the participants. Participants were also requested to examine the interview transcripts, and I had discussions regarding the preliminary findings with professional colleagues. My position as researcher was also made clear, and assumptions stated up front. An audit trail in qualitative research, according to Merriam (2009:223), describes in detail how data were 'collected' (generated), how categories were derived and how decisions were made throughout the journey by means of a diary or a log of processes. In this study, I made use of memos in ATLAS.ti to document my reflections, questions and decisions.

#### **4.13.4 Confirmability**

Confirmability, replacing the concept of objectivity, also invokes auditing as well as crystallisation (of data, researcher and context) as a means to demonstrate quality. The methods to confirm this quality criterion have already been discussed under credibility, transferability and dependability.

Besides the criteria for naturalistic research as described above, one needs also to consider what makes for 'good' qualitative research. Henwood and Pidgeon (1992 in Finlay, 2006:321) identified seven attributes that characterise good qualitative research, providing a schema which links criteria with methods for achieving sound research. Richardson (2000a; 2000b) argues the need to do more than offer 'scientific' criteria and suggested some 'literary' dimensions. She advocates the following five criteria: substantive contribution, aesthetic merit, reflexivity, impact (emotional and intellectual), and expression of a reality. Ultimately, according to Finlay (2006), a qualitative study can, and should be judged on its "ability to draw the reader into the researcher's discoveries, allowing the reader to see the worlds of others in new and deeper ways" (Finlay, 2006:322). In conclusion, I wish to affirm Henning's (1995:29) assertion that "rigorous qualitative research is a solid option" as long as one makes use of explicit procedures for empirical work, and that findings should be clear and framed in theory.

#### **4.14 LIMITATIONS OF THE STUDY**

Qualitative as well as quantitative research has certain advantages as well as limitations. This study comprised certain limiting conditions, some of which were related to the common critiques of qualitative research methodology in general and some of which were inherent in this study's research design. Careful consideration, and the resultant action, went into trying to minimise the impact of these confines. As the researcher, in qualitative research, is the primary instrument in terms of data generation, there is a possibility of researcher subjectivity. One of the key limitations of this study was the issue of subjectivity and potential bias as I am, firstly, the mother of a daughter with a profound hearing impairment who uses the oral method of communication;

secondly, I am a lecturer at a university of technology having had experience of teaching a student with a hearing impairment and having 'inside' knowledge of the higher education environment; and thirdly, I am a member of the executive committee of HEDSA (Higher and further Education Disability Services Association), a national NPO (non-profit organisation) working for the rights of students with disabilities in higher education. A second limitation could be that a few of the students with hearing impairment were interviewed in their second language. A related limitation was that the participants were informed that I had a daughter with a hearing impairment (mentioned in the introductory email communiqué to them) and this could also have biased their responses in some way.

Recognising these limitations, I took the following measures. First, I acknowledged the purpose of the research and stated my assumptions up front. The interview guides and the coding schemes were reviewed by my supervisors, as were coded documents and transcripts. To reduce the limitation of potential bias during data transformation process, I removed all participant names and coded all interview transcripts blindly so as not to associate any material or data with any particular individual. Regarding the barriers to communication, in order to reduce the limitations, participants were asked to indicate clearly their willingness and ability to be interviewed in a second language, and if not, that they were free to respond in their first language, which would then be translated to English (this is available for auditing).

Aside from issues relating to bias and communication, a further major limitation of the study was that the research sample was restricted. The original intention was to do a full census, but this was not possible.

#### **4.15 CHAPTER SUMMARY**

In this chapter, the research design, research paradigm and research methodology of this study were discussed. The research has been conducted from the perspective of social constructivism, using a case study design. This method fitted the research questions well and led to specific data generation techniques, which were explicated. In particular, semi-structured interviews with the writing of field notes and the construction of memos in ATLAS.ti were used. Thereafter the processes of data reduction, display, data transformation and verification were presented. The role of the researcher and the limitations of the study were also outlined. Finally, the relevant ethical considerations were discussed. The following chapter will comprehensively present the research findings.

## CHAPTER 5 PRESENTATION OF FINDINGS

### 5.1 INTRODUCTION

The main research goal of this study was to analyse and describe the teaching and learning (academic) experiences of students with hearing impairment, using the oral method of communication, at the case study university. The investigation included aspects such as barriers faced, coping strategies employed, use of assistive technologies, curriculum access and the provision of academic and other support services. This chapter presents the key findings obtained from semi-structured interviews held with seven with students with hearing impairment, supplemented by one semi-structured interview with a staff member from the disability unit and seven interviews with academics who had taught students with hearing impairment. In this section, I present the findings of each group of participants separately, beginning with the students as their voices are paramount, supplemented by the rest of the data.

The following six major findings emerged from this study.

1. All of the participants identified as having a hearing rather than a D/deaf identity. This identity also formed part of their cultural paradigm. Additionally, their willingness to disclose their hearing impairment was either purely for administrative purposes or to solicit additional support when encountering various barriers.
2. Curricula are largely inflexible with little transformation having taken place in order to accommodate students with a hearing impairment. Existing curricula do not subscribe to the principles of accessibility, flexibility nor to any universal learning design and are thus not responsive to their needs.
3. Support services offered to students with a hearing impairment at the university are largely inadequate, including both human and technical support. Participants were also mostly unaware of the availability of support services as well as any policy documents related to their rights as students with disabilities. Furthermore, the uptake of any support offered to them was also low. The relationship between this finding and the first will be explicated in the next chapter.
4. A number of barriers related to learning and assessment as a result of inadequate support were experienced by all of the participants. These barriers were largely associated with communication, teaching practices and assessment, which had a resultant negative impact on the educational experience and academic success of some of the participants.

5. Students with hearing impairments employ a variety of academic and personal coping strategies to support their needs in higher education. At the forefront of these is self- and peer-reliance as well as personal motivation.
6. A number of critical success factors were advocated for by the participants to assist them in achieving their maximum potential. The most pertinent of these were in the scope of curriculum flexibility as well as improved communication and interaction with lecturers.

As there is no single correct way for reporting qualitative data (Wolcott, 2009), but the importance of contextualisation for a case study is emphasised, I decided to provide a description of the context first (see section 5.2) and then to outline important descriptive and demographic information (see sections 5.3 and 5.4) that may be helpful in further contextualising the findings. Thereafter I describe each finding in detail (see sections 5.5 to 5.13) to support and explain each claim. This seemed to be the most logical approach to guide the reader. By way of this “thick description” (Merriam, 2009:43), I set out to document a broad range of experiences, thereby providing an opportunity for the reader to enter into this study and understand the reality of the research participants better. The emphasis throughout is on letting the participants speak for themselves. Illustrative quotations taken from interview transcripts attempt to portray participant perspectives and capture some of the richness and complexity of the subject matter. Where appropriate, data from the preliminary questionnaire are woven in with the interview data to augment and solidify the discussion. Following that, the findings from the interviews conducted with a staff member from support services and lecturers as well as those from the institutional document analysis are presented.

## **5.2 THE CASE STUDY INSTITUTION**

Although it is most desirable to disclose both the identities of the case and the individuals, as Yin (2003:157) points out, there are times when anonymity is necessary. Due to the vulnerable nature of the group of student participants, I decided to maintain complete anonymity on both accounts (Connolly, 2003).

This research was undertaken at one of the twenty-three public universities in South Africa: a research-intensive institution and one whose roots are steeped in history. The student body currently (2012) comprises approximately 28 000 students, with around 9 000 being postgraduates and the rest undergraduate students. There is an equal distribution of male to female students and the student body is relatively diverse, both in terms of ethnicity, culture and language. The development of diversity is one of the current strategic priorities of the university in terms of both staff and students. The university has a policy for students with disabilities, which underwent revision in 2010 in order to move away from the definition of disability (as based on the obsolete medical model of diagnosis) to the social model of disability. The university currently defines the

term 'disability' as referring to "a person with a verifiable physical, non-visible and/or psychological limitation/s which negatively affects his/her daily activities in a specific way" (no reference is provided to protect the anonymity of the institution). Students disclosing a disability on their application form represented 0,66 per cent of the student population in 2008 while the figure currently stands at around 1,28 per cent, indicating a substantial increase in the numbers of students with disabilities gaining access at this particular university.

**Table 5.1: Total enrolments – students with disabilities (2008 to 2012)**

Year	Total enrolments	Students with disabilities	Per cent of enrolments	Students indicating 'other hearing disability' and 'deafness'	Per cent of students with disabilities
2008	24 686	163	0,66	16	9,8
2009	26 243	222	0,84	43	19,3
2010	27 694	318	1,14	63	19,8
2011	28 193	308	1,09	55	17,8
2012	24 391 (as at 21/3) (not final)	314	1,28	51	16,2

\*These data were received via email (personal communiqué) on 5 February 2008 and 18 July 2012 from a staff member working in the disability unit. It reflects students with disabilities as indicated on their application forms but not necessarily having been reported to or supported by the disability unit.

In two core public documents outlining the strategic framework and vision for the institution (no reference provided to maintain confidentiality and anonymity, but available), the university commits to fostering an institutional culture conducive to building tolerance and respect for fundamental human rights (also stated as a core value of the university), making access into the university and the encouragement of diversity easier.

The university's disability unit developed out of the formation of an ad hoc committee and was established in 1994 to investigate the accommodation of persons with disabilities on campus. Some of the driving forces included adherence to national legislation and also to centralise the existing services being offered. The disability unit currently resides under the umbrella of student counselling and is responsible for actively promoting access for students and applicants who have a disability, who meet the necessary academic requirements, ensuring that students with disabilities are fully integrated into the university community and that their learning needs are also supported. The disability unit is also working towards 'faculty-level support'. i.e. having a 'disability liaison officer' in every faculty with whom they liaise in terms of individual student support provision. In addition to support offered by the staff from the disability unit, support to all first-year students at the university (including students with disabilities) includes the provision of tutors and

student mentors. Academic tutoring refers to senior students who serve as tutors in a group-setting to first-year students. Each first-year student is also allocated a student mentor – a senior student, usually in the same residence in which the student resides, to assist him or her with any other areas of difficulty beyond the academic content realm. This support is generally provided in a one-on-one situation.

### **5.3 DESCRIPTION OF THE PARTICIPANTS**

This section provides basic biographical information regarding the participants to assist the reader to contextualise their individual responses. The perspective of each student participant is based on his or her inter-related, complex and unique experiences of his or her hearing impairment in relation to family life, education, support interventions, etcetera. Although some background data on the selection of participants have already been provided in Chapter 4 (see section 4.4), it is important to provide additional information regarding the students' personal circumstances as it has an influence on their individual experiences. Any information that could lead to identification was altered, by for instance using pseudonyms instead of real names.

#### **STUDENTS**

##### ***Barry (S1)***

Barry, who is in his early 20s, was born with profound hearing impairment in both his left and right ear and makes use of a cochlear implant on his right side. The cause of his hearing impairment is not known and both his parents and his siblings all have normal hearing. His communication preferences include spoken language and lip-reading, and he had speech therapy as a child. Barry is currently in his third year, studying for a Bachelor of Science degree full-time and he stays in one of the university residences. He was strongly encouraged by his parents to pursue a university education. During his school-going years, he attended both a special school for the Deaf as well as a mainstream public school. At the school for the Deaf, he was taught Sign Language as a medium of communication. He does not identify as being disabled, but rather as being part of the hearing community.

##### ***Merle (S2)***

Merle was born with a bilateral (left and right) moderate hearing impairment (cause unknown) but does not make use of any hearing instruments (hearing aid or cochlear implant) due to current financial constraints. She is in her early 20s with both her parents and her siblings all having normal hearing. Merle's communication preferences include spoken language and lip-reading, without any special support, e.g. speech therapy, in her formative years. She is currently in her third year of an Arts degree, is studying full-time and shares private accommodation. Merle's mother was the person who influenced her most to pursue a university education. During her



school-going years, she attended a special school for a few years and was then later enrolled in a mainstream public school. She identifies as being hearing as opposed to being disabled.

### ***Paul (S3)***

Paul, at the time in his mid-20s, was born with a profound hearing impairment in his right ear and he makes use of a hearing aid. The cause of his hearing impairment at birth is not known and both his parents and his siblings all have normal hearing. His communication preferences include spoken language and lip-reading; without having had any special support, e.g. speech therapy, in his earlier years. Paul is currently in his third year, studying for a Bachelor of Commerce degree full-time, and he stays in a private flat. He was strongly encouraged by his father to pursue a university education. During his school-going years, he attended only mainstream public schools and relied primarily on his listening skills. He does not identify as being disabled, but rather as being part of the hearing community.

### ***Astrid (S4)***

Astrid was born with normal hearing and lost most of her hearing in her left ear at age 4 and in her right ear, at age 8. She has a profound bilateral hearing impairment, uses a cochlear implant on her right side and is in her mid-20s. Her parents and siblings all have normal hearing. Astrid's communication preferences include spoken language and lip-reading, and she had speech therapy in her early years. She is currently in her fourth year of an Arts degree, is studying full-time and stays in university accommodation. Astrid's mother was the person who influenced her to pursue a university education together with one of her high school teachers and a close friend. During her school-going years, she attended private schools. She identifies as being hearing as opposed to being disabled.

### ***Colin (S5)***

Colin, who is 20 years old, was born with a severe hearing impairment in his right ear and makes use of a bone-anchored hearing aid. The cause of his hearing impairment at birth is not known and both his parents and his siblings all have normal hearing. His communication preferences include spoken language and lip-reading, and he had speech therapy in his earlier years. Colin is currently in his first year, studying for an Engineering degree full-time, and he stays in a university residence. He was strongly encouraged by both his parents to pursue a university education. During his school-going years, he initially attended a special school and later went to a mainstream public school where he relied on listening and lip-reading for communication purposes. He does not identify as being disabled, but rather as being part of the hearing community.

**Stewart (S6)**

Stewart was born with a bilateral (left and right) moderate hearing impairment (cause unknown) and he wears a hearing aid on each side. His hearing impairment developed as a result of a genetic anomaly – both his mother and brother are also hearing impaired. Stewart is 20 years of age, and his communication preferences include spoken language and lip-reading. He had many years of speech therapy. He is currently in his first year of a Science degree, is studying full-time and stays in a university residence. Stewart’s mother was the person who influenced him most to pursue a university education. During his school-going years, he attended only mainstream public schools and identifies as being hearing rather than being disabled.

**Noelene (S7)**

Noelene, who is just under 20, has a profound bilateral hearing impairment and makes use of a cochlear implant on her right side. She lost her hearing as a result of a virus at age 2 on her left side and at age 10 on her right. Both her parents and her siblings all have normal hearing. Her communication preferences include spoken language and lip-reading, and she had intensive speech therapy in her earlier years. Noelene is currently a first-year student, studying in the Arts field full-time, and she stays in a university residence. She was strongly encouraged by her mother to pursue a university education. During her school-going years, she attended only mainstream public schools and relied on both her listening and lip-reading skills. She does not identify as being disabled, but rather as being part of the hearing community.

**5.4 DEMOGRAPHIC DESCRIPTION**

This section summarises the student participants’ demographic information. They ranged from 19 to 24 years of age; the mean age was 21,5 and the median age, 21. Of the seven participants, 4 were male and 3 were female. With regard to hearing status, the participants self-described their hearing impairment as moderate (2), severe (1) or profound (4), and they reported using spoken (aural/oral) language as their main communication strategy, mostly in conjunction with lip-reading. Tables 4.2 and 4.3 summarise the participants’ demographics.

**Table 5.2: Study level and gender of student participants**

Study level (2009)	Gender (N = 7)	
	Male	Female
1 <sup>st</sup> year	2	1
3 <sup>rd</sup> year	2	1
4 <sup>th</sup> year		1

**Table 5.3: Faculties in which student participants were registered**

Faculty	Arts	Commerce	Engineering	Science
Number of students	3	1	1	2

None of the seven participants disclosed any additional health concerns that have affected their academic experiences. Academically, only one of the participants already had an undergraduate degree and was busy with her postgraduate studies; the rest were undergraduate students. Their chosen fields of study were diverse (i.e. sciences, humanities and business). With regard to institutional experience, all of the participants had only ever attended the current university at which they were registered. None of these students made use of any additional assistive listening devices, e.g. frequency modulation (FM) systems, to aid their listening abilities in class. The reasons for this will be discussed later.

In summary, I interviewed seven participants to gain an understanding of their experiences in a mainstream ‘hearing’ university in the Western Cape. They varied in age, gender and faculty of study but were homogenous in terms of their identity, i.e. not seeing themselves as ‘disabled’, but rather as ‘normal’ and part of the hearing community.

Before proceeding to describe the findings and provide evidence in the form of ‘quotes’ depicting the voices of the participants, it is important to point out that I followed Merriam’s (2009:187–188) guidelines for categorisation, namely that categories should be “responsive to the purpose of the research”, “exhaustive”, “mutually exclusive”, “sensitising” and “conceptually congruent”. I have also elected to provide a summary at the end of each finding (category) rather than after each subcategory within each finding, for the sake of brevity.

## 5.5 FINDING 1

This finding naturally emerged from the interviews with the participants and related to their identity. The finding will be explicated using the following sub-categories: Hearing/Deaf identity cultural paradigm, disclosure of hearing impairment, as well as personal characteristics, self-advocacy and extravisibility. All of the participants identified as having a ‘hearing’ identity cultural paradigm rather than a Deaf identity cultural paradigm. The willingness to disclose their hearing impairment was either purely for administrative purposes or to solicit additional support when encountering various barriers. The intrapersonal characteristics of each student, both positive and negative, also play a crucial role within their environmental interactions. For example, a student who wishes to remain ‘invisible’ rather than ‘extravisible’ is often unwilling to make use of an assistive listening device such as an FM system. These personal character traits are also directly related to the concept of self-advocacy.

### 5.5.1 Hearing/Deaf identity cultural paradigm

This category relates to how the participants perceive their self-identity in terms of either relating to a Deaf or hearing identity cultural paradigm. All of the students identified strongly with the latter, namely a hearing identity, taking the hearing world as their “reference point for normality and the Deaf world for abnormality, disability and deviance” (Glickman & Carey, 1993:276).

Disability as an identity is often a personal construction, a purposive attempt to make meaning of self in the world. The participants in this study did not identify as being ‘disabled’ as shared by Astrid:

*With me having a disability in the first place, I don't see myself as disabled, I don't see myself as being part of ... [disabled] society. It has always been like that so ...*  
(P 4: S4\_F.doc – 4:22, Astrid)<sup>8</sup>.

Culturally hearing persons, such as the student participants in this study, value oral means of communication such as speech, lip-reading, using residual hearing as well as fitting comfortably within the larger hearing world. By saying “I was never regarded as someone who was deaf”, Astrid attempted to normalise herself and held on to a different identity claim. Being hearing to her is an important self-identification. This held true for all of the participants and is clearly expressed by Astrid below.

*I was never regarded as someone who was deaf, as I said at the previous meeting, even though I was deaf, I still went to school normally, they treated me normally and it wasn't that I was isolated from the rest of the world, so I was part of it, the teachers were supportive and the students also*  
(P 4: S4\_F.doc – 4:78, Astrid).

The characteristic of ‘normalisation’ was a recurring theme throughout the data. The participants did not want to be seen to be ‘different’, but rather viewed themselves as ‘normal’ hearing university students. Noelene shared how her hearing impairment was not immediately visible and she was therefore assumed to be ‘normal’ and she also felt that she was just a ‘normal’ student.

*... and with me, they won't see immediately, they will assume that I am a normal person. That is how it has always been ... I have always been a normal student*  
(P 6: S6\_M.doc – 6:50, Noelene).

The stigma of being labelled as ‘disabled’ was strongly rejected by the participants and they did not want any ‘special’ treatment. Astrid explained her experiences at school as positive as she was not viewed as being ‘disabled’ while Paul shared how he tried to cope on his own without disclosing his hearing impairment as he did not want to ask for any special concessions.

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<sup>8</sup> These references refer to the raw data (interview transcripts) within ATLAS.ti. Example (P 4: S4\_F.doc – 4:22, Astrid) = **P** refers to the primary document (.doc or .rtf format) number; **4** is the primary document number; **S** refers to student; **L** to lecturer, **M** or **F** to male or female, **4** refers again to the primary document number; **22** refers to the line number within the primary document to be able to locate the exact quote, and **Astrid** is a pseudonym for the participant.

*I had a lot of teachers that would never treat me as a disabled student in the first place, but they would also forget about it [my hearing impairment] sometimes and when I think back now that was really good - that you are not different from anyone else, so just get on with it [life]*  
(P 4: S4\_F.doc – 4:83, Astrid).

*I tried to avoid disclosing it [my hearing impairment] as much as possible. I have coped my entire life with people not being aware of me being deaf. I don't really want a friend or person to have to talk slower or louder for my benefit*  
(P 3: S3\_M.doc – 3:4, Paul).

### 5.5.2 Disclosure of hearing impairment

This category refers to the willingness of students with hearing impairment to disclose their hearing impairment – either on their university application form, to their lecturers or to their peers. All of the participants indicated on the application form (selected 'deaf' option) that they had a hearing impairment when applying for acceptance to the university. They were necessitated to disclose this information on the application form as it is a requirement prior to signing it. Had they been given a choice, they would not have freely disclosed their hearing impairment as clearly explained by Astrid:

*I had to because it was on the piece of paper obviously, what kind of disability do you have? Are you deaf? So I ticked the 'deaf' one*  
(P 4: S4\_F.doc – 4:18, Astrid).

Some of the participants were prepared to inform their lecturers regarding their hearing impairment, but they were usually only prepared to do this when they required additional support. Stewart shared how at times he found it 'useful' to disclose his hearing impairment:

*I have informed the [subject] lecturer so far as I have not had major problems in terms of hearing or they are not clear or the classes are loud. I have always been sitting towards the front and it has not been a major problem but for instance in [subject], I have informed her when I asked if I could get a mentor or help then I told her that I have the hearing problem and I find it better to learn privately. So then I usually do inform them*  
(P 6: S6\_M.doc – 6:186, Stewart).

One participant explained that she needed to inform her lecturer of her hearing impairment as he was always 'walking up and down' and she was not able to lip-read. The student (Noelene) was only prepared to disclose her hearing impairment as and when the situation required corrective action.

*The other day in [subject lecture], there was a lecturer who was walking up and down all the time and I couldn't lip-read, so I told him of my disability. So I will only tell someone in that situation*  
(P 7: S7\_F.doc – 7:36, Noelene).

Some of the participants were prepared to inform their peers regarding their hearing impairment, but usually only when circumstances dictated, e.g. not being able to hear in a group situation or if enquired after:

*... I don't think so, no, I haven't told them, they [his friends] have spotted it on their own*

(P 3: S3\_M.doc – 3:75, Paul).

They would not have been comfortable disclosing their hearing impairment at the onset. The participants also referred to their hearing impairment as being “not so visible” (P 2: S2\_F.doc – 2:206, Merle), and they reported that friends often do not realise that they have a hearing impairment due to its “invisibility”. As Merle said,

*Very few of them [friends], because it is not so visible, many people don't know, some of my friends don't even know. So, no they don't*

(P 2: S2\_F.doc – 2:106, Merle).

If, however, one of their peers happened to notice their hearing instrument/s or a difference in their speech and they enquired concerning it, then the student felt it was a natural process to explain about their hearing impairment in a general conversational manner and thereafter a sense of ‘normalcy’ continued to prevail. It was reassuring to the students that their hearing impairment did not define them or their relationship with their peers.

*Also not that I directly tell them I am deaf; it is more that they pick it up and they ask me and in a matter of minutes then they forget about it again so it is really nice*

(P 4: S4\_F.doc – 4:111, Astrid).

### **5.5.3 Personal characteristics, self-advocacy and extravisibility**

Personal characteristics refer to data that revealed intra-personal qualities. Self-advocacy in this category includes data that refer to an individual's ability to communicate effectively and to convey, negotiate or assert his or her own interests or desires, while ‘extravisibility’ refers to a situation where students with a hearing impairment need to go out of their way to make their needs known, which results in them becoming ‘extravisible’ in a negative way as opposed to ‘invisible’ when their needs are not met (Goode, 2007:42). Paul voiced his frustration about having to ask people to repeat something they said:

*I get quite angry having to ask for somebody to repeat themselves or to say “excuse me, excuse me”, so there I have lost some information occasionally [in class] because I don't ask*

(P 3: S3\_M.doc – 3:108, Paul).

Students with a hearing impairment display both positive and negative personal characteristics. Some of the negative personal characteristics of the participants relate to their unwillingness to make use of ‘visible’ assistive listening devices such as frequency modulation (FM) systems (extravisibility) as well as character traits that detract from the promotion of self-advocacy, such as being introverted and too ‘scared’ or ‘shy’ to ask questions in class.

On the positive side, the research participants were all self-motivated to pursue a university education, as one student expressed:

*I knew I was always going to university*  
(P 1: S1\_M.doc – 1:095, Barry).

whilst another student commented on the need to be qualified to have a successful career:

*... personal experience showed me that if you don't qualify yourself for something you can't get on top ... so I must study more*  
(P 3: S3\_M.doc – 3:101, Paul).

Other positive characteristics such as self-determination, persistence and faith in self were also evident in many of the responses offered by the participants, as clearly expressed by Paul:

*If you can learn to cope and rely on yourself and your surroundings to help you overcome your disability, you will be okay*  
(P 3: S3\_M.doc – 3:99, Paul).

The student participants also received additional encouragement from either one or both of their parents, their peers and school educators to continue studying. Astrid explains this as follows:

*My mom played a big role as she believed in me and ultimately that one teacher who said I [the teacher] have a deaf brother and I want to see how this student [Astrid] is doing and she was my teacher and throughout the years she was very supportive. My mother has never treated me differently; she always made an effort, but never that she said "you are deaf", my mom, she is, not a fighter in a sense, just very organised*  
(P 4: S4\_F.doc – 4:85, Astrid).

Despite the abovementioned positive intrapersonal qualities displayed by most of the participants, they were generally reluctant to request any additional assistance, especially in front of their peers (during class) or make use of any 'visible' assistive listening devices, not being prepared to draw undue attention to themselves. This refrainment from being 'extravisable' resulted in the participants not self-advocating for their rights and hence their accommodation needs not being met, as expressed by Barry:

*No, I am scared to say in front of the class. I am shy ... scared to go to the professor and tell him "here is a FM" ... I am shy; I don't want everybody to know that I have asked the professor for something; I feel uncomfortable*  
(P 1: S1\_M.doc – 1:79, Barry).

#### **5.5.4 Summary**

In summary, the first major finding that emerged was that all of the participants identified as having a hearing rather than a D/deaf identity. This identity also formed part of their cultural paradigm, valuing oral communication, and they saw themselves as 'normal'. In terms of willingness to disclose their hearing impairment, the participants chose to do so either purely for administrative purposes or to solicit additional support when encountering various barriers. The intrapersonal characteristics of each student, both positive and negative, also impacted on his or her educational experiences through environmental interactions, e.g. willingness to disclose his or her hearing impairment to lecturers in order to solicit support.

## 5.6 FINDING 2

This finding is related to the first research sub-question (curriculum transformation) and will be explicated through the use of the following sub-categories: 'inclusive' teaching practices and reasonable academic adjustments. Curricula are largely inflexible and do not accommodate the needs of students with hearing impairment. Very little curriculum transformation has taken place since the university first started admitting students with disabilities. Existing curricula do not subscribe to the principles of accessibility, flexibility or universal learning design and are thus not responsive to the needs of students with hearing impairment.

### 5.6.1 'Inclusive' teaching practices

This category refers to educational practices used by lecturers, which resulted in positive educational experiences for students with hearing impairment. It is important to note that these perceived 'inclusive' educational practices were generally not deliberate attempts by lecturers to be inclusive or more accommodating to students with hearing impairment, but were the result of usual teaching practices and the availability of technology, i.e. a usual phenomena typical for post-modern universities rather than some part of an inclusive approach of the university in general.

Firstly, the provision of electronic notes (using an e-learning platform such as WebCT), especially when available in advance, as well as electronic reminders regarding assignment submission deadlines and assessment details was deemed very helpful by all of the participants. Merle shares her appreciation for the availability of the notes on PowerPoint:

*It [our notes] is mostly Power Point ... we can get it on Web CT as well; I really appreciate that*  
(P 2: S2\_F.doc – 2:77, Merle).

In addition, Stewart and Paul express their views as follows:

*... and everything is accessible on the WebCT and everything is always available there. It makes it a whole lot easier with Power Point and the material they have. We can also see it [test dates] on WebCT; there is a notice that comes up to say there is a test on a specific day*  
(P 6: S6\_M.doc – 6:64, Stewart).

*PowerPoint slides are available on WebCT beforehand. It is around about two or three days before class, they will put up the presentations for that specific class, or for a few weeks' classes*  
(P 3: S3\_M.doc – 3:46, Paul).

Secondly, students felt that the use of audio equipment, such as microphones, was very helpful to them in poor acoustic situations. As two students mentioned:

*I could hear him because he had the microphone on, so that helped*  
(P 5: S5\_M.doc – 5:16, Colin),

and



*Yes, for instance the classes like [subject] and [subject] they always use microphones, because we are usually quite big classes and the halls are quite big and for those subjects they do use it*  
(P 6: S6\_M.doc – 6:87, Stewart).

And thirdly, the participants also mentioned that the use of electronic mail for communication between the lecturer and themselves was most helpful. Merle explained the use of email by lecturers and her tutor:

*... sometimes they may email us with extra information, also our tutor for [subject], she also emails us to send us some of the class notes, as we are writing an essay now and she would send us the subjects of the essay ... so it is mostly email that is for communication and sometimes to send us notes and links on the internet, they send us via email*  
(P 2: S2\_F.doc – 2:128, Merle).

Other unintentional 'inclusive' educational practices – made by chance by lecturers familiar with the use of technologies – included the use of small groups for discussion purposes, class notes issued in advance and thus assisting the student to follow the lecture, key dates being written on the board instead of simply given verbally, and lecturers refraining from writing on the board and talking simultaneously.

One deliberate inclusive practice was the provision of preferential seating for students with hearing impairment (as well as students with other impairments). Two of the participants, commented on the usefulness of this accommodation:

*... usually the lecture halls, for example in the [subject] building, they have reserved seats for disabled students in the front row. That is really just in the [specific subject] building that I know of, it is really not a problem finding a seat in the front row as most people don't want to sit in the front; they sit right at the back. I think it is good to have that reserved in front for them*  
(P 4: S4\_F.doc – 4:150, Astrid).

Ensuring the availability of seats towards the front of the venue allows a student with a hearing impairment improved visibility for the purposes of lip-reading as well as better audibility in acoustically poor environments, but at the same time it creates a barrier between a student with impairment and the other students as 'normal' students can elect to sit anywhere and usually prefer to sit at the back.

### **5.6.2 Reasonable academic adjustments**

The term 'academic adjustment' refers to any reasonable academic modification or adjustment that minimises or eliminates the impact of a disability, allowing the individual to gain access or have an equal opportunity to participate in the university's courses, programmes, assessments, services and activities. The only reasonable academic adjustment implemented for students with a hearing impairment was the provision of 'extra time' for written assessments.

Only one of the participants made use of the extra time concession during assessments:

*For the tests/exam I have extra time. I get 10 minutes per hour  
(P 1: S1\_M.doc – 1:289, Paul).*

The majority of the participants did not make use of extra writing time for their assessments for one of the following reasons:

- they were not aware of this possibility;
- they felt that it was not necessary or that it would be an unfair advantage for them; and
- they did not want to be subjected to the application procedure.

Astrid defends her position of not wishing to make use of this particular reasonable accommodation:

*I am aware of that all disabled students, deaf people can make use of extra time which I actually find useless in a sense and unnecessary, but I am aware that you can do that; I know a lot of disabled students actually do that and ask for extra time in the exam, but I don't really see why as we have the time to study, we can study just as well as anybody else and we can write slower than all the others and that is mainly what extra time is for students who have problems writing fast. [Even if I was aware of the concession] No, I would not have taken it because I would find it unfair towards the other students when I would apply for it and I really didn't need it  
(P 4: S4\_F.doc – 4:61, Astrid).*

### **5.6.3 Summary**

In summary, the second major finding that emerged from the data were that curricula are still quite inflexible with little transformation having taken place (since the university first started admitting students with disabilities) in order to accommodate the communication needs of students with hearing impairment. Existing curricula at the university do not subscribe to the principles of accessibility, flexibility or universal learning design and are thus unresponsive to their needs.

## **5.7 FINDING 3**

This finding is related to the second research sub-question (support) and will be explicated through the use of the following sub-categories: institutional policy for students with disabilities and learning support services. Support services offered to students with a hearing impairment at the university is largely inadequate, including both human and technical support. Participants were also mostly unaware of the availability of support services as well as any policy documents related to their rights as students with disabilities. Furthermore, the uptake of any support offered to the participants of this study was also low.

### **5.7.1 Institutional policy for students with disabilities**

This category refers to the level of awareness of an institutional policy for students with disabilities. The majority of the participants were not aware of the existence of any policy related to students

with disabilities. Only one student knew about the existence of the policy but had not actually read it:

*I know they have some kind of policy, but I am not sure what it entails though*  
(P 4: S4\_F.doc – 4:84, Astrid).

A further two participants also expressed their lack of awareness regarding the university policy for students with disabilities:

*No [I don't know about any policy], but knowing the university, there will be a policy of some sorts*  
(P 3: S3\_M.doc – 3:95, Paul)

and

*I don't really know about any policies or support at the university*  
(P 7: S7\_F.doc – 7:19, Noelene).

### 5.7.2 Learning support services

This category refers to the awareness and uptake by students with hearing impairment of the support services offered by the disability unit at the university as well as their experiences thereof. Only a few of the participants were aware of the existence of the disability unit, although they were not sure which support they could receive. Generally, therefore, awareness was low, as expressed by Colin:

*Not at all, I never even knew there was a support system for the students*  
(P 5: S5\_M.doc – 5:10, Colin).

Only two participants, after experiencing academic difficulties, sought assistance from the staff at the disability unit. Furthermore, the students with hearing impairment often did not report to the disability unit or did not make use of their services unless they experienced a problem:

*No, so far I haven't felt the need; so far I haven't had a problem*  
(P 6: S6\_M.doc – 6:15, Stewart).

One of the participants requested a 'note-taker', but he still experienced difficulties, especially with understanding and interpreting the notes of another student and eventually he stopped making use of the accommodation. Barry shared his frustration:

*For example I went to them to help me because it was difficult for me to try and take notes in the class while I listened to the professor, it is impossible for me. So I went to them to help me and they helped me by getting some people to take notes for me; they would pay for those people to take notes, they call it 'note-takers'*  
(P 1: S1\_M.doc – 1:12, Barry).

A few of the participants related some negative experiences when interacting with staff members at the disability unit, such as lack of support:

*No, they did not really bother to ask me about my deafness; they just assumed that I was deaf and it did not really have an impact on them [staff at the disability unit]*

(P 5: S5\_M.doc – 5:8, Colin).

Merle also explained her feelings about more being done (i.e. more support available) at and by the university for students with visual disabilities than for students with hearing impairment:

*No. I get the feeling that there is much more things in place for the students with visual disabilities than for hearing disabilities. You can see that from all the students that are here that have visual disabilities ... but then they asked me if there is any programmes that they can put on for me and then they said, as they have Jaws that they put on for the students with visual disability and then they, because many times the computer is too soft, isn't there something that you can make it louder and they say they don't have anything ... that was bad for me because they give this laptop, which is great, I appreciate it, but they don't do anything for my specific need which is why they give it to me and if they can be more focused on the needs of deaf students, that would be great (P 2: S2\_F.doc – 2:81, Merle).*

On the other hand, some positive experiences were also related. One participant felt that the staff at the disability unit were helpful, especially in referring him to the correct hearing healthcare professional:

*It was through them that I was actually fitted with hearing aids (P 3: S3\_M.doc – 3.21, Paul).*

The university also offers a support group for persons with disabilities, which is managed by a committee consisting of both students with disabilities and students without any disabilities. The primary role of this support group is to arrange social activities and to provide ongoing support to the students. Of the two students with hearing impairment who attended this support group, one shared some encouraging remarks regarding her experiences:

*... especially like in [name of support group], like with other students that struggle, it is much easier then you can speak to them and they know what you are going through ... Yah, it connects those people. Then I started being part of [name of support group] and this opened communication [with the disability unit] because they gave them [the disability unit] my information (P 2: S2\_F.doc – 2:138, Merle).*

First-year orientation proved to be difficult for most of the research participants. They expressed difficulties with hearing due to large groups, poor acoustics, unavailability of sound equipment and verbal presentations with no supplemental audio-visual materials or handouts.

*When there was something that I couldn't hear ... I had a friend with me, a girl that I actually met on that very first day and she would just quickly tell me that's what he said ... No, there weren't any [handouts or slides]; it was all verbal (P 4: S4\_F.doc – 4:9, Astrid).*

Other types of academic support which the students used included the mentoring and tutoring programmes, both of which are offered to all university students, not only students with disabilities. Communication between the first-year mentors and the disability unit was also good. One participant expressed appreciation for the interest shown in her well-being by the mentor, which also served as a motivational factor:

*I developed a very good relationship with my mentor where she was continuously asking me how I was doing and she would motivate me to study and so on*

(P 2: S2\_F.doc – 2:36, Merle).

Another student, Colin, recommended that the programme continue beyond first year (have a choice to continue) as it was extremely helpful:

*The mentoring programme works like a bomb, but they only do it for your first year. Come your second, third and fourth year, you are on your own. That is why it is so nice*

(P 5: S5\_M.doc – 5:37, Colin).

Barry, who had disclosed his hearing impairment and requested the services of a note-taker from the disability unit, made the following recommendation regarding their support services.

*They [staff at the disability unit] could make the relationship comfortable between the student and the professor. Tell them what they can do if they have a problem. [At orientation] they could have given more information, for example, about the marks because of the first year, when all the first years came they told us about the mark - about how much per cent you need to pass the course, the student shouldn't be promoted who missed out ... so the office could make certain they give us all the information we need*

(P 1: S1\_M.doc – 1:63, Barry).

### **5.7.3 Summary**

In summary, the third major finding that emerged from this study was that the support services offered at the case study university to students with a hearing impairment were largely inadequate, in terms of both human and technical support. In addition, the participants were mostly unaware of the availability and types of support services as well as any institutional policy documents related to their rights, reasonable accommodation, and such.

## **5.8 FINDING 4**

This finding is related to the third research sub-question (barriers) and will be explicated through the use of the following sub-categories: barriers to learning and barriers in assessment. A number of barriers related to learning and assessment were experienced by all of the participants. These barriers were largely associated with communication, teaching practices and assessment, which had a resultant negative impact on both the students' educational experiences as well as their potential academic success.

### **5.8.1 Barriers to learning**

This category refers to various barriers to learning, which includes communication barriers as well as assessment barriers, experienced by the students with hearing impairment. The communication barriers related to their primary mode of communication, namely spoken language and the audibility thereof. In the teaching environment (classroom, lecture theatre, auditorium), most of the participants experienced poor audibility of sound as the lecturers either did not make use of a microphone, the audio equipment was not available in the venue or it was faulty:

*If the microphone is switched off I can hear her talking, but I can't make out what she is saying*

(P 3: S3\_M.doc – 3:49, Paul).

One participant, Paul, explained his difficulties with making notes whilst trying to listen to the lecturer when the sound quality is poor:

*Sometimes it is hard to make notes especially if the sound is not good. When you look down to write you miss out sometimes on what she is saying*  
(P 3: S3\_M.doc – 3:19, Paul).

Barry also shared how he felt that he had to work so much harder after class because of the amount of information that he missed (hearing) during class:

*Because you miss out a lot of times, a normal hearing person will hear and understand what the professor is saying, but with a hearing impairment you miss out a lot and you have to put more time into your work*  
(P 1: S1\_M.doc – 1:160, Barry).

Another participant expressed experiencing severe frustration when he could not hear during class because of a lecturer speaking indistinctly. This created a communication barrier, not only for him, but even for all the 'hearing' students in the class:

*The frustrating thing is that the lecturer doesn't really speak very clearly. My friends with normal hearing even struggle to hear the lecturer*  
(P5: S5\_M.doc – 5:146, Colin).

Communication barriers were also experienced in the lecture venues due to

- poor lighting when watching audio-visual materials resulting in students not being able to lip-read;
- the unavailability of subtitles for video materials;
- high noise levels in the class;
- difficulties when having to communicate in group discussions; and
- difficulties when lecturers alternated between two languages whilst teaching, for example, switching between English and Afrikaans.

Furthermore, the large class sizes were also problematic, both in terms of acoustics, ambient noise and often the student not being able to secure a seat towards the front of the class (necessary for both hearing and lip-reading purposes) as preferential seating is not provided for students with disabilities. As one student explained:

*It is just the size, the classes are really, really huge. Some classes are about 350 people in them and it is kind of cramped and if you sit at the back it is a problem, if you can get a seat in the front it is fine or if the lecturer uses a microphone it is okay*  
(P 5: S5\_M.doc – 5:76, Colin).

A number of students also mentioned their inability to follow class discussions, either because of their physical location (seating position) in class, for example sitting too far towards the back and a student in the front asks a question and they are unable to lip-read or not being able to hear because of the large distance. Stewart describes his experience in this regard:

*I usually don't pick it [hear questions asked by other students] up, no. If I am sitting in the front, I sometime don't even know who is asking the question. I have to turn around and look and try to see where it [the sound] is coming from*  
(P 6: S6\_M.doc – 6:96, Stewart).

Many of the participants also experienced barriers to learning related to teaching methodology, such as when lecturers face the board or move around continuously whilst speaking. This is especially problematic as the students rely extensively on lip-reading:

*The other day in [subject] there was a lecturer who was walking up and down all the time and I couldn't lip-read*  
(P 7: S7\_F.doc – 7:89, Noelene).

Barry also describes his experience:

*... some professors they write on the board with their back turned and sometime I think "what did he tell us about now?" Sometimes in [subject] class, the professor says you must do that for homework and hand it in tomorrow and I don't hear the instruction, I miss that*  
(P 1: S1\_M.doc – 1:367, Barry).

For many students, listening, lip-reading or watching a video and trying to make notes at the same time was particularly difficult, leaving them with dilemmas as to which to concentrate on. This frequently resulted in them missing lots of information and having notes of poor quality.

Additional barriers to learning mentioned by the participants included: class notes and handouts not being available electronically in advance to allow for pre-class reading and some lecturers' unwillingness to make electronic notes available at all.

### **5.8.2 Barriers in assessment**

Certain assessment practices created barriers for the students. Most of the participants expressed some negative experiences related to the taking of assessments. The most important of these was the fact that often, instructions were given verbally by the invigilator instead of being written on the board. The students therefore had difficulties understanding the announcements made at the start of assessments, which resulted in them not receiving some very important information, such as alterations to questions or question numbers. One participant also felt that a lot of time was wasted having to receive individual support (after the oral instructions had been given) from the invigilator, which results in high levels of anxiety due to reduced time for completion of the actual assessment. Furthermore, students with hearing impairment reported not being able to rely on their peers for guidance, as is usually the case, because of the strict assessment conditions. Merle and Paul explained the barriers which they face during assessments:

*Sometimes it is difficult to hear them, because it is a test environment so we can't ask the person next to us and then they can't always, the invigilator can't always come to us to answer our questions, so it takes a lot of time to ask the questions and it takes a lot of time for them to come to me and the other students have already started writing and I can't start writing until she has come to me, so that is a bit difficult, so I understand that we can't ask the people next to us because it is a*

*test. I get a bit anxious, because I feel helpless, as soon as they come to me and explain to me I am fine*

(P 2: S2\_F.doc – 2:95, Merle).

*Sometimes in the venue, the invigilators, when they give instructions, because most of the venues are large, like the engineering faculties, normally they don't use the microphone and if you don't get a seat in front then it is quite problematic to ask something, being a test you can't just lean over and ask the guy next to you "what did she say?"*

(P 3: S3\_M.doc – 3:62, Paul)

### **5.8.3 Summary**

In summary, the fourth major finding that emerged from this study indicated that a large number of barriers related to learning and assessment were experienced by the participants. These barriers were mainly associated with communication, teaching practices and assessment. Both the educational experiences and the potential academic success of the students are impacted by these barriers.

## **5.9 FINDING 5**

This finding is related to the third research sub-question (coping strategies) and will be explicated through the use of the following sub-categories: communication and learning strategies, as well as assessment and personal coping strategies. Students with hearing impairment employ a variety of academic and personal coping strategies to support their needs in higher education. At the forefront of these are communication and coping strategies for learning and for assessment, as well as personal coping strategies, which include self- and peer-reliance as well as personal motivation.

### **5.9.1 Communication and learning strategies**

Students with hearing impairment make use of a variety of communication and learning strategies. In addition to making use of hearing instruments (hearing aid/s and/or cochlear implant/s) to amplify sound, the most important strategy mentioned was the need for electronic summaries of information presented during the lecture, making use of lip-reading and having to focus and concentrate more when necessary, such as when high levels of background noise occur.

All of the participants expressed the importance of the availability of electronic notes downloadable from the e-learning platform, preferably available in advance, to allow them to read the materials before class, allowing familiarisation of terminology and some preliminary understanding of various concepts. This makes it easier for the students to 'fill in the gaps' when they miss hearing information during the lecture. Below, Colin describes the usefulness of electronic notes:

*... so I really do rely on the PowerPoint notes that they have on WebCT as it explains the stuff to you. It is easier for me if I go afterwards [after class] and look through it again, then it kind of makes more sense because he does a lot of examples in class, so the PowerPoint notes are more theory, if*



*I can explain it like that, and if you can look at the PowerPoint slides and understand the theory and see how it is applied in class, it sort of makes sense*

(P 5: S5\_M.doc – 5:52, Colin).

*I wouldn't recommend just relying on the text book – the best form of written work you want to study is the PowerPoint presentations because that is the exact work they are covering and it explains the stuff well and some of the text books there are mistakes in it. Like they would explain a concept this way, where is incorrectly explained, so you can't rely completely on the text book; it is better to use the PowerPoint*

(P 5: S5\_M.doc – 5:93, Colin).

The above discussion is supported by the information obtained from the questionnaire – all seven participants take their own notes in class (as they have difficulties working with notes taken by other students in their class because of personal interpretation) and they make use of electronic notes, as a supplement to their own class notes.

**Table 5.4: Question 22 from the student participant questionnaire**

<b>Q22. How do you get information during your lectures at a 'hearing university'? Select all the methods that you have used.</b>	
Take my own notes	S1, S2, S3, S4, S5, S6, S7
Retrieve class notes and PowerPoint presentations from e-learning platform e.g. WebCT	S1, S2, S3, S4, S5, S6, S7
Do not take notes; get all I can through lip-reading and/or what I can hear	S3
Copy notes from the person next to me	S5
Borrow notes from another student	S7
Ask someone to take notes for me	-
Ask to use lecturer's notes	-
Make recordings of lectures and either someone/computer transcribes for me	-

The skill of lip-reading is useful as a communication strategy during lectures. In addition to the student with a hearing impairment listening by using his or her amplified residual hearing, the use of lip-reading also enables the student to 'fill in the gaps' of missed information. Noelene shares her communication strategy:

*Yes, a lot [rely on lip-reading]. I rely heavily on the presentations, WebCT and lip-reading ... Well, I will listen a little, write a little and if he [the lecturer] speaks then I miss out what he is saying. I alternate between listening and writing*

(P 7: S7\_F.doc – 7:42, Noelene).

The questionnaire data supports the abovementioned, namely the perceived importance of lip-reading in a predominantly 'hearing' university. Five of the seven participants agreed that they found the skill of lip-reading either absolutely necessary or very helpful.

**Table 5.5: Question 29 from the student participant questionnaire**

<b>Q29. In your opinion, how important is the ability to lip-read for academic success in a 'hearing' university?</b>				
Absolutely necessary	Very helpful, but not absolutely necessary	Somewhat helpful	A little helpful	Not at all helpful
S2, S7	S1, S3, S6	S4, S5		

Almost all of the participants mentioned the need to be seated towards the front of the classroom in order to be closer to the lecturer to enhance audibility as well as to be able to lip-read. Some students mentioned that they preferred to sit in rows two to four, rather than in the very front row as they felt 'too close' to the lecturer in the first row. As one student explained,

*It also depends where I sit in the class. If it is towards the front then I can hear*  
(P 1: S1\_M.doc - 1:127, Barry).

In addition to self-reliance:

*You must want to succeed and you must not give up ... if there are struggles you must really work hard to overcome it*  
(P 2: S2\_F.doc – 2:229, Merle),

relying on their peers was also an important coping strategy mentioned by most of the participants. Colin expresses his reliance on his friends as follows:

*Basically I got a lot of information from my friends because I didn't pick up everything but I picked up a lot by myself. They just made sure that I know when things have to be handed in or they would make me aware of tests we were writing etc. I usually just ask my friends when I need help. Basically I ask my friends, I ask them to help me if I struggle or if I couldn't hear what he said. I always ask them about important tests and upcoming things that I might have missed and about the only thing I use ... Some of them tell you orally when it is and what it is about, if I can't hear I ask my friends*  
(P 5: S5\_M.doc – 5:39, Colin).

The students with hearing impairment also made use of a number of additional strategies to support their academic learning, such as making use of the tutoring system, student mentors and support (advice) from their parents. Merle explains the value of the tutor support which she received:

*In my first year, I had a tutor, we have lectures and then we have tutorials, so subjects that I struggled with I went for extra tutorials with my own tutor and it was usually one-on-one and I found that really helpful especially for [subject], I struggled a lot so I had a tutor for that, and it helped a lot*  
(P 2: S2\_F.doc – 2:50, Merle).

### **5.9.2 Assessment strategies**

Assessments are usually quite stressful for hearing students, but for students with a hearing impairment it is even more so, mostly because of the fear of not being able to hear important information related to the assessment, such as correction of question numbers and the amount of time (announced verbally) left for writing. The most important coping strategies that they exploit are interacting personally with the invigilator, reading the questions in both languages and using the extra time.

During an assessment, invigilators often give instructions verbally rather than writing them on the board. The participants reported that they are often not able to hear all of these verbal instructions; therefore, as a coping strategy, they usually sit where they have easy access to the invigilator to facilitate personal contact, or if they are assigned a particular seat, they would indicate, by raising a

hand, that they require assistance. Alternatively, the students would attempt to ascertain what their fellow students are doing, simply through observation. Stewart explains his assessment coping strategy:

*I usually sit on the side where I can easily get an invigilator, I won't go and sit in the middle where you won't be able to get out so I always try and sit on the side so I can get hold of the invigilator*  
(P 6: S6\_M.doc – 6:124, Stewart).

One of the consequences of hearing impairment, especially pre-lingual loss (before the acquisition of language), is difficulties with complex language or sentence structures. The participants explained a method employed to attempt to overcome this barrier:

*At school our papers were also bilingual, so I also first read the Afrikaans and then the English which helped me understand it better, especially in Mathematics and things like that. I still do that now*  
(P 2: S2\_F.doc – 2:94, Merle).

Only one of the seven participants reported making use of extra writing time for assessments:

*Yes [I use the extra time], to understand the questions. I get 10 minutes per hour*  
(P 1: S1\_M.doc – 1:289, Barry).

### **5.9.3 Personal coping strategies**

This category refers to personal (individual) coping strategies that are used by students with hearing impairment to try to overcome the various educational barriers which they encounter at a 'hearing' university. Some of these strategies consist of lecturer interaction, reading of academic materials (textbooks and notes) before class and focused concentration.

Due to the high volume of content that is covered in class, it is important for students with hearing impairment to keep up by maintaining a concerted effort. Often, when experiencing difficulties with the content, they either remain after class and request an explanation immediately or they make an appointment to meet one-on-one with the lecturer to clarify what they had missed hearing in class or to explain the work that they were experiencing difficulties with. As one student explained:

*If I had a problem I would go afterwards and ask the lecturer to explain to me because I couldn't quite understand or hear it but that is about it. So I basically rely on that and if I have a problem then I go and ask him*  
(P 5: S5\_M.doc - 5:34, Colin).

As discussed in 5.9.3 above, two of the most important personal strategies used by students with a hearing impairment to cope are sitting in the front of the class and using lip-reading. This was substantiated by the data from the questionnaire, as can be seen in the following table.

**Table 5.6: Question 27 from the student participant questionnaire**

<b>Q27. Which 3 (most important) strategies should students with hearing impairment employ to make it possible to perform well academically at a 'hearing' university?</b>	
<b>Always sit in the front row in class</b>	<b>S2, S3, S4, S5, S6, S7</b>
<b>Maintain or improve skill in lip-reading</b>	<b>S2, S3, S4, S7</b>
Spend more time studying than most hearing students do	S1, S5
Ask the lecturer for his/her class notes before lectures, to prepare in advance	S1, S2
<b>Other:</b> (added in by students) Go and ask the lecturer after class to explain about things which the student did not understand during the class	S1, S5
Maintain or improve speaking skills	S3
Learn not to be bashful about asking to borrow hearing students' class notes	S7
<b>Other:</b> (added in by student) Make sure they have a friend or classmate to help them	S5
<b>Other:</b> (added in by student) Should always inform lecturers about the hearing impairment when they have problems	S6
<b>Other:</b> (added in by student) Make use of private tutors or mentors for particular areas where they struggle	S7
<b>Other:</b> (added in by student) It would be great if notes can be provided, since we cannot hear while looking down to write	S7
Take less than a full load of subjects each year/semester (extended graduation period)	-
Do more outside reading than most normally hearing students do	-
Go to lecturers before classes begin and inform them of one's hearing impairment so that they will know what to expect	-
Not try to take notes in class but get what one can through lip-reading and/or through what one can hear	-
Ask to borrow the lecturers' notes (after class)	-

In addition to these, working through reading materials and textbook chapters before lectures are also important strategies that are used. Pre-class reading is highly beneficial as the students are exposed to and learn new vocabulary, concepts and content before the class, which makes it easier for them to follow the content of the actual lecture. Paul explains the usefulness of this strategy:

*Surely with the whole explanation, to be able beforehand to see what terminology might be used, so if you are familiar with the words that might be used in class, it is not when you hear a word "what did she say, did I hear it correctly"; you will know that that words fits into the whole scenario or not. I prefer to read in advance, so in the class it is rather recap during class than afterwards. That helps with new work in class, when there is new terminology and stuff, making sure you understand what the lecturer is saying. If you can go and read through the work the day before, when you are in class you will know what the teacher is talking about and if you read through something and you see okay there is something you don't understand then you know what explanation to look out for in class and you know what questions to ask them if there is something you are struggling with*  
(P 3: S3\_M.doc – 3:54, Paul).

The participants explained how they made use of focused concentration during lectures and other difficult listening situations, to assist them to understand what is being communicated. This high

level of concentration is also required when trying to make notes and listen whilst the lecturer teaches, as Astrid explains:

*... deaf people have to concentrate specifically on what someone is saying. Also when I make notes in class, at the same time I make notes, I have to really concentrate on what the lecturer is saying*  
(P 4: S4\_F.doc - 4:89, Astrid).

Additional personal (intrinsic) coping strategies employed, in order of importance, include

- memorisation (using visual images/connections) during studying;
- switching off their hearing instruments to improve concentration;
- self-study after each class from the textbook to ensure a high level of understanding of the content; and
- strong time-management skills and diligence.

As one participant shared:

*I tried to work harder and I tried to always keep a schedule and plan my things so I can finish everything and that really helped me a lot*  
(P 2: S2\_F.doc – 2:214, Merle).

Character traits such as self-reliance and determination also assisted their academic efforts.

#### **5.9.4 Summary**

In summary, the fifth major finding emanating from the data showed that students with hearing impairment make use of a large number of academic and personal coping strategies in order to support their needs at university. These include communication, learning, assessment and individual coping strategies, which depict a reliance on themselves and their peers, as well as a strong motivation to succeed.

### **5.10 FINDING 6**

This finding is related to the fourth research sub-question. A number of critical success factors were advocated for by the participants to assist them in achieving their maximum potential. The most pertinent of these were within the scope of curriculum flexibility as well as improved communication and interaction with lecturers.

#### **5.10.1 Curriculum flexibility**

This category refers to factors related to teaching, but more specifically to the flexibility of the curriculum, suggested by the students, to accommodate their specific needs as a result of their hearing impairment. Curriculum (in its broadest sense) includes what is taught, the medium of instruction, how the curriculum is organised and managed, the methods and processes used in teaching, the pace of teaching, the learning materials and equipment used, the nature of required fieldwork experiences, as well as how learning is assessed (SA, DoE, 2001a:9).

The most important critical success factor related to communication. The participants felt strongly that the lecturers should always make use of a microphone (with every classroom being equipped with high-quality speakers) and that the university should ensure that the equipment is available in all larger lecture venues and that equipment is in perfect working order:

*They should make certain, the universities should make certain that all the lecturers use the microphone and that the things, that it works*  
(P 2: S2\_F.doc – 2:98, Merle).

Paul also expressed the importance of the use of sound systems in teaching venues:

*Especially in the large venues, the sound systems are so important ('kardinaal'), not only for the students with a hearing impairment but for all the students, many of them struggle to hear too*  
(P 3: S3\_M.doc – 3:72, Paul).

Furthermore, the participants suggested that lecturers should repeat questions asked and answered in class, their interactions with students with hearing impairment should preferably be one-on-one, and they should make use of email for communication outside of normal lecture time.

Astrid suggested some solutions:

*... maybe when students are talking in class, they should talk loud and clear or alternatively when students don't do then the lecturer should repeat what the student at the back has just said for everybody to hear, but there are a lot of lecturers who don't that*  
(P 4: S4\_F.doc – 4:42, Astrid).

Teaching methodology was also often a communication barrier, such as when lecturers face the whiteboard and write whilst speaking which prohibits lip-reading:

*They should try and change their way of teaching*  
(P 5: S5\_M.doc – 5:140, Colin),

and

*Like someone with a hearing impairment, when they talk they can face them so they can lip-read for instance*  
(P 6: S6\_F.doc – 6:179, Noelene).

There is also a need for lecturers to attend training regarding accommodating the needs of students with hearing impairment, as expressed by Merle below:

*I assume they would be, but I don't think that from what I see, they should be trained, if they were trained, they should be trained better. I know there is a centre for diversity and multiculturalism and that is more focused more on the personnel and so maybe if they added a workshop or something specifically with students with disabilities and with students from other diverse groups as well it would be quite good*  
(P 2: S2\_F.doc – 2:157, Merle).

Some of the participants suggested that lecturers should make glossaries available so that new and complex terminology could have a simplified textual explanation, thus facilitating understanding. Merle explains the importance of glossaries:

*Yes, and some of them we do have that [have glossaries], but not all, I really, really appreciate it, because like many times there are academic terms and if they just carry on about it you sort of get lost, so that would be good ... Yah, because many of the things are only in English and I know it is difficult to translate academic terms to Afrikaans sometimes, but it would be good if they could all do that*

(P 2: S2\_F.doc – 2:91, Merle).

Furthermore, recommendations were made regarding the provision of detailed notes electronically and the advance availability of these notes, allowing for pre-class reading. Students with hearing impairment require more detailed notes due to them 'missing out' on important academic content due to their hearing impairment. This may be due to factors such as poor acoustics in the venue, high levels of background noise, poor lighting leading to inability to lip-read, etcetera. As one student explained:

*Yah, it would really help if his slides were complete and available on the site beforehand. I miss such a lot of work and it is very important to know what is going on ... it would be good if they could place full comprehensive slides on WebCT*

(P 7: S7\_F.doc – 7:125, Noelene).

Some of the participants also suggested particular recommendations related to assessment practices, such as the invigilator being informed in advance regarding a student with hearing impairment and therefore positioning him- or herself close to where the student is seated for ease of access, such as to explain additional instructions individually, writing all instructions on the board, making use of a microphone and allowing for extra time before starting the assessment to clarify any instructions. Invigilators should also be sensitised regarding the needs of students with hearing impairment by undergoing training.

### **5.10.2 Disability awareness and interaction with lecturers**

Three important factors were offered by the participants with regard to teaching. Firstly, lecturers should be informed by the disability unit (with the student's permission) regarding the student's hearing impairment and how he or she should be accommodated.

*I think probably one of the main reasons is that the lecturer has to know, different classrooms, the lecturer has to know that this student or these students have a hearing impairment, so they can perhaps pay more attention to them so they are getting the work*

(P 6: S6\_M.doc – 6:126, Stewart).

Secondly, lecturers should understand the communication needs of students with hearing impairments and enquire, from time to time, after their academic well-being:

*I would like them just to make sure once in a while that I am coping*

(P 2: S2\_F.doc – 2:82, Merle).

Colin also expresses the need for understanding on the part of the lecturer:

*They should be willing to see you after class and be patient with you because you have a hearing impairment; things are harder for you. Yes, that [monitoring progress] would help a lot. I think the lecturers should talk to the students with learning problems and ask if they need anything from their side, if there is anything they could do differently to accommodate them. Let them know that he can accommodate them in a way to help them*

(P 5: S5\_M.doc – 5:90, Colin).

### 5.10.3 Physical environment

Participants suggested that, with regard to the physical environment, smaller class sizes, where possible, should be introduced to accommodate the needs of students with hearing impairment:

*That is why I say small classes are better*

(P 7: S7\_F.doc – 7:179, Noelene).

They also suggested that one or two rows of seats in the front of the venue should be reserved for them, as well as for those with other impairments. Part of the lecturer's responsibility should be to educate the student body regarding respecting the needs of these students, as expressed by Merle:

*Lecturers should also say to the other students that they shouldn't sit there as this is reserved for the students with disabilities*

(P 2: S2\_F.doc – 2:178, Merle),

and by Colin:

*... to make sure there is a place where I can sit in the front that would have been nice as I sometimes has to squish [sic] in the back and then I can't really hear what is going on*

(P 5: S5\_M.doc – 5:45, Colin).

### 5.10.4 Other critical success factors

Regarding the disability unit at the specific university where the research was done, the participants strongly recommended that they:

- provide more support for students with a hearing impairment:

*I definitely think that they should give more support to hearing impaired students*

(P 2: S2\_F.doc – 2:134, Merle);

- facilitate the relationship between student and lecturers:

*They could make the relationship comfortable between the student and the professor. Tell them what they can do if they have a problem*

(P 1: S1\_M.doc – 1:161, Barry),

- provide the lecturers with information and guidance on how to support students with a hearing impairment; and
- monitor the progress of the students and provide a 'buddy' for new students.



The participants also felt that the barriers experienced during first-year orientation could be reduced by making groups smaller, using microphones, making speakers aware of people with various disabilities in the audience and making use of electronic slide shows and providing handouts. Colin and Stewart shared their sentiments:

*I would like the lecturers in my first year to come to me and talk to me and ask me what I need from them like giving me their email address or cell phone number*  
(P 5: S5\_M.doc – 5:128, Colin).

*When we went there [to orientation meeting for students with disabilities] the most disabilities we saw were visual ... I think for a start, you can make the people that are in charge [of orientation] more aware that someone, or that they have a group of people, make the aware there is somebody with a severe hearing impairment, or someone with a disability, actually make them aware, so that they can always be on the lookout, and the groups should be smaller*  
(P 6: S6\_M.doc – 6:15, Stewart).

Furthermore, suggestions were made regarding the provision of emergency alerting devices at residences where students with hearing impairment are residing. This would allow such students to feel safer, knowing that they will be individually alerted without having to rely on a fellow student, as expressed by Stewart:

*... definitely [alerting devices] would be more helpful in emergencies at res*  
(P 6: S6\_M.doc – 6:39, Stewart).

Colin also shared the same feeling:

*The problem is you can't really hear sounds so if there is an emergency of some sort it is best to have a device that is like a cell phone on silent mode that vibrates when someone calls you, or something like that. One needs flashing lights, something like that*  
(P 5: S5\_M.doc – 5:31, Colin).

In addition to the abovementioned teaching recommendations, students also suggested certain strategies when completing the questionnaire. The top three suggested support measures were: the provision of academic tutors, keeping classes small (to facilitate hearing ability) and lecturers making extra copies of their notes for the students.

**Table 5.7: Question 25 from the student participant questionnaire**

<b>Q25: Which 3 (most important) steps should a university take to help students with hearing impairment in their academic work?</b>	
<b>Provide special tutors to help with academic work outside of class time</b>	<b>S1, S2, S4, S5, S7</b>
<b>Keep classes small</b>	<b>S2, S3, S4, S5</b>
<b>Make extra copies of lecturers' notes so that students could use them</b>	<b>S2, S3, S7</b>
Pay hearing persons to take lecture notes for students with hearing impairment	S1, S7
<b>Other:</b> (added in by students) The university should attend to their speaker systems in some classes, even normal hearing students struggle in some venues and all lecturers must wear a microphone.	S3, S5
Inform hearing students and faculty of the barriers faced due to your hearing impairment so that they will know and understand what to expect	S4
Provide counsellors and psychologists who are familiar with the special problems faced by students with hearing impairment	S1
<b>Other:</b> (added in by student) Make sure that there is space in front of the class for hearing-impaired students	S5
<b>Other:</b> (added in by student) The university should take greater responsibility in assisting hearing-impaired students	S6
<b>Other:</b> (added in by student) I tend to miss announcements made by the lecturers during class, it would be great if a lecturer can email me personally e.g. in case I missed an announcement about a test.	S7

### 5.10.5 Advice for new first-year students with hearing impairment

During the interviews, the participants, were asked which advice they could offer to incoming first-year students with hearing impairment and who may be facing similar types of dilemmas as themselves. In terms of personal characteristics, they suggested the importance of being fully bilingual, the need to work hard, having a positive attitude, pre-class reading and keeping up with the volume of work on a daily basis. Regarding support, incoming students were advised to attend support groups for students with disabilities, ask the lecturer for assistance when necessary, interact in class when not understanding the work, make use of the mentoring programme and the need to find good friends to support them. They also recommended that students with hearing impairment should stay in residence to improve social interaction. Some suggestions are shared by Stewart and Noelene below:

*If they do experience problems and they are continuous the first thing is to go the lecturer and inform them that they have a disability, inform them that if you for instance talk like this it would help it would make it much easier for me to learn. They do have to make use of WebCT, lecturers prepare slides and they prepare lecture notes and they have to make use of that. They won't always hear the lecturer speaking; they will get an idea of what they are working on from WebCT*  
(P 6: S6\_M.doc – 6:148, Stewart).

*Just sit in front and take notes, they are very important. You must never do a half a job, at least do a part of the work if you don't understand and get some marks. Talk to the lecturers if you are not sure, that is very important. Make an appointment or see him after class if you are struggling. Sit in front - these are the most important bits of advice*  
(P 7: S7\_F.doc – 7:97, Noelene).

Referring to Table 5.8 below from the questionnaire data, when participants were asked which factors they considered critical for their success, the top three items all related to self-reliance, then disclosing their disability as well as access to electronic notes and getting assistance from their peers.

**Table 5.8: Question 33 from the student participant questionnaire**

<b>Q33. Which factors do you think are necessary to enable you to be successful academically each year which will culminate with you graduating?</b>	
<b>Believe in oneself (success is up to oneself)</b>	<b>S2, S3, S4</b>
<b>I must ask if I struggle (know when &amp; where to get help)</b>	<b>S2, S6, S7</b>
<b>Self-study after class</b>	<b>S1, S2, S3</b>
<b>Inform lecturers regarding hearing impairment</b>	<b>S6, S7</b>
<b>Access to electronic notes (really helps)</b>	<b>S5, S7</b>
<b>Get help from my friends, e.g. notes</b>	<b>S5, S7</b>
University must be accommodating of my needs	S2
Lip-reading skill is very important	S7
Self-discipline	S1
Don't let others treat you differently	S4
I must work hard (do more than is asked from me)	S2
Have a strong will	S5

#### **5.10.6 Summary**

In summary, the sixth major finding to emerge from this study was related to achieving academic success. The participants made a number of recommendations which could assist them in achieving their academic potential. These recommendations included factors related to curriculum flexibility, disability awareness, interactions with lecturers and the physical environment.

#### **5.11 FINDINGS: INTERVIEW WITH SUPPORT STAFF MEMBER FROM DISABILITY UNIT**

The findings that emanated from the interview with the support staff member from the disability unit at the university are discussed under the following sub-categories: hearing impairment and disclosure, curriculum transformation, university support, educational barriers, coping strategies and critical success factors.

##### **5.11.1 Hearing impairment and disclosure**

The participant emphasised that the registered students with a hearing impairment were oral and they did not make use of South African Sign Language (SASL), nor would the university be able to provide Sign Language interpreters in such a case. These students are furthermore required to supply their own assistive listening devices such as hearing aids/cochlear implants and FM systems, as none are available through the university. Regarding students disclosing their hearing impairment and coming forward to seek support, the participant felt that

*... students [with a hearing impairment] are not always open, some of them just want to be like everybody else, they don't want to speak about [their hearing impairment]*  
(P 8: O1\_F.rtf – 8:10)

and therefore not many of them contact the disability unit looking for support:

*We get very little [students requesting support] in fact ...*  
(P 8: O1\_F.rtf – 8:82).

The finding indicates, like the student participant data, that the students with hearing impairment at the case study university identify as being 'hearing' and they are reluctant to disclose their hearing impairment.

### 5.11.2 Curriculum transformation

**Teaching and learning support:** The attitudes towards and support provided to students with hearing impairment vary from lecturer to lecturer. Some lecturers are proactive and understanding whilst others are not prepared to assist at all:

*And then I would have a lecturer, well this was about three or four years ago, who said to me, "I only have one in my class, must I now keep the lights on for one student for the PowerPoint?"*  
(P 8: O1\_F.rtf – 8:32).

Mostly, it was felt, that there is a willingness to assist but little effort is actually made to accommodate the needs of the students. Furthermore, lecturers often forget about the needs of these students and have to be reminded constantly, either by the student or the disability unit:

*I think, I almost want to say, I hope that there is [an openness to accommodate students with disabilities]. You know, I think there is the willingness, but it goes hand in hand with consciousness to do it. You can just say you are willing to, but you may not be conscious about it, then it actually means nothing to me. So, sometimes it seems to me that people are willing, but I don't always get the effort that is required. With willingness comes effort that you need to put it. Once people know about it, some do try ...*  
(P 8: O1\_F.rtf - 8:32).

**Staff development:** As the university does not have a formal training programme for staff, especially regarding teaching students with disabilities, the participant felt that it was important to have this available in the near future. Currently, the Centre for Teaching and Learning, during their orientation programme for new lecturers, presents a one-hour module on diversity, which seems to be completely inadequate.

**Assessments:** The university does not have a system in place where the invigilator would be informed beforehand regarding students who would need, for example, written instructions because of their hearing impairment. Students are advised by staff members from the disability unit to be proactive and to communicate directly with the invigilator should they miss an instruction. Furthermore, students with a hearing impairment may apply for extra (writing) time, which could assist them:

*Extra time is what we also give them. This sort of helps them, sort of, if they need clarification on questions and that, so that they do [can] get. I think that is probably the only accommodation we give them*

(P 8: O1\_F.rtf – 8:42).

The main finding from this interview upheld the notion that curricula remain inflexible and very little curriculum transformation has taken place since first accepting students with disabilities at the university. There seems to be a willingness to change but it is not put into action by lecturers. There is a need for staff development related to capacitating lecturers to be in a position to understand and support the communication and learning needs of students with hearing impairment in their classes. Additionally, it was found that invigilators are not trained to deal with students with hearing impairment during assessments, and the only academic adjustment which is provided is for additional writing time.

### 5.11.3 University support

The participant acknowledged that the university has a generic policy for students with disabilities (not specific per disability) as well as a policy regarding extra (writing) time, and that students with hearing impairment have very complex and individual needs, as opposed to students with other disabilities. There are usually three ways in which students present for support: disclose their disability on their application form; referral from a lecturer or someone from the residence, or the students make contact when they experience problems with which they require assistance. If they disclose their hearing impairment on the application form, they will be contacted (usually via email or SMS) by the disability unit regarding their support needs. It would, however, be more beneficial for the student to meet in person with someone from the disability unit to explain which support can be offered and thus also building a relationship to facilitate future requests for support. One of the student assistants of the disability unit is also an occupational therapist who resides in a university residence. She has a visual impairment which seems to make it easier for the students to speak more openly with her and sharing their difficulties. The barriers that they are facing, with their permission, are communicated to a staff member at the disability unit to assist the student.

The following (limited) support, which was confirmed by the student participants, is available to students with hearing impairment at the university:

- **Academic:** One-on-one academic tutoring (in conjunction with the academic department); a 'buddy' in class who will write notes using carbon paper; a scribe (paid for via donor funding) for practicals, such as when having to interview patients off-campus; provision of a laptop computer for classes to take notes, downloading notes in residence and emailing lecturers; and the use of one of two AudiSee units (for ease of lip-reading in class).
- **Registration:** Students may be registered in advance; a mentor is provided to assist them

A number of **challenges** were also mentioned; substantiated by the student participants:

- In the first few days of arriving on campus, the disability unit is able to offer students quite a high level of support with orientation and registration, but students soon thereafter are faced with various barriers in the teaching environment, which are more complex to overcome.
- University management is reluctant to spend large sums of money on assistive technologies that can only be used by one student with hearing impairment at a time; whereas a Braille embosser, for example, can provide brailled materials for all of the blind students.
- In the university residences, there is no provision for visual/vibrating alerting devices; students should bring their own ('if they can afford it'); disability unit assists with residence applications and facilitates the process.
- Focus on visual disabilities:
  - a support group for students with disabilities hosts an annual fundraising event which only promotes awareness of loss of vision and not other disabilities; and
  - during the orientation week, companies who market technologies for assisting students with disabilities are invited to showcase their products. To date, the focus has been on 'solutions' for visual disabilities:

*Hearing disabilities ... no, it is not one of the offerings. I think also the university's history is one which comes from a very strong Braille tradition and visual disabilities, they almost have an unwritten bias towards that, you know, towards supporting and it has been a problem for certain deaf students and they have said we are discriminating against the 'doves' (the deaf)*  
(P 8: O1\_F.rtf – 8:48).

- The university is not able to provide a special pool of 'human' note-takers due to the high costs involved; students therefore make use of the 'buddy' system where a classmate uses carbon paper whilst writing notes and gives the original (top) version to the student with a hearing impairment. External note-takers are only provided under exceptional circumstances.

Moreover, the participant explained that the disability unit started as a bottom-up development and that it is now time for the university to 'encourage' progress by implementing a top-down approach. She mentioned that the issue of students and staff with disabilities is not 'even' on the agenda of senior management and that people 'on the ground' who are working in the field do not yield sufficient decision-making power to effect real change at the university.

*And again, having spoken to one of the professors who sits in on the senate meeting, you know, came forward that she has to actually say to them "listen here, so what about our special needs students", so I don't think it is even on the agenda at that level, but given the politics and the dynamics at this university, one should I think that you almost only can be on the level to make such inputs, I think that is what is probably frustrating for me is that yes, you can maybe say something*

*but you need to get to the real decisions makers, you know and in some senses I get told, you know, only Deans can or only this one and I have quite a lot of string of people to go through and I want my voice heard*

(P 8: O1\_F.rtf – 8:128).

The participant mentioned the following future improvements:

- With the number of students with disabilities entering higher education increasing year on year, the disability unit intends to track their progress more carefully and will also attempt to encourage more students to make use of the available support.
- To date, only limited post-intervention follow-up has been done via email to the lecturer. Moving forward, a more personal approach will be adopted, liaising individually and jointly with both the student and the lecturer.
- A strong argument was also put forward regarding the mainstreaming of disabilities within the university and the need for executive management to put measures in place to ensure that it takes place, such as deans' having to report on faculty transformation/diversity plans for the next three years.

*One almost wants to see disabilities not as a separate issue but as mainstream...throughout every facet of any institutional organisation. I think the disability unit maybe becomes just a start for that, people just to start thinking like, wow!, there is also this to factor in. They don't just think of it automatically, and I think, yes, it needs to be mainstreamed and that is why I said the disability unit is not the 'be all and end all' and that sort of place that information gets generated and where it sits, but it just starts that process or for raising the awareness. But also one needs to so much have professors that are switched on, we don't have that, and then it's not going to happen as you are not represented in the senate or in the council, and so in that way it can then be mainstreamed. So it's that bottom, we spoke about the bottom-up approach that got the office going and now I think the top down now needs also to start acting...So I think that this university is still very focused on when they think diversity, they still think too much in terms of comfort and probably language given our conflict and they forget that there are people with disabilities, your staff and your students are as actually as much a part of that group ...*

(P 8: O1\_F.rtf – 8:177).

Findings here indicate that limited academic support is made available to support the communication and learning needs of students with hearing impairment at the case study university. The participant mentioned a large number of barriers which are faced by these students, and some suggestions for future improvements to the current situation were made.

#### **5.11.4 Educational barriers**

The staff member from the disability unit interacts extensively with students with varying disabilities and has, over the years, gained knowledge regarding the various barriers to learning which students with hearing impairment face, particularly in the teaching environment. Furthermore, she shared some of her own personal experiences when trying to support the students. Table 5.9 below summarises some of the educational barriers which students with hearing impairment encounter, including the attitudes of lecturers, teaching practices, orientation for new first-year students and other general communication barriers.

**Table 5.9: Educational barriers faced by students with hearing impairment as reported by the participant from the disability unit**

LECTURERS (teaching & attitudes)	<ul style="list-style-type: none"> <li>Although lecturers are informed, via the disability unit, that they will have a student with a hearing impairment in their class, and they are given guidelines on the student's needs and how to accommodate him or her, lecturers forget that the student is there. They have to be constantly reminded by the disability unit.</li> </ul> <p><i>... but I think there is just not always that consciousness, you know, I am always baffled by, it is not like you have a whole lot of students, you have one student. I don't know if this makes it more difficult to remember one student, I would think it is easier, but it seems to me, to remember information needed for one student or adaptation, seems to be a challenge for people. They would say it is only the one student so it is easy to forget, yet I would think, thank goodness you only have the one student ... can you imagine if you had five students and they all had different disabilities. Now you only have one out of a whole bunch of 60. So, it is a challenge, yet I think from where I sit in the office, you know, I think it could be quite easy for them</i> (P 8: O1_F.rtf – 8:30)</p> <ul style="list-style-type: none"> <li>Lecturers are requested to teach and assess differently, but this request is not executed.</li> <li>Requests are made to provide their notes, in advance, via WebCT, but this often does not happen.</li> </ul> <p><i>We try to work in conjunction with the HOD so that they can, you know, give that information over, but you know ... I think it is not quite happening</i> (P 8: O1_F.rtf – 8:30).</p> <ul style="list-style-type: none"> <li>Guest lecturers are not informed about having a student with a hearing impairment in the class.</li> <li>Some lecturers give 'spot tests' with a time restriction and then the lecturer verbally asks the questions:</li> </ul> <p><i>... the disability unit tries to intervene; we asked them to give the student the information beforehand, but this does not always work.</i> (P 8: O1_F.rtf – 8:24)</p>
ORIENTATION	<p>A one-hour presentation on support services for students with disabilities and their parents is provided during the orientation programme each year, during which the needs of persons with hearing impairment are not accommodated nor support information provided:</p> <p><i>It is a very oral session and this year, incidentally, I had one mom at the end of the session come up to me and say, "You mentioned nothing about deafness", and I suddenly just became aware of the fact that our session is so oral. I have used no PowerPoint or anything, but we have made a point that next year we will also have the stuff on PowerPoint, just having the information there</i> (P 8: O1_F.rtf – 8:48).</p>
GENERAL	<ul style="list-style-type: none"> <li>During group meetings, students with hearing impairment experience severe communication barriers and it is up to the students to cope on their own.</li> </ul> <p><i>I would sort of speak to students in terms of hostels, and when they</i></p>



	<p><i>have their meetings, I tell them to speak to the person who running the meeting or sit in the front. I think some probably just don't go to the meetings ... it becomes too much of a hassle, you know, but there are no sort of specific systems in place, there we just rely on the student to look at what they can do, especially in a hostel setting</i> (P 8: O1_F.rtf – 8:157).</p>
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The main ideas emanating from the table above include the following:

- lecturers, despite being informed, are often not supportive of students with hearing impairment;
- attitudinal barriers still exist;
- the first-year orientation programme is mostly oral and hence creates a communication barrier for students with hearing impairment; and
- these students often feel that it is simply their responsibility to manage all of the challenges and to cope on their own.

The participant felt strongly that lecturers need to change their attitudes and should enter into a conversation with the students and find out how they can support them with their learning:

*... just sit back and say "So what is it that I can do or that we can do you know to just bridge that gap that you are experiencing in terms of information?" And I don't think that it comes naturally to staff members to do that. You know it is like: "Jy is die student and so ek moet nou vir jou vertel wat eintlik wat jy nodig het" ("You are the student and so I need to tell you what you actually need") and you must listen, so I think that attitude is a thing that is a block*  
(P 8: O1\_F.rtf – 8:54).

Furthermore, the participant explained that lecturers tend to exaggerate the problems and they become overwhelmed, suggesting that perhaps it is due to high workloads and the stress to publish.

She also suggested that students with a hearing impairment struggle more to receive academic support as they do not 'look' disabled and therefore the lecturers tend to forget about them:

*... they don't see them in a wheelchair and they don't look disabled, they don't look like anything is amiss, so they tend to almost forget, for sure, they almost don't think it is as serious as it is*  
(P 8: O1\_F.rtf – 8:54).

Moreover, students with a hearing impairment often indicate that they understand, such as nodding in agreement, when in fact they don't understand at all and this will only be evident when one asks them a question and the answer provided is completely out of context, so they use 'social bluffing' too, which makes it difficult for the lecturer.

### 5.11.5 Coping strategies

The staff member from the disability unit indicated during the interview that they (all the staff at the disability unit) encourage students with hearing impairment to declare their disability to their lecturers as early as possible at the beginning of the year. It is suggested to these students that, each time they are faced with a new or guest lecturer, they should disclose their hearing impairment and express their accommodation needs. The research participant also mentioned that some students had complained about lecturers switching between languages but that 'they [the students with hearing impairment] find ways to get around it'. Bilingual teaching was mentioned as a barrier to learning by the students.

### 5.11.6 Critical success factors

The participant offered three suggestions that could assist the students to be successful in their studies.

- they should make use of academic one-on-one tutors:  
If I can think of a few students that have come forward, they have had tutors and they have passed those subjects, you know, for which they had tutors and they also decide the ones they want tutors for. So then they tend to pass the subjects they have tutoring for. So tutoring really helps a lot;
- students should try to build good relationships with their lecturers; and
- when they experience lecturers that are supportive, it helps to lead to students' success.

By offering these suggestions, which mirror the critical success factors mentioned by the student participants, the notion of a current lack of university, including teaching and learning, support for students with hearing impairment is reinforced.

### 5.11.7 Summary

In summary, emanating from the interview with the support staff member from the disability unit, the following major findings emerged:

- students with hearing impairment prefer not to disclose their hearing impairment and therefore do not seek support from the disability unit;
- the attitudes towards and support provided vary from lecturer to lecturer;
- there is a need for staff development regarding teaching and assessing students with disabilities;
- students with hearing impairment continue to face a number of educational challenges at the university;
- a strong argument was also put forward regarding the mainstreaming of disabilities within the university; and
- a number of recommendations were made to alter the current status quo.

## 5.12 FINDINGS: INTERVIEWS WITH LECTURERS

### 5.12.1 Introduction

This section of the chapter will present the data generated from the lecturers who had taught or were teaching (at the time of the interviews), students with hearing impairment. Table 5.10 below depicts the gender, first language and population group of each participant. I did not request information regarding their age or years of experience. Further information such as faculty has been omitted to protect their anonymity.

**Table 5.10: Demographic factors related to lecturers as participants**

Participant	Gender	First Language	Population
Lecturer 1	Female	English	White
Lecturer 2	Male	Afrikaans	White
Lecturer 3	Male	English	White
Lecturer 4	Female	English	Coloured
Lecturer 5	Male	Afrikaans	White
Lecturer 6	Female	Afrikaans	White

### 5.12.2 Identity, disclosure and personal characteristics

The category on identity, disclosure and personal characteristics refers to how the lecturers perceived the participants' view of their self-identity; their choice regarding disclosure of their hearing impairment and personal characteristics. The lecturers all agreed that the students with hearing impairment related to a hearing rather than a Deaf identity cultural paradigm and did not identify as being 'disabled', as two lecturers stated:

*I think some of these students would like to be treated as far as possible as normal, they want to function in a normal environment; they don't necessarily want to have special arrangements made (P9:L1\_F.rtf – 9:68);*

and

*they don't want to be treated special, they just want to fit in and not kind of standout (P11:L4\_F.doc – 11:56).*

Some of the lecturers mentioned that students disclosed their hearing impairment up front whilst others stated that disclosure only occurred when the student experienced a problem and needed assistance:

*This student didn't self-declare right at the beginning and it was only when there was a problem that it was picked up ... (P12: L5\_M.doc – 12:53).*

The personal characteristics of the students refer to data relating to their intra-personal qualities. Most of the lecturers perceived the students as being reluctant to ask for support, even if they had

disclosed their hearing impairment, and they noted that assistive listening devices, such as FM systems, were not utilised. One lecturer even remarked on a student not wearing her hearing instrument (hearing aid) at times in class. Other lecturers, however, had more positive experiences when teaching students with hearing impairment and commented favourably on particular character traits such as determination, not focusing on their disability but rather ability, and them being an inspiration to other students in the class:

*I feel I have had positive experiences with the students I have dealt with and they are more determined than the students that are fully able to do it because they just know what it is like to overcome, they are not harping on the disability and there are many and when one says a disability many times I am tempted to take one of those students and not isolate them but to say to them this has been our experience to those students who don't really want to be here and for me to see that but it is inspiring for us too*  
(P 9: L1\_F.rtf – 9:93).

Furthermore, the lecturers were all in favour of an inclusive higher education system and felt that students with disabilities (who met the minimum entrance requirements), with the right attitude and determination to succeed, should be assisted to overcome any barriers that they may face.

### **5.12.3 Curriculum transformation**

Curriculum transformation promotes and supports curriculum flexibility and development aimed at teaching and learning to think critically about cultural diversity, including sensitivity to persons with disabilities. Overall, lecturers expressed a willingness to make adaptations but often are not guided by what the student needs or they are unsure themselves about how to accommodate the student, and so may do nothing:

*But I didn't really go out of my way to do anything [different]*  
(P9:L1\_F.rft – 9:12).

The lecturer, in this case, felt that the specific student did not require any 'adaptations', but if requested to do so, she would have spoken more slowly, faced the student to allow for lip-reading or she would have made her lecture notes available to the student. When asked about the students making use of extra time during assessments, the lecturers indicated that they did not make use of this accommodation but they (the lecturers) were not sure why.

Due to the availability of various technologies, as part of their usual teaching methodology, lecturers generally:

- use electronic slide shows in class to supplement their teaching;
- make this file (and others, such as class notes and tutorials) available for download via an electronic learning platform (sometimes in advance);
- make use of electronic announcements for important events such as test dates;
- use email to communicate with students; and
- provide the course outline in both English and Afrikaans.

Although these 'inclusive' strategies are not employed directly to support the needs of students with hearing impairment, they are, nonetheless, most beneficial for students with hearing impairment. Glossaries, used to explain complex medical terms, were only provided by lecturers in the health sciences. Again, this was not done especially to support the needs of the students with hearing impairment.

There were, however, some practices that were utilised to support inclusivity, such as –

- repeating questions asked by other students in the class;
- maintaining eye-contact to ensure that the student is following the explanation;
- using the mouse-pointer to indicate what on the diagram they are referring to:

*Yes especially when she was in class I used the mouse, see where this is going, ... you see it?*  
(P10: L2\_M & L3\_M.doc – 10:417).

The lecturer further explained the strategies that she uses in class:

*I repeat the question because luckily I have a loud voice and she told me one day that she can hear me 100 per cent and I will repeat the question, what was asked, and I will give the answer, tell them where to go and find it in the book. I tried that and it works for me*  
(P10: L2\_M & L3\_M.doc – 10:30).

*And the other thing that I did with [student's name] in the practical, I made sure that when we were working on a cadaver I almost told her from the beginning that she must not sit next to me she must sit where I could see her eyes*  
(P10: L2\_M & L3\_M.doc – 10:68).

One excellent example of making the curriculum more flexible was offered by a lecturer in the health sciences where a particular examination question, which relied on listening, was adapted to accommodate the student's needs:

*At the moment it is in modules such as [subject], that they do have to listen to sounds, to recognize these sounds and then to answer, so in this case we have asked the lecturer to adapt that part of the question as listening would be a problem....the lecturer would actually set other questions along the same lines...the same outcome is achieved, the question is just set in a different way*  
(P14: L6\_F.doc - 14:46).

#### **5.12.4 University support**

The majority of lecturers expressed their frustration regarding the limited support for students with hearing impairment, their lack of knowledge of how to support these students, and not being informed or adequately supported by staff from the disability unit:

*For this particular student they didn't even inform me that he was deaf ... For this student, I had to make a plan because there was none*  
(P 9: L1\_F.rtf – 9:13-15).

Lecturers were also not aware of the institution having a specific policy for students with disabilities and raised concerns regarding the students not being aware of the policy too.

A few, however, felt that they were supported and helped to understand the needs of the students, but this was mainly for students with visual impairment:

*... for other students I have been informed and they actually arranged for us to meet with the students before they were accepted to the university and tried to get us to understand what their specific needs were, so here I am referring specifically to blind students*  
(P9:L1\_F.rtf – 9:14).

*Right from the beginning we had good contact with the office. Actually, right from the beginning they asked us to provide support according to the guidelines ... The guidelines were supplied and actually we had regular contact with the office and it was helpful to have a source of information that was available that we could contact and at the end of the year we had discussions with them*  
(P14: L6\_F.doc – 14:1-2).

With regard to assessments, one lecturer commented that all of their invigilators had been people who knew about the student's hearing impairment and that if there was a change to instruction or numbering of a particular question, it was announced verbally and then the invigilator gave the student individual instructions as well, ensuring that the student understood.

### 5.12.5 Educational barriers

Students with hearing impairment encounter a number of barriers to learning. Table 5.11 below presents some of the barriers that students with hearing impairment face on a daily basis, as perceived by their lecturers.

**Table 5.11: Educational barriers faced by students with hearing impairment as reported by their lecturers**

<b>Barrier to learning</b>	<b>Quote</b> (including reference)
Change of lecturers	I took over this class after the June holidays, so he had another lecturer for the first semester and that lecturer didn't pass that information on to me <b>(P 9: L1_F.rtf – 9:1)</b>
Large class sizes	The first-year [subject] students or the foundation phase is nearly 400 students. We haven't got a lecture hall that size. So they sit on the stairs and with a student with a hearing problem it is very bad. <b>(P12: L5_M.doc – 12:7)</b> it was a huge room that did not have very good acoustics <b>(P 9: L1_F.rtf – 9:33)</b>
Practicals (background noise)	Then when you are in a practical, the venue for the practical is about 20 times bigger than this office and it extends all the way down to the bottom there and if you are talking to a group there is such a hum and hummer in the practical you need to be focused and you need to know what you are doing and you need to know what you are in for and this type of thing <b>(P10: L2_M &amp; L3_M.doc – 10:52)</b>
Bilingualism & teaching	She didn't realise that I was kicking over from English to Afrikaans, she couldn't follow the change from one to the other and so she kind of lost interest and she started bunking class. <b>(P10: L2_M &amp; L3_M.doc – 10:65)</b>
Bilingualism & lip-reading	One of the issues was due to our language policy, where lecturers teach one lecture in English and one in Afrikaans. The student's home language was Afrikaans. This was communicated and explained to the student but it became a problem ... I don't know how she coped in second year with the Afrikaans and the English, I never thought about that but to lip-read in Afrikaans, I mean if it is not your home

	language. So hopefully she got more support in her second year. <b>(P14: L6_F.doc – 14:31)</b>
Parental interference	I suspect her main problem was her mom; her mom had done everything for this poor darling daughter of hers who was so done in, in life, by the sins of the forefathers and having being born with this hearing disability and I don't know a bit of guilt and etc, etc I mean the psychology behind this whole thing is quite complicated and I suspect because of that she never learnt to do anything for herself. She never had to do anything for herself, everything was done for her. When she got into the academic environment where she had to work as everything was not done for her and she was without any armour and she just didn't know how so she had to go through this learning curve, maybe she realised she had to do something for herself. Her mom had interfered quite severely in her second year; she phoned us regularly and gave quite a lot of phone calls to the head of the department to find out what we were doing. <b>(P10: L2_M &amp; L3_M.doc – 10:66)</b>
Unavailability of lecturers	She did complain about the [subject] lecturer who wasn't available but it was also like one of those lecturers who aren't available for anyone, but I do feel that the lecturer could have made special arrangement with her given her disability <b>(P11: L4_F.doc – 11:6)</b>
Teaching methodology	Luckily I have a loud voice and when I have to, but sometimes I know when some of the other lecturers gave class they were talking softly and there she had some problems but when [name of lecturer] was told be aware and that changed a bit and she started talking straight to her so that she can lip-read. <b>(P10: L2_M &amp; L3_M.doc – 10:70)</b> The only problem for me with her was if I was writing on the board, if I was writing on the board I tried to face her as well and also I couldn't really walk around the lecture theatre because if she can't see me she can't hear. So that perhaps was like a barrier <b>(P11: L4_F.doc – 11:71)</b>
No subtitles (for videos, films, etc.)	Yes, but it [adding subtitles] is too expensive; there is no money available to put this information on. So to have it every time, writing it is going to take a lot of time and energy. That was the one request that was just impossible. <b>(P14: L6_F.doc – 14:58)</b>
No provision of note-taker	It was all out of the kindness of people's hearts which I don't think is a good model, but people were very kind. So that was hard and of course I don't think students learn anything in lecturers anyway so I think what she wanted was what we were unable to give her, she wanted a note-taker in the lectures. <b>(P13: L7_M.doc – 13:26)</b>

The data presented in Table 5.11 above show that students with hearing impairment still face many educational barriers such as –

- large class sizes;
- lecturers being unaware of students' communication needs (especially when there is a change of lecturer);
- difficulties with practicals due to high levels of background noise and large pieces of equipment hindering lip-reading;
- lecturers switching between languages without warning;
- lecturers not being available for one-on-one consultation;
- audio-visual materials being without subtitles;
- parental involvement; and

- a lack of provisioning of note-takers for students with hearing impairment.

These barriers to learning, as described by the lecturers, support the ‘voices’ and experiences of the students.

### 5.12.6 Coping strategies

The lecturers provided some information regarding the coping strategies employed by students with hearing impairment. Two of the most common coping strategies were sitting in the front of the teaching venue and making use of lip-reading. Students also made use of the downloading of electronic notes, referring to textbooks for detailed explanations, lecture notes sent via email to them as well as pre-class reading of materials. Furthermore, students with hearing impairment relied heavily on peer support, such as using their class notes, peers alerting them when to begin listening again, noting important assignment and test dates as well as explanations of difficult content matter. One of the lecturers explained:

*During lectures, when new material is being taught, then she uses her class mates to tell her about it [new content] in this situation. It sometimes happens that whilst you are lecturing you see somebody next to her that she is busy talking to. Immediately that you would know it is about clarify information. We accommodate that, it is no problem*  
(P14:L6\_F.doc – 6:30).

Furthermore, one of the lecturers mentioned a student that made use of extra writing time for assessments and the fact that students first read a question in their home language and then in their second language to ensure that they fully understand what is being asked of them.

Some of the lecturers also tried to accommodate the needs of these students in a variety of ways, such as

- offering personal support by means of post-class consultations;
- not moving around the class too much when teaching and remaining in a clearly visible position to aid lip-reading;
- the provision of academic tutors; and
- repeating questions asked by other students in the class.

One participant commented that, when students articulate their needs and they are supported, they are able to be successful:

*It just shows that, when a student faces a problem and expresses their needs and one gives them that support, then they can actually cope and make a plan and be persistent*  
(P14: L6\_F.doc – 14:58).

From the above data, it is evident that students with hearing impairment are ‘forced’ to employ various personal coping strategies. Some lecturers do however, as a means to support their



communication needs, try to use various strategies such as one-on-one consultation sessions and not moving around the classroom too much whilst teaching.

### 5.12.7 Critical success factors for inclusion

When discussing critical success factors for inclusion, the participants (lecturers) spoke from two perspectives, their own perspective and the perspective of the students with hearing impairment. Firstly, from their own standpoint, they expressed an urgent need for comprehensive staff development and training regarding the accommodation of students with disabilities, with the current half-day offering being inadequate.

*Well there needs to be some sort of sensitivity training involved and then just in terms of best practice, knowing what we can do to include the student more and for the student not to fall through the cracks. We have so many workshops why not a workshop on how to teach a deaf student or hearing impaired student, maybe the Student Counselling Centre identifies students at the beginning of the year and they will tell you, if they know that you are teaching that year to give you some sort of training, even if it is to read just to be a better lecturer*  
(P11: L4\_F.doc – 11:35).

*... and then there needs to be proper staff training that is integrated with other forms of staff training. We get money as an institution and we should be using some of that for staff development. So it is completely affordable ...*  
(P13: L7\_M.doc - 13:18).

Furthermore, they felt that students with 'special needs' should be treated as individuals, their specific needs identified, the lecturers being aware of how to support the students and to be aware whether these students are coping or not. Lecturers should also be encouraged to build good relationships with the students to facilitate open communication and to be proactive, allowing for matters to be dealt with timeously. Availability for personal consultation was also deemed important.

Secondly, in terms of personal characteristics of students with hearing impairment, the lecturers felt strongly that these students should self-advocate for their needs:

*This is the thing, they can't fold their arms and say, "Poor me, there is no one here to help me, and I can't help myself." I am sorry, that is not how university functions*  
(P10: L2\_M & L3\_M.doc – 10:54).

Other important strategies included a high level of independence, good time-management skills due to the high workload, pre-class reading of materials and a positive attitude.

*I think it is attitudinal from her side, I think that has made a big difference, really I think that made a difference. I think lecturers really noticed a big change in her and she started performing much better academically. I don't think it was anything that the lecturers did specifically*  
(P14: L6\_F.doc – 14:53).

The main finding deduced from the abovementioned discussion is that lecturers acknowledged that they needed to attend training to learn more about how to accommodate the needs of students with hearing impairment. They did, however, further feel that the onus is also on the students to

disclose their hearing impairment to the lecturers so that they can 'work together' to reduce the barriers experienced.

#### 5.12.8 Other critical success factors

A very strong sentiment was expressed by one of the lecturers regarding the university changing the way that disability is framed, from a welfare/support model to meeting the basic human rights and needs of individuals, which would then also lead to an improved level of commitment to campus accessibility:

*... when I got to [this university] compared with [my previous university] it remains the case I think, is that on a political level [this university] is nowhere as regards disabilities in the sense that I don't think it ... has improved a lot, partly because [name of person] was very good in all sorts of ways, he also had a disabled daughter, he was excellent, but to get the university to understand that, for example, that issues of access are not the same as being kind to people with difficulties. It is hugely difficult, we haven't won that. The building I work in is inaccessible apart from the ground floor to people with any kind of mobility impairment because of stairs. It is difficult to change things ... and I think at [this university] disability is still ... seen as a welfare issue instead of as a human rights issue, despite all the talk ... and the way in which the idea of setting it [disability unit] up as a sort of counselling service is wrong actually ... I get very angry sometimes with the university about the way things are framed and the apparent lack of commitment as regards accessibility*  
(P13: L7\_M.doc – 13:25),

*... but it [disabilities] is not a priority and the reality is they are very sweet about it but it is not happening!*  
(P13: L7\_M.doc – 13:21).

Furthermore, the participants stated that insufficient money was made available to support students with disabilities and that this needed to change. They suggested that either faculties budget specifically for this need or a separate fund should be established that could be accessed by faculties to support the needs of these students.

*... but for students who have difficulties, you know, I think that the faculty should have more money available. We have been fortunate with the scribe that I spoke about, the [disability unit] actually gave us money for that, but in other situations, especially with this struggle to get text enlarged or changed which is a frustration as they keep going to the faculty to ask for this type of support, but even as head of the department I see that we don't have the money and sometimes the student comes to you the next day and tells you they have a problem with something, you have start looking for money, it doesn't work ... It should be put into the policy that faculties need to budget for this, but I don't think this will happen as we never know will we or won't we have students with special needs during a particular academic year*  
(P14: L6\_F.doc – 14:38).

### 5.12.9 Summary

In summary, students with hearing impairment at the case study university view themselves as having a hearing identity, curriculum transformation has been limited with only some successes, university support for students with hearing impairment is inadequate thus resulting in the students facing diverse educational barriers and having to employ various coping strategies. The findings also indicate a need for staff development, institutional resources to be made available to support the communication needs of students with hearing impairment and that the university needs to transition from the medical/welfare model of support for students with disabilities to the social model.

## 5.13 FINDINGS: DOCUMENT ANALYSIS

### 5.13.1 Introduction

Table 5.12 below depicts the nine institutional documents which were analysed in terms of content, such as applicability to the research questions and correlation with the interview data and also highlighting contradictory issues. The analysis focused on the main topic of each research question, for example, the topic of research question 1 was on 'hearing impairment' and as related to institutional documents, the emphasis for this analysis would therefore be on the definition of the concept of 'disability'. Although the purpose of this chapter is primarily to present the findings, some limited interpretation will be provided for the sake of readability, conception and continuity. Detailed interpretation will be integrated into the following chapter.

**Table: 5.12: Summary of university documents analysed**

DOCUMENT CODE	TYPE OF DOCUMENT	PURPOSE OF DOCUMENT
Document A	Policy document – assessments (2005, reviewed 2009)	This document outlines the assessment policy and practices at the university
Document B	Reasonable accommodation request (n.d.)	This document is an application form, allowing a student with hearing impairment to apply for reasonable accommodation for his/her needs at the university
Document C	Information for students (n.d.)	This guide was written by students with hearing impairment for new students, to assist them. It describes some of the difficulties that they have faced and it offers some advice and various coping strategies for the new students.
Document D	Information for lecturers – students with disabilities (n.d.)	This document provides valuable information to lecturers regarding the needs of students with hearing impairment and the best ways to accommodate them
Document E	Policy document – extra time (n.d.)	This document outlines the procedures for applying for extra time (during assessments) as well as the evaluation criteria for awarding this 'reasonable accommodation'
Document F	Policy document – disabilities (2010)	This is the most recent version of the policy for students

		with disabilities
Document G	Strategic document (2000)	This is a strategic and visionary document promulgated by the university, depicting what they would like to achieve in the near future
Document H	Annual report of disability unit (2010)	This document is a summary of the activities conducted by the disability unit for the year ending December 2010
Document I	Annual report of disability unit (2011)	This document is a summary of the activities conducted by the disability unit for the year ending December 2011

### 5.13.2 Document analysis in relation to “identity”

As outlined in policy document F, the definition of disability which is accepted by the university refers to ‘any person with one or more provable physical or psychological limitations that negatively affects such an individual’s quality of life in any way ...’. The key word here is ‘provable’. The definition is expanded on further by stating that “Due to the possibility of such disabilities detracting from the quality of life enjoyed, such students may require specific tools, environmental adjustments or special personal skills to be enabled to function on par with other students.”

This implies that the onus is on the student but ignores the responsibility of the university and the lecturers in terms of accessibility to learning through, for example, more flexible curricula. Therefore, although the policy states that “such a definition must be seen within the context of the social model of disability ...”, it is evident that the notion of disabilities as depicted in the medical or individual model of disability remains a strong influence on day-to-day practices such as students having to ‘prove’ their disability when disclosing to their lecturers:

*It is important that you obtain an official document, which describes the extent of your hearing impairment ... Get this ... and have it officially stamped by the university to confirm that you are hearing impaired. Since your disability is not necessarily visible, sometimes the university/lecturers find it hard to believe that you have/may have a problem*  
(P17 – Doc: 142–144)

Furthermore, as indicated in document B, students should indicate their “diagnosed disability or condition” and provide medical proof. Document E (policy regarding extra time) also stresses that the responsibility of informing lecturers regarding their disability, including the impact on learning (and thus implying the expected reasonable accommodations) is the responsibility of the student, and, in order to support their request for extra time during assessments, they are required to keep documentary evidence of their electronic communication with their lecturers in this regard and submit it to the disability unit. This type of statement negates the role of the staff in the disability unit and imposes rules and restrictions on the students without taking into account their personality characteristics, which may be strongly influenced by their hearing impairment, and thus placing them in a very difficult, and even perhaps, embarrassing situation.

*Secondly, it is pointed out to all students at the beginning of the process that it is his/her own responsibility to inform the relevant lecturer(s) about the nature and impact of the learning constraints that the student experiences, and if not previously occurred, then the student is referred*

*back to the lecturer(s) to fulfil the specific obligation. It is also required of students to submit written proof of their communication ... and to hand it in at the disability unit (P19 – Doc: 37–37).*

### **5.13.3 Document analysis in relation to research sub-question 1**

“Which, if any, curriculum transformation has occurred in order to accommodate the needs of students with hearing impairment?”

The issue of reasonable accommodation is raised in document D, which provides information to lecturers regarding “providing for the needs of” students with disabilities, together with a strong focus on finance: “in the most cost-effective way possible”; thereby allowing for non-delivery in terms of support. Moreover, this document refers to “securing access to specially adapted academic modules and programmes”, which directly speaks of providing for the needs of students with visual impairments. No mention is made of any specific support for students with hearing impairment. This supports the view of the participants that the university focuses on visual and physical impairments more than other impairments. This phenomenon was also apparent from document I (Annual Report), where the numbers of students with disabilities were reported on as well as activities presented during the year. The category of “other hearing disability” was the second highest category, but there was no mention of activities for students with hearing impairment or investment in technologies to support their needs. There was, however, mention of courses offered in Sign Language for hearing university students. This is a contradiction of note as the university, during the period of data generation, did not have any registered Deaf students (those making use of signing).

Both documents A and G promote creativity in the way that students are taught and assessed. Lecturers are encouraged to use innovative methods for teaching, including the use of decentralised teaching, such as the use of the internet, which could be very helpful to students with hearing impairment (text versus oral, and option of subtitles). Furthermore, lecturers are given the power to change the way that they assess students and the policies allow for “justifiable choices in their own environments”. Document A also mentions the support which is offered to lecturers in this regard and the availability of training offered by an academic support unit for teaching and learning.

*The policy does not propose to be prescriptive with regard to assessment strategies, but rather to create space within which lecturers can make justifiable choices with regard to assessment within their own environments (P15 – Doc: 2526–2752).*

*[The Assessor/Lecturer] takes responsibility for his/her own further development and/or training in assessment skills*

(P15 – Doc: 1140–1540).

It is disconcerting to note that, even though a large amount of flexibility is afforded to lecturers in terms of adapting and transforming their teaching and assessment methods, as is evident from the interviews with the students with hearing impairment, that this is not a reality in the classroom.

#### **5.13.4 Document analysis in relation to research sub-question 2**

“Which support is provided by the university to students with hearing impairment?”

##### **Document B: request for reasonable accommodation**

First-year students with a disability are requested to –

- describe the support that they received at school or another learning institution;
- specify the kind of support (for example the use of Braille equipment, enlarged font for tests etc.) and special accommodation that they would need at the university;
- list which support they would be able to provide for themselves; and also
- specify which ‘minimum’ support they would expect from the university.

It seems questionable to base the support provided at school as the ‘entry’ for support at university, especially in light of the fact that all of the participants attended mainstream private or public schools with no additional support provided. When requesting the students to specify the kind of support they would require, the examples given all relate to visual impairments. The expectation that students should be responsible to provide their own support and the term “minimum support” is also problematic.

##### **Document C: information for students with a hearing impairment**

There are various forms of support outlined in this document, such as the disability unit serving as liaison between the student and the lecturer/department, assisting with the application for extra time for assessments (based on proof of hearing impairment by means of an audiological report) and group support, both for academic and social purposes.

##### **Document D: information for lecturers: accommodating students with a hearing impairment**

The introduction of the document quotes from White Paper 6: “... due to increasing numbers of students with disabilities studying at tertiary establishments, it is crucial that a supportive and inclusive culture, embracing all aspects of such students’ university experience, be created and developed in both academic and social spheres ... all youth have the potential to learn and that they may require support at some point.”, thereby firmly placing the responsibility of support provision in the hands of the university. What follows is a list of support services available to students, one of which is specifically related to hearing impairment, namely the use of speech-

reading. No mention is made of assistive listening devices or the availability of induction loop systems or even extra time for assessments. The participants all expressed a lack of awareness regarding any available support offered by the university. Furthermore, various strategies for accommodation are presented, such as reserving the first two rows of seating, which ironically, was shared as a barrier by the participants. One of the suggestions offered is the use of a laptop computer to enable students with hearing impairment to lip-read and to make notes. This is only possible if the student is able to touch-type (without looking at his or her fingers whilst typing). Although the use of an FM system is advocated, the university does not make any equipment available for loan and none of the participants own or make use of such a system. Under the heading “personal support”, the document refers to the provision of note-takers. Reference is not made to the use of a note-taker in the traditional sense of the word, but rather to another student in the class making use of carbon paper and giving the student the original. This student can either be appointed by the disability unit or on request from students with hearing impairment. Only one of the participants was aware of this support measure. A number of other practical and useful recommendations are made regarding support, such as the provision of subtitles for films and videos. It is disconcerting to note, however, that despite lecturers being provided with these guidelines; very little academic adjustment was experienced by the participants.

#### **Document E: policy regarding extra time**

In an attempt to adhere to the White Paper on an Integrated National Disability Strategy (South Africa, 1997) and to remove all discriminatory practices and barriers in admission policies and examinations, the university has a policy on the granting of extra time for assessments, up to a maximum of 20 minutes per hour. This is one of the few academic support mechanisms in place for students with hearing impairment, yet only one of the participants makes use of extra time for his assessments. Institutional research shows that year on year it is evident that the majority of students who have made use of extra time go on to graduate successfully. Students with hearing impairment are often not aware of the option of extra time and some do not consider themselves to be eligible to apply for this concession.

#### **Document F: policy regarding students with disabilities**

This policy document refers to the university’s vision and strategic framework in terms of “welcoming a more representative (diverse) student body, more disabled students being encouraged to study at a university, a willingness to accommodate (as far as possible) disabled students’ diverse (and often complex) academic needs” as well as a focus on the issue of “accessibility”. Furthermore, the policy speaks to the promotion of equal opportunities for all, albeit within reason, commitment to the rights of disabled students, and “fostering a positive and non-prejudicial attitude amongst staff and students towards persons with disabilities”. It is disappointing to note that all of the aforementioned is only possible if funds are available: “[the university] will, as

far as it is financially (or practically) viable, provide for the needs of such”. The policy also refers to only accepting students with disabilities if they have met the academic requirements of a specific course. In summary, the policy promises the provision of academic support and the provision of academic and other information in an appropriate format, but this was not the experience of the research participants. Important information, such as assessment dates, was often completely inaccessible to them.

### **Document G: strategic framework**

Pages 7, 11 and 20 of this document all refer to “accessibility”: that there should be a focus on accessibility, especially in terms of teaching and learning, and that the “University acknowledges institutional culture as a factor in accessibility”. This strategic framework was drafted in 2000, and now, twelve years later, there has been some progress in terms of university access for students with disabilities, but unfortunately there has been no significant improvement with regard to accessibility of teaching and learning, especially for students with hearing impairment.

### **Document H: Annual Report – 2010**

“Our vision is to create an enabling environment that holistically empowers students with disabilities to realise their full potential.” The disability unit has a noble vision to support students but their focus does not seem to be on the needs of students with hearing impairments. The document refers to changes made to the 2010 disability policy which “creates space for Faculties to apply to the Strategic Fund ... should they need extra financial support for students with disabilities”. As there is access to funding, why are students with hearing impairment not better supported? In addition, the report mentions individual staff members who liaise with the staff at the disability unit to provide much-needed support at faculty-level to students with disabilities. This relationship is important, allowing for open communication between faculties and support staff and hopefully resulting in improved reasonable accommodation for the students.

#### **5.13.5 Document analysis in relation to research sub-question 3(a)**

[Note to reader: I have split research sub-question 3 into two parts for this discussion, namely (a) which refers to ‘barriers’ and (b) which refers to ‘coping strategies’.]

“Which barriers do students with hearing impairment experience ...”

Document D, which provides information to lecturers regarding the specific needs of students with hearing impairment also details difficulties which the student may face, among others:

- lip-reading when having to focus on a visual aid simultaneously;
- language/communication barriers in large venues with poor acoustics or when the lecturer speaks too quickly;



- group discussions; and
- practical sessions,

Furthermore, the document provides a list of additional barriers which students with hearing impairment may face, such as having limited vocabulary, speech difficulties, misinterpreting ambiguous information, errors in use of syntax and difficulties absorbing information. This document is most useful as, besides outlining the barriers, it also provides some teaching strategies for lecturers and ways of accommodating students with hearing impairment.

Actual experiences of students with hearing impairment at the university and their advice for new students are presented in document C. Provided here is a summary of the main difficulties that the students faced:

- social isolation and ‘suffering’;
- audio-visual materials not being subtitled;
- not being able to use a microscope and lip-read at the same time;
- lecturers teaching in both English and Afrikaans;
- lecturers not being trained teachers but rather ‘experts in their field’; and
- lecturers not being prepared to adapt for students with a hearing impairment.

An important point was again raised concerning the lack of funds being available to support students with hearing impairment, as opposed to provision being made for those with other disabilities.

It is worrying to note that the barriers discussed in both these documents correlate with the barriers expressed by the research participants; yet, little reform has taken place to support these students’ academic and social needs.

#### **5.13.6 Document analysis in relation to research sub-question 3(b)**

“... and how do they attempt to overcome them?”

In the information document for lecturers (document D), lecturers are advised that students with hearing impairment should make use of FM systems in class, in group sessions and to connect to other audio devices, e.g. TV, computer, sound system. This is sound advice and a good coping strategy, but the university does not offer the use (or lending) of any assistive listening devices to students who have a hearing impairment. If they do wish to use an FM system, they should provide it themselves. Not one of the participants made use of any assistive listening devices (such as an FM system), with some of the main reasons being that they do not wish to draw attention to themselves and are reluctant to ask the lecturer for any ‘special’ support.

Document C, which provides general information to new students with hearing impairment, suggests the following academic coping strategies:

- during orientation (because of the large groups), the student should request a separate computer for registration and library orientation;
- students should use email to communicate with their lecturers;
- students should disclose their disability to their lecturers;
- it is important to seek out support when experiencing difficulties;
- textbooks in one's home language should be purchased;
- academic assistance should be sought from someone taking the same course (and living in the same residence); and
- copies of the notes of a reliable student should be made.

Regarding living in one of the university residences, the following advice is offered:

- the student should disclose his or her hearing impairment;
- students should make arrangements for someone at the residence to wake them in the event of an emergency;
- front door duty is problematic due to having to use a telephone; therefore, they should explain the difficulties and advise that they are not able to perform this duty; and
- when they receive visitors it is best for the person on door duty to send an SMS or a missed call to alert the student.

Most of these suggested coping strategies were being utilised by the participants and they found it helpful.

#### **5.13.7 Document analysis in relation to research sub-question 4**

“Which factors did participants perceive might help them to successfully complete their studies?”

The university, in document G, acknowledges that “access and accessibility are insufficient in themselves. It therefore commits itself to an on-going appraisal of student throughput, yearly success and graduation, both generally and by population group and gender”. This is not yet current practice at the university, especially regarding students with hearing impairment. Their progress should be monitored so that various interventions can be implemented timeously, such as the provision of a note-taker or assistive listening devices. One of the participants (lecturer) also mentioned the need for on-going monitoring:

... specifically call the student in and ask the student how best she/he could help her and to also in class to give special attention, not in the spotlight but to be aware that she is keeping track (P11: L4\_F.doc – 11:67).

Table 5.13 highlights a number of issues of concern raised from the investigated documentation. These areas of concern are elaborated on in the last column of the table.

**Table 5.13: Issues of concern raised from analysing the university documentation**

DOCUMENT CODE	TYPE OF DOCUMENT	DISCUSSION
Document A	Policy document – assessments	<ul style="list-style-type: none"> <li>This policy allows for flexibility (in terms of assessment), there is also support and training for lecturers but they have not adapted their assessments, in any way, for students with hearing impairment.</li> <li>Page 4 states: “The student ensures that he/she is familiar with the content and stipulations of the assessment policy” – the participants were not aware of this policy nor of the possibility of more creative (adapted) assessments.</li> </ul>
Document B	Reasonable accommodation request	<ul style="list-style-type: none"> <li>This document alludes to being inclusive and offering support, but then stifles this by the disability unit emailing it to the students instead of discussing their individual support needs with them.</li> <li>This form does not explain which support is available to students with hearing impairment but focuses on what their “minimum support” needs are. The students who were interviewed did not know which support was available to them at the university and were therefore not able to make an informed decision.</li> </ul>
Document C	Information for students	<ul style="list-style-type: none"> <li>Not applicable</li> </ul>
Document D	Information for lecturers – students with disabilities	<ul style="list-style-type: none"> <li>The document speaks of the social model of disability and to the high level of support that the disability unit can provide and also how lecturers should accommodate students with hearing impairment.</li> <li>In reality, the medical model is still perpetuated (proving one’s disability). Students are not aware of the support on offer and lecturers do not alter their teaching and assessment methods to accommodate students with hearing impairment.</li> </ul>
Document E	Policy document – extra time	<ul style="list-style-type: none"> <li>There is no specific mention in the document regarding hearing impairment, but there is mention of “poor language comprehension” which could be related to hearing impairment.</li> <li>There is a focus on providing evidence of a proven history which must be well documented – what if the student did not receive any support in primary or high school and require support for his/her hearing impairment at university?</li> <li>Furthermore, again the focus on medical evidence which is aligned to the medical model of disability.</li> </ul>
Document F	Policy document – disabilities	<ul style="list-style-type: none"> <li>In terms of admission criteria, this policy states that persons with specific types of disabilities may be refused admission to certain programmes. This is an infringement of their human rights, assuming that they met the minimum admissions criteria.</li> <li>The policy also refers to “certain measures may be taken to improve the student’s access to teaching” – the phrase “may be” makes the improved accessibility to teaching optional and not mandatory. In the same vein, the policy states that “other adjustments (such as the use of special equipment) may also be made, as long as it does not “set unrealistic expectations on the lecturers”.</li> </ul>

		<ul style="list-style-type: none"> <li>• There is no mention in the policy regarding improving the safety of university residences for students with hearing impairment, such as the provision of emergency alerting devices. To date, none of the residences provide a safe environment for persons with hearing impairment.</li> <li>• Furthermore, any attempts to rectify accessibility issues are subject to financial considerations – what is practically and financially viable. What about the rights of the students?</li> </ul>
Document G	Strategic document	<ul style="list-style-type: none"> <li>• Page 15 refers: "... deliberate efforts to turn the riches of the country's diversity to advantage as an asset – this means, specifically, efforts to advance interracial, inter-ethnic, multicultural and intercultural understanding, tolerance and cooperation". Why is disability not included as part of diversity?</li> <li>• Page 19/20 refers: "A critical appraisal of its physical accessibility indicates that it is of strategic importance to the University: to improve the logistics of physical access to the University, including student transport and accommodation...". There is a focus on physical access – what about sensory (hearing) access?</li> <li>• (11.2.2) "... to continue to give attention to accessibility for people with physical disabilities". Again, a focus on physical disabilities rather than on all disabilities, including hearing impairment.</li> </ul>
Document H	Annual report 2010	<ul style="list-style-type: none"> <li>• If the university vision is in place, there is some support at faculty level and access to funding – why are students with hearing impairment not better supported, both in terms of assistive devices as well as reasonable accommodation and adapted teaching methodologies?</li> <li>• "During Casual Day, a woman with a hearing impairment taught the audience a few sentences of Sign Language and challenged them with regard to communicating with people who are Deaf" – if the university does not have any Deaf students, why the focus on Sign Language?</li> <li>• "During the first semester of 2010 we organised a programme of Disability Awareness Workshops run largely by students and ex-students. These focused on disabilities in general, but pinpointing physical disabilities specifically – focus on physical rather than sensory (more specifically hearing) disabilities.</li> <li>• "This Foundation donated R40 000 towards text conversion for visually impaired students ..." and "The ... Trust donated R100 000 ... to purchase a Tactile Braille Embosser for blind students" – all donated funds received for 2010 were spent on students with visual impairments and physical access, and no monies were spent on access for students with hearing impairments.</li> </ul>
Document I	Annual report 2011	<ul style="list-style-type: none"> <li>• "A new Braille office was built ... This was a significant development ..." and "Sign Language classes were continued this year" – the focus for the year was on improving support for students with visual impairments and an activity regarding communication with persons who are Deaf – where is the focus on support and activities to raise awareness regarding students with hearing impairment?</li> </ul>
Document J	Vision 2012	<ul style="list-style-type: none"> <li>• The university puts a high premium on diversity of ideas and is "successfully attracting both staff and students from diverse sections of our society. There is an ease of acceptance regarding the various cultural backgrounds." Although this document speaks of 'diversity', there is no mention of students or staff with disabilities, as part of diversity, in this document at all.</li> </ul>

The findings derived from analysing the various institutional documents are that:

- assessments are not adapted for students with disabilities and students are unaware of the existence of any assessment policies;
- in terms of reasonable accommodation, only minimum levels of support are offered subject to financial consideration;
- improved accessibility at the university is optional rather than being mandatory;
- disability is not seen to be part and parcel of ‘diversity’ issues;
- the historical focus on visual and physical impairment is still being perpetuated; and
- the medical model of disability is still evident, e.g. having to provide medical evidence of a proven history of an issue which has to be well documented.

These issues serve to maintain the status quo for students with hearing impairment at the university, namely being under-represented and under-supported.

### 5.13.8 Academic results of students with hearing impairment

Table 5.14 below provides a ‘snapshot’ of the successes and failures of the seven students who participated in this study over the period 2009 to 2012. It is evident that two of the students were registered for the extended degree programmes, one student did not complete her degree and all of the participants failed subjects at various points along their study path, ranging from one subject failed to nine subjects (per student).

**Table 5.14: Academic results of student participants**

<b>ACADEMIC RESULTS: 2009–2012</b>	
S1: Barry	He took 4 years to complete his degree as he changed direction after his first year; he failed three subjects over four years; he completed his honours degree in one year.
S2: Merle	She studied at the university for four years but did not complete her degree.
S3: Paul	He took 6 years to complete his degree; one year was done at a distance learning institution; he failed eleven subjects during the six years; he was registered in the extended programme at the university; he completed his honours degree in one year.
S4: Astrid	She completed her degree in 3 years but failed nine subjects at different points during her degree; she did a postgraduate certificate in one year and an honours degree in one year; she is currently in the 2 <sup>nd</sup> year of a master’s degree.
S5: Colin	He completed his degree in 4 years and only failed one subject during this period; he is currently registered for a master’s degree (first year).
S6: Stewart	He is currently busy with the 4 <sup>th</sup> year of his degree; he failed nine subjects during the first three years.
S7: Noelene	She is in the final year of her extended degree, having only failed one subject in her 3 <sup>rd</sup> year of studies.

The academic results presented in the table above clearly depict a pattern of not meeting the minimum subject pass requirement of 50 per cent in one or more subjects, the need to take a degree over an extended period of time or even non-completion of a degree. This evidence could be linked to the lack of institutional support for students with hearing impairment but would require additional investigation.

### 5.13.9 Member check feedback

As discussed in Chapter 4, section 4.14.1, one of the ways aiming to ensure credibility is to make use of member checks, i.e. obtaining feedback from participants. After emailing the transcribed interviews to the participants, I received detailed feedback from only one student (S7:Noelene). I felt that it was important to mention this as part of the findings as at the time of the interview, she was a first-year student and this later feedback was based on her having had much more experience as a student with hearing impairment in higher education. In essence, Noelene provided feedback both on the transcription as well as additional comments on her most recent experiences (as if she were being interviewed at the present time).

To Noelene, being hearing impaired means that she is constantly challenged in everything that she does and she feels that her hearing impairment has prevented her from enjoying her life fully and participating in activities where communication with others is involved. She also describes how she has isolated herself as a way of coping, trying to avoid the hearing world. Noelene feels strongly that, through her hearing impairment, she is automatically a teacher as she sees educating people about hearing impairment/deafness as part of her given responsibility:

*Deafness is an invisible disability, people are seldom aware of how much it really affects deaf people's lives.*

(Noelene, 13 March 2012)

In terms of identity, she expressed her acknowledgement of being deaf, but feels that she can do almost everything other people do:

*It only means my life is going to be more challenging and frustrating. I don't identify myself as being disabled, but when I get into difficult situations I do have to identify myself as being deaf, just to try to get some support.*

(Noelene, 13 March 2012)

In relation to requesting support from her lecturers, her response has changed significantly. As a first-year student, Noelene indicated that she would ask her lecturers for academic assistance but this opinion has subsequently changed:

*It is best to talk to fellow students that you know well. I seldom go to the lecturer because they are not always approachable.*

(Noelene, 13 March 2012)

She vented her frustration concerning her needs not being met:

*I tried to ask my lecturer to not walk around and talk, but he was not accommodating at all. Sometimes they don't realise the magnitude of what you are trying to tell them. I have learnt that people are not willing to give up their mannerisms and that often they simply just don't care. Or they forget to be accommodating, so I gave up. He did not seem to care that I really could not hear what he was saying. This is when I asked about getting a tutor.*

(Noelene, 13 March 2012)

Previously when discussing the use of microphones, Noelene had mentioned that the lecturers did not make use of microphones and that it would be better for her if they did. She now added:

*the microphone is more than often broken and the background noise of the students makes it extremely difficult to hear.*

(Noelene, 13 March 2012)

Regarding access to the notes of her lecturers in advance, previously she commented that they simply refused and now added that:

*... they feel that's too much 'special treatment'. They will say to get a friend's notes. My friends do get fed up about it because they don't understand why I can't 'listen'. It would help so much though as I can't listen and take notes. That's why I miss so much!.*

(Noelene, 13 March 2012)

From the above feedback from the member check, it seems that, over a period of three years, the experience of the student, in terms of academic support particularly in the classroom, has become more negative. The main issue raised is that of the attitude of lecturers towards students with disabilities and their unwillingness to accommodate these students' specific learning needs. A concern regarding the maintenance of audio equipment was also raised.

### **5.13.10 Summary**

In summary, this sub-category presented the findings of the analysis of various institutional documents. The following major issues of concern were raised:

- the definition of the term 'disability';
- the focus on the medical model of disability such as having to prove one's disability;
- the provision of reasonable accommodation "in the most cost-effective way possible", which opens the door for non-delivery;
- the lack of flexibility in terms of teaching and learning strategies;
- the unavailability of assistive listening and assistive living devices (such as emergency equipment in student residence);
- the lack of awareness regarding support provisioning provided by the university;
- the low uptake by students in terms of the use of extra time for assessments; and
- the slow progress made at the university with regard to supporting the communication needs of students with hearing impairment, which may be linked to the lack of financial resources.

A snapshot of the poor academic performance of students with hearing impairment at the university was also provided.

#### **5.14 CONSOLIDATION OF THE DATA**

Once all the data had been analysed, I placed the categories into summative tables in order to gain a holistic and synthesised view of the findings (refer to Appendix J). The data generated from the students with hearing impairment, lecturers and the staff member from the disability unit were first summarised in separate tables. The summarised tables were then merged to form a coalescent whole of the data so that the emerging themes could be identified. The themes that emanated from the data were:

- identity cultural paradigm
- inclusive practices
- university support
- educational barriers
- coping strategies
- critical success factors

Each of these themes will be discussed in detail in the interpretation of the data in the following chapter.

#### **5.15 CHAPTER SUMMARY**

This chapter presented six major findings which emerged from the generated data. Some select information regarding the case study university as well as a description of the participants was provided to provide for contextualisation of the rich data. The first finding that emerged relates to identity. The student participants were generally reluctant to disclose their hearing impairment and they identified as having a hearing rather than a Deaf identity. Their reluctance to being 'extra visible' also directly correlated with the lack of self-advocacy. Secondly, it was found that curricula remained largely inflexible with little curriculum transformation having taken place. Use of reasonable academic adjustments was also not commonplace. Inadequate support services and the lack of awareness of support services generally constituted the third finding. The majority of the student participants with hearing impairment were also not aware of any institutional policies related to students with disabilities at the university. The fourth major finding revealed that a large number of barriers related to communication, teaching practices and assessment were experienced by students with hearing impairment. This led to the fifth finding regarding the need to employ various personal coping strategies in an attempt to overcome the barriers previously mentioned. The sixth and final finding that emerged from the data related to factors which the students with hearing impairment viewed as critical for their academic success. These factors were linked to curriculum flexibility, disability awareness, one-on-one and more personal



interactions with lecturers and the need for an accessible teaching (physical) environment. As these findings emerged it became evident that relationships between them existed which needed to be explored further in the interpretive discussion. In the next chapter, these findings are recontextualised and interpreted in order to derive the themes and explore their interrelatedness.

## CHAPTER 6

### INTERPRETIVE DISCUSSION

#### 6.1 INTRODUCTION

Within this chapter, which focuses on interpreting the findings from the data, the emerging themes are comprehensively presented and discussed, and various analytical links from each of the findings are pulled together in a systematic manner. Before moving onto the discussion, it is important to revisit the main goal of this study, the research questions by which was guided as well as the major findings. This intention of the study was to analyse and describe the teaching and learning (academic) experiences of students with hearing impairment at the case study university. Using a qualitative case study design, informed by an interpretive (constructivist) paradigm, purposeful sampling led to the selection of information-rich cases in order to gain insight from the authentic experiences of the students participating in the study. The data in this study were thus generated through the use of individual semi-structured interviews with students with hearing impairment, lecturers and a support staff member from the disability unit at the case study university. These diverse viewpoints were sought, together with the university documents (related to or impacting on students with disabilities), which were analysed, to provide an in-depth and holistic understanding of the environment in which students with hearing impairment find themselves, as well as their academic and learning support experiences.

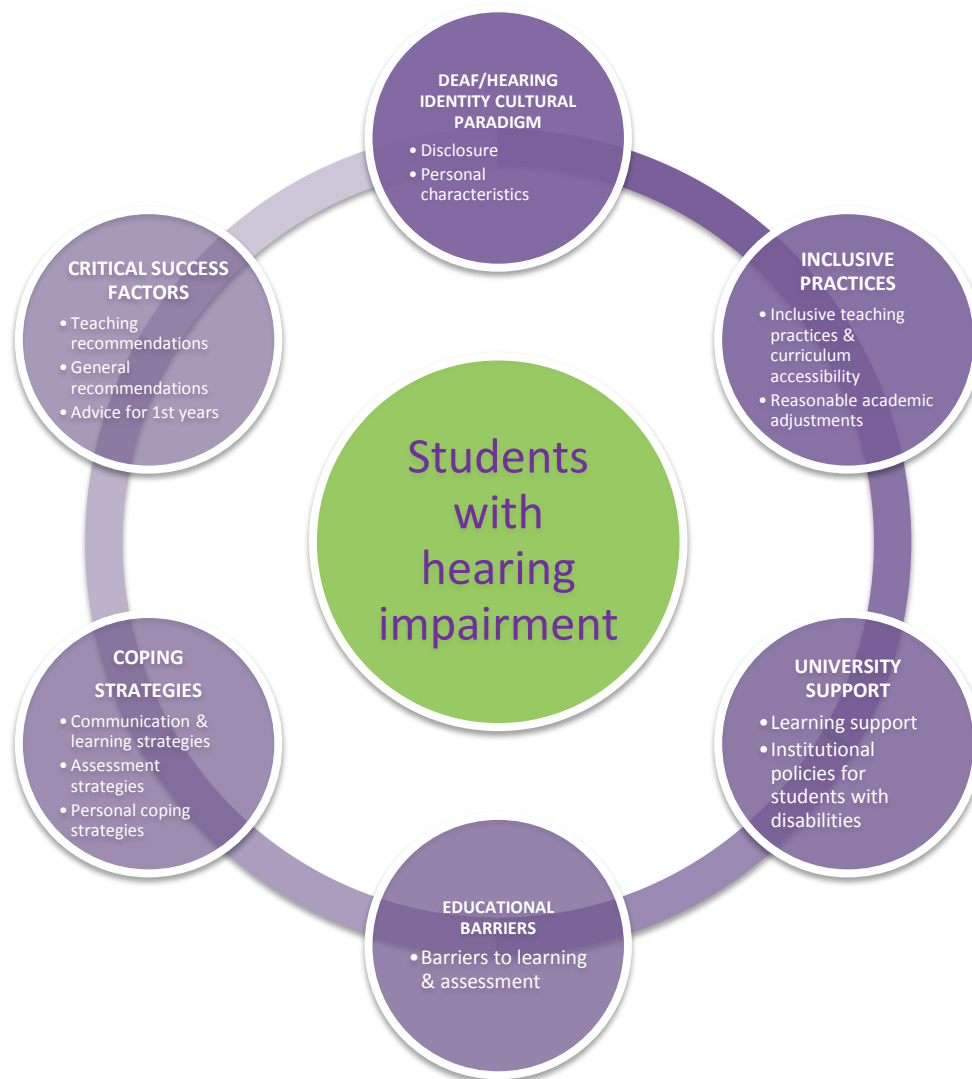
The central research question posed was: *“How do students with hearing impairment using the oral method of communication experience teaching and learning support?”*

Additionally, this inquiry was based on the following five research sub-questions:

- (a) Which, if any, curriculum transformation has occurred in order to accommodate the needs of students with hearing impairments?
- (b) Which support is provided by the university to students with hearing impairments?
- (c) Which barriers, in relation to teaching and learning, do students with hearing impairments experience and how do they attempt to overcome them?
- (d) Which factors did participants perceive might help them to complete their studies successfully?
- (e) Which components (both academic and non-academic), within the context of higher education, should be encompassed in a holistic Learning Support Framework?

## 6.2 DATA TRANSFORMATION, INTERPRETATION AND CONCLUSIONS

Figure 6.1 below is a representation of the summary of the dominant themes and categories developed from the conversations with participants during the interviews. This representation depicts the connecting patterns emerging from the data transformation (analysis). These categories are also directly aligned with each of the study's sub-research questions. At a secondary level, the relevant theory and research is tied in, as these themes are compared and contrasted to issues raised by the literature.



**Figure 6.1: Derivation of themes and categories**

The previous chapter presented the findings of this study by organising data from various sources into categories (see sections 5.5–5.13, and Appendix J) to produce a meaningful and coherent narrative, sharing the experiences of the participants. The purpose of Chapter 6 is to provide interpretative insight into these findings. Whereas Chapter 5 dissected the data to tell the “story of the research”, Chapter 6 is an attempt to reconstruct and describe a holistic understanding. The

intention is to depict an integrated picture, and what emerges is a layered synthesis. Throughout the process, the elements that continued to frame the analysis were:

- connections among the experiences as shared by the research participants;
- ways in which the participants explained and tried to understand their experiences;
- unexpected as well as anticipated relationships and connections;
- agreement or disagreement with the literature; and
- ways in which this data may extend existing literature.

The discussion takes into consideration the literature on inclusion within higher education, hearing impairment and identity, support for learning as well as barriers to learning and coping strategies. The implications of these findings are intended to augment the understanding of the educational experiences of students with hearing impairment in higher education in South Africa. The chapter concludes with a re-examination of my assumptions which were identified in the first chapter.

My efforts to make sense of and move beyond the large amounts of data generated for this case study research have been greatly aided by using Bronfenbrenner's systems theory (Bronfenbrenner, 1992) and bio-ecological model (Bronfenbrenner & Morris, 1998; 2005) as a tool and theoretical framework through which to filter my thinking and frame my interpretations. As these are my interpretations, it is important to acknowledge, before the discussion, that the most obvious human influence in this research is my own. It is through my perceptions, my experiences as a mother of a child with hearing impairment, my academic background, and my involvement in the disability sector, my reference to a review of the literature, my personal interests and my fieldwork experience through which the data has been filtered, organised and interpreted. Ultimately, it is through the words, specific terminology and language that I have chosen to use, that it has been presented as text.

Although a detailed explanation regarding Bronfenbrenner's work was provided in section 2.2.4, it is important to reiterate the salient points here, prior to elucidating my interpretations. The main tenet of his argument is that, in order to understand human development, one must consider the entire ecological system in which growth occurs. Five socially organised subsystems make up the holistic system, each helping to support and guide human growth. The subsystems range from the microsystem (see section 2.2.4), which refers to the relationship between a developing person and the immediate environment, to the macrosystem, which refers to institutional patterns of culture (Bronfenbrenner, 1992; 2005; Bronfenbrenner & Morris, 1998). An important component of his theory is the role of proximal processes (Bronfenbrenner & Morris, 1998:994).

These systems, adapted for a student with hearing impairment, are depicted in Figure 6.2. The student with hearing impairment remains central to the 'model', with various microsystems in the immediate environment. There is constant interplay (proximal processes) between these

microsystems, the student with hearing impairment and the environment, which refers to the second nested layer, the mesosystem. Examples of microsystems, as related to students with hearing impairment, may include their interactions with parents, peers, lecturers, curricula, the disability unit staff, academic tutors, etcetera. Each of these systems is able to have an impact on the student and vice versa. Beyond this layer is the exosystem, which could include factors related to the university environment, such as its mission and purpose, institutional culture, management, policies and administration – again each being able to have an influence on the student with hearing impairment. An example of this could be an institutional culture which is not disability-friendly or inclusive, which could negatively influence the availability of financial resources to purchase assistive listening devices such as FM systems. The second last layer consists of the macrosystem, which could comprise (at a macro-level) the attitudes, beliefs, culture and ideologies of society (to name a few), which are also able to influence, albeit from a greater 'distance', the individual with a hearing impairment. If civil society does not place a premium on being inclusive, then resources may not be driven in this direction, making life more difficult for a person with hearing impairment. Finally, there is the chronosystem which is linked to time. This system indicates that changes occur over time, which may affect the individual with hearing impairment. Political changes in South Africa (as well as many other factors), for example, have played a significant role in the drive for inclusive education. Educational opportunities for a learner with a hearing impairment are therefore very different today when compared with the situation 20 years ago. In conclusion, it is important to note that the bi-directional arrows in the model of the figure indicate the interplay between and amongst the various systems, over a period of time.

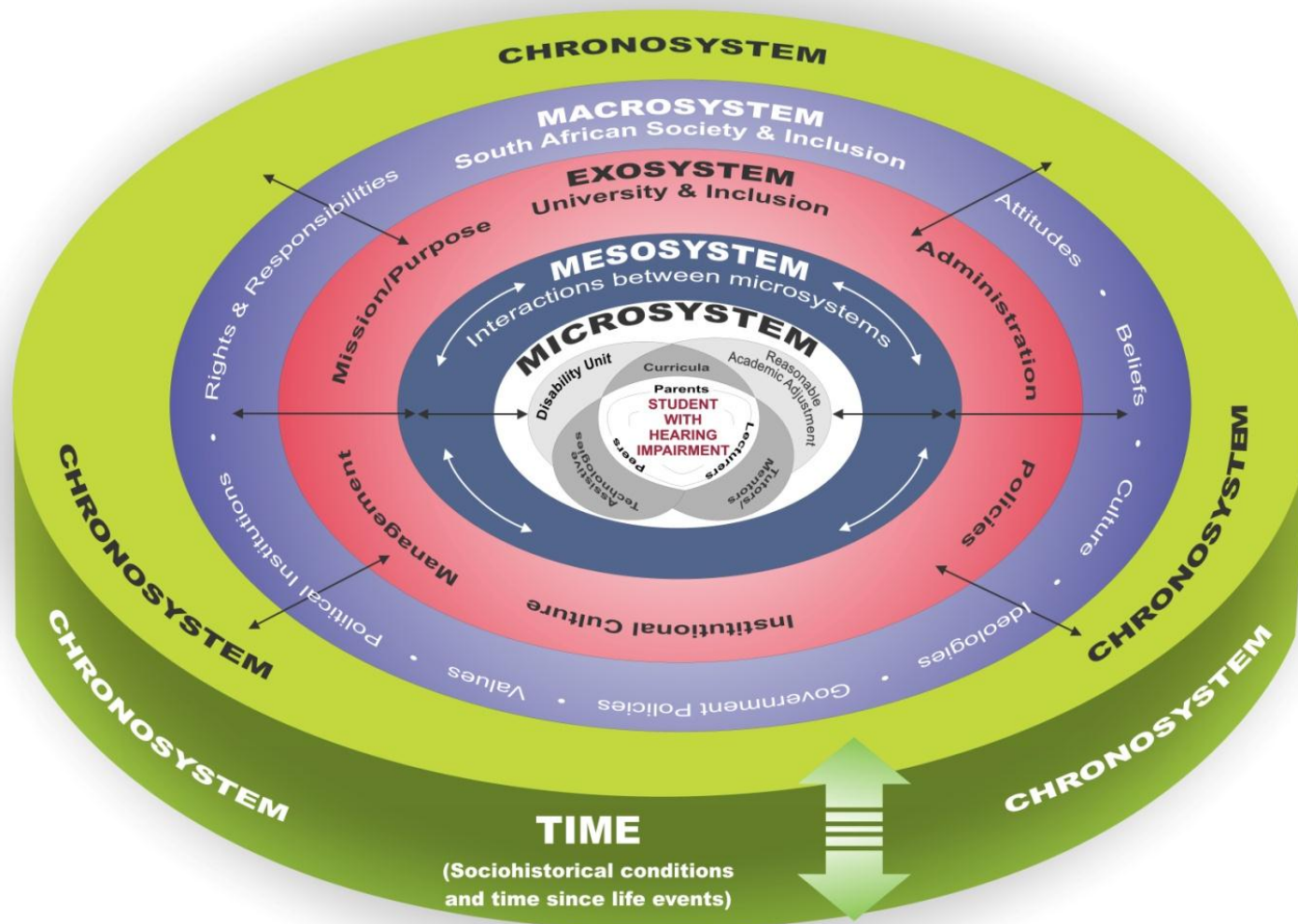


Figure 6.2: Bronfenbrenner's bio-ecological model (Bronfenbrenner, 2005) adapted for a student with hearing impairment

In the interpretation of the data, the conversations with and opinions of the principal participants, namely the students with hearing impairment, were accentuated. The data from the lecturers and the support staff member were utilised both to elucidate matters that the principal participants made reference to as well as to assign context. In addition, the interpretation of the findings of the document analysis was also used as supportive material. Six themes are presented below, namely Hearing/Deaf identity cultural paradigm, inclusive practices, university support, educational barriers and coping strategies, as well as critical success factors.

## **6.2.1 Theme 1: Identity cultural paradigm**

This first theme brings together the elements of identity, disclosure and personal characteristics.

### **6.2.1.1 Hearing/Deaf identity cultural paradigm**

As asserted by Thomas (2002:72), there is a grey zone between a normal and a disabled bodily state, which raises the question of identity. From the interviews it was evident that all of the student participants identified as being culturally hearing (Glickman & Carey, 1993; Wheeler *et al.*, 2007) rather than having a Deaf identity cultural paradigm, viewing the hearing world as 'normal' and the D/deaf world as 'abnormal'. Merle's response provided some insight into this phenomenon:

*With me having a disability in the first place, I don't see myself as disabled ... I have never been treated as someone who is deaf ... and with me they won't see immediately, they will assume that I am a normal person. That is how it has always been*  
(P6:S6\_F.doc – 36 & 81).

A study by Bat-Chava (2000:426) revealed that people with hearing impairment who may have assumed a culturally hearing identity, and having assimilated into a hearing world, often have a positive social identity, which was attained through academic overachievement. In this study, there was evidence of one student participant who displayed these tendencies. The majority of the students, however, were not coping well academically.

According to Johnstone's (2004) view of disability as an identity being a personal construction or a purposive attempt to making meaning of oneself in the world, the student participants in this study made use of self-identities that shift the focus away from the disability or, if 'forced' to disclose their hearing impairment, they would assume an overcompensating identity in order to cope with the notion of being classified as 'disabled'. Furthermore, according to Glickman and Carey's (1993) Deaf Identity Development Scale (DIDS), all of the student participants identified as having a 'culturally hearing' identity, which refers to the dominant 'hearing' understanding of deafness as a medical pathology. The fear of stigma and rejection of having a status of being a 'victim', which equates disability with powerlessness, also came out strongly in this study (Riddell *et al.*, 2005a).

One reason for assuming a hearing identity could be that they come from an oral tradition where lip- and speech-reading, as well as the use of their residual hearing are valued. Except for one

student whose mother and brother also had a hearing impairment, all of the participants came from 'hearing' families. The participants also only generally interacted with hearing friends and peers, feeling that their self-identity should depend on personal rather than audiological definitions and consequently contact with hearing peers was valued (Leigh, 1999). In such an environment, the hearing world is taken as the reference point for 'normality' and the participants therefore did not view themselves as 'abnormal' or 'disabled' in any way. The participants strongly rejected the stigma of being labelled 'disabled' (Goffman, 1963:74), and the wish not to be seen as 'different' but simply as any other university student, was expressed. Part of their hearing identity was taking on the responsibility to 'fit in' and cope in a hearing world in order to eventually gain employment and be economically independent. Some of the participants also mentioned that they viewed the use of oral communication as extremely important and that the use of Sign Language was severely limiting due to special schools being under-resourced and therefore often viewed as providing a lower academic standard than mainstream public and private schools. None of the participants had ever been exposed to Deaf culture or Deaf communities and felt that the use of Sign Language was not supported in higher education or society at large and was therefore never an option for consideration. It also seemed that in a 'hearing' academic setting which does not support the use of SASL, students with hearing impairment do not have a choice, in any event, to assume a Deaf identity. Furthermore, the interaction between all the possible factors contribute to the complexity of the assumed identity, rather than it simply being a choice between one or the other.

A second possible reason for the student participants having a hearing identity is the fact that they all came through mainstream primary and secondary schools, except for one student who attended a 'special' primary school for learners with hearing impairment. In this mainstream environment, they were not treated as learners with a disability. The school and their teachers knew about their hearing impairment but no special accommodations were available or provided, or were even deemed necessary, sometimes as a result of small class sizes. In each case, they were the only learner with a hearing impairment in their primary or secondary school, and therefore all their peers (and friends) were hearing. The main coping strategies used at school were to sit towards the front and to lip-read (if necessary). It seemed as if the students attempted to simply use the same strategies at university, but this was much less successful due to extremely large class sizes, lack of available seating in the front of the lecture venue and high levels of background noise and poor acoustics.

Thirdly, because of the often 'invisible' nature of a hearing impairment, especially for girls with long hair covering their hearing instruments, students with hearing impairment are often seen as 'normal' as the sensory impairment is not easily visible. Sometimes their hearing instruments are even purposefully hidden to avoid being labelled as 'deaf' or 'disabled'. It is often for this same



reason, namely to remain 'invisible', that students with hearing impairment refuse to make use of any assistive listening devices which could make them 'identifiable'.

This issue of identity is notable as students' self-perception and their perception of how others view them play a pivotal role in their interactions with both institutional processes and structures and this has major implications. For example, if a student with hearing impairment has a self-perception of being 'normal' or non-disabled, then his or her interaction with the institutional processes will be as a hearing student, without disclosing or requesting any learning support. The results of this study support the findings by Hindhede (2011), indicating that due to the invisibility of hearing impairment, the hearing disability identity is open to perpetual negotiation and by avoiding confronting their impairment, the students are not able to enjoy full and equal participation in academic life. The lecturers agreed with the notion of the students having a 'hearing identity' and mentioned that students with hearing impairment "simply want to be treated as normal". The same sentiments were expressed by the support staff member who was interviewed. The focus of institutional documentation, although purporting the social model of disability, was still focused on the medical or deficit model with the students having to 'prove' their disability.

Although the social interactions (inside and outside of the teaching environment) with hearing peers was not the focus of this study, it was interesting to note that most of the participants really valued their relationships with their hearing friends, relied on them for support when necessary and did not feel socially excluded within the university environment. They also found their friends very accepting of their hearing impairment and willing to support their needs. These findings are in direct contrast to a study conducted by Foster *et al.* (1999), which determined that students with hearing impairment do not feel as much part of the university family as their hearing peers.

#### **6.2.1.2 Disclosure**

The willingness of the student participants to disclose their hearing impairment was either purely for administrative purposes or to solicit additional support when encountering specific barriers to learning. Similar reasons for disclosure were also reported in a study by Getzel & Thoma (2008). All of the student participants disclosed on the university application form as it is a requirement, some disclosed their hearing impairment to their lecturers, but generally only if 'forced' to do so through circumstances, while only two of the students volunteered information regarding their hearing impairment to their friends and one of the participants deliberately used his 'disabled' status to secure a place in the university residence. Disclosure at university seems to be a 'reactive' action in most cases, as expressed by Noelene:

*I never went to tell them of my disability ... I feel it is not necessary to tell them unless I have a problem*  
(P7:S7\_M.doc – 7:13 & 95, Noelene).

This phenomenon also made it difficult in the beginning to identify the student participants in this study.

The most logical explanation for this could be linked to their 'hearing identity' and their rejection of being labelled or stigmatised as 'disabled' and therefore choosing not to disclose (Low, 1996; Watson, 2002). There are also no positive incentives to encourage disclosure such as the Disabled Student's Allowance (DSA) in the UK. A further reason for non-disclosure could be linked to the fact that at school it was not necessary to disclose their hearing impairment in order to solicit any particular academic support as none was available or the additional support was not required due to smaller class sizes or a lack of self-advocacy skills. The participants in this study did not want to define themselves or their relationships with others based on their hearing impairment. They tried to assimilate as much as possible into the hearing world by using their residual hearing, by using augmentative hearing devices such as hearing aids and cochlear implants, as well as speech-reading. It is also important to note that the degree of hearing impairment and age of onset also seemed to impact on the decision to disclose, for example, the participant with a less severe hearing impairment was more confident to inform his or her lecturers and required less support from his or her peers, than a student with a profound hearing impairment. Unfortunately, students are sometimes identified as having a disability by their lecturers and/or peers due to the visibility of their hearing instruments and are then 'forced' to disclose their hearing impairment and take on the label of being 'disabled'.

Both the lecturers and the support staff member interviewed agreed that students with hearing impairment only elected to disclose when they experienced a 'problem' such as failing a subject, and that the approach is generally reactive. The main outcome of non-disclosure, as similarly reported by Schroedel *et al.* (2002), is that the staff members and management at the university remain unaware of the numbers of students with hearing impairment on their campuses, which results in a low level of awareness of their needs, and as such, the existing situation remains.

### **6.2.1.3 Personal characteristics**

The findings of this study revealed that students with hearing impairment display both positive and negative personal characteristics that can influence their ability to be successful at university. Some of the positive personal characteristics included being self-motivated to pursue a university education, being self-reliant, persistent, mature and responsible and having self-determination. Characteristics displayed that could detract from attaining successful educational outcomes included an unwillingness to disclose their hearing impairment or make use of support provisioning or assistive listening technologies, lack of self-advocacy and introversion, for example not asking a lecturer to make use of a microphone. It is important to note that, although these personal characteristics are unique to each individual, they do relate to the student's decision to disclose or request support, which has implications in terms of these students' academic performance.

In trying to understand this phenomenon, it may be argued that these negative characteristics, traits or behaviours could have been learnt through previous negative experiences when requesting support. One student participant, Merle, requested a notebook computer which could provide enhanced audio output for her to be able to hear comfortably. She received the computer but her communication need was not met despite there being both hardware and software solutions available:

*No, I get the feeling that there is much more things in place for the students with visual disabilities than for hearing disabilities. You can see that from all the students that are here that have visual disabilities. The university is borrowing [sic] me a laptop because I have a disability, they are doing that for all the students with disabilities and that is great, I really appreciate that, but then they ask me if there is any programs that they can put on for me and then they said, as they have JAWS that they put on for the students with visual disability and then they, because many times the computer is too soft, isn't there something that you can make it louder and they say they don't have anything ... That was bad for me because they give this laptop ... but they don't do anything for my specific need which is why they give it to me ... they can be more focused on supporting my needs (P2:S2\_F.doc – 2:134, Merle)*

This experience could have resulted in her not making any further requests for support in future, assuming that it would not be possible. Secondly, environments which are not inclusive or inaccessible for students with hearing impairment discourage self-confidence and encourage withdrawal, such as not asking questions in class and/or they may not be able to hear the answer.

A third possible reason could be that students with hearing impairment are not taught critical personal skills such as self-advocacy from a young age; they rather learn how to 'blend in' and 'cover up', often by 'bluffing' (Jambor & Elliott, 2005) – in this way maintaining their 'invisibility' and discouraging any form of 'extravisibility' (Goode, 2007). They also try to avoid shame and embarrassment at all costs. The lack of self-advocacy skills could be ascribed to them not having to advocate for their needs at primary or secondary school level as either their needs are met (e.g. due to small class sizes, sitting in front and lip-reading) and they are able to cope, or there is no additional learning support to request or decisions regarding disclosure and support are made by 'others' such as their parents and teachers. One of the main reasons for the lack of self-advocacy could be that students with hearing impairment in South Africa may not be aware of their rights as a person with a disability or the types of support available at the university. A significant consequence of these 'negative' characteristics is that the communication and learning support needs of students with hearing impairment remain unfulfilled in higher education which may lead to serious negative academic outcomes.

As explained by Bronfenbrenner (1993:11), "the attributes of the person most likely to shape the course of development, for better or for worse, are those that induce or inhibit dynamic dispositions towards the immediate environment", which he names "developmentally instigative characteristics". He goes on to describe four types, with the first being those that "act to invite or inhibit particular responses from the environment" (Bronfenbrenner, 1993:11), which was relevant to this study.

Related to this argument, students with hearing impairment displayed both positive and negative character traits which ultimately either hindered or helped them academically. What was also pertinent in his argument was that differences in developmentally instigative characteristics seemed to account for some of the variability of outcomes regardless of such non-environmental characteristics such as race, ethnicity, gender and age.

The data in this study contradicted the notion of students with hearing impairment being 'victims'. The participants did not view themselves as such, as they chose whether or not to disclose their hearing impairment and whether or not to request accommodations. Similarly to the findings by (Goode, 2007), two of the participants, especially those who struggled academically, did express feelings about the degree of emotional work that was necessary to access any form of support from lecturers and that they often did not have the energy to constantly request the same accommodation, e.g. making use of a microphone or not walking up and down in class whilst teaching. There was also evidence of high levels of anger and frustration as expressed, by Colin:

*Well the real barrier is communication ... when a lecturer is explaining something it is frustrating because most of [subject] is about concepts and understanding so you have to focus and you can't always hear what he says so I really rely on the PowerPoint notes that they have on WebCT as it explains the stuff to you. It is just frustrating because it is not like you can ask for the PowerPoint notes, if I could have heard what he said maybe I could have seen that I don't understand and ask him, but I don't know what to ask because I can't hear what he is saying. That is really frustrating ... The barriers are frustrating. I rely on my friends mostly.*  
(P5:S5\_M.doc – 5:58 & 126, Colin)

The views of the lecturers differed, depending on the individual student, but generally they agreed that students with hearing impairment were unwilling to ask for support and refused to make use of any assistive devices as they did not wish to draw attention to themselves. On the other hand, some acknowledged the positive characteristics displayed by the students such as self-determination, commitment and focus, and commented that these students could be role-models for their peers.

The findings of this study support the outcomes of the following previous studies:

- that there is a need for students to accept their hearing impairment and understand how it influences their learning (deFur *et al.*, 1996);
- that it is very important to develop the skills of self-representation and self-advocacy prior to entering university (Lyner-Cleophas *et al.*, 2009);
- that there is a need for effective self-advocacy skills (Taylor, 2004);
- students with hearing impairment are least likely to communicate any difficulties that they experience (Nicholson, 2007); and
- students with hearing impairment must be more involved in redirecting their futures (Lang and Meath-Lang 1992) by learning to arrange their own accommodations to the greatest extent possible (Shaw *et al.*, 2009).

On the other hand, the findings of this study did not support the outcomes of research conducted by Bishop *et al.* (2000) which purported that students with hearing impairment are often isolated. The student participants in this study had many hearing friends and generally felt socially included.

#### **6.2.1.4 Summary**

In summary, the consequence of students with hearing impairment having a 'hearing' identity (and thus viewing themselves as non-disabled or 'normal') is that they often do not disclose their hearing impairment to the disability unit, lecturers or peers as they prefer to remain 'invisible'. This demonstrates how strong the stigma of hearing impairment can be, how strongly it is perceived by these students, and how profoundly it affects their behaviour. Due to non-disclosure, these students remain unaccounted for and unsupported, experiencing many more barriers than they should. The choice made by students not to disclose may be detrimental to their academic success as it limits the extent to which an institution is able to provide appropriate support (Houghton, Piggott & Armstrong, 2006). Furthermore, the lack of disclosure resulted in the university being unaware of the actual number of students with hearing impairment and therefore the status quo remained. Ultimately, positive personal characteristics are conducive to successful educational outcomes whereas 'negative' characteristics or the lack of positive characteristics can negatively influence both their educational experiences and academic outcomes.

The categories of identity, disclosure and personal characteristics all reside within the immediate surroundings of the student with hearing impairment and are inter-related and thus form part of the microsystem. The identity of the student is formed from his or her early years when hearing parents make a choice, on behalf of their child, to follow the aural/oral communication approach, making use of hearing aids or cochlear implants. This 'learnt' identity is reinforced when the parents choose to enrol their child in the mainstream schooling environment and to provide individualised speech and language therapy (focusing on verbal skills i.e. 'oralism'). Therefore by the time these young people transition to university, this hearing or non-disabled identity is firmly entrenched and affects their willingness to disclose their hearing impairment or the choice to become 'visible' if they make use of assistive technologies such as FM systems. The students are also directly involved, on a daily basis with curricula and they may interact with staff from the disability unit. The critical point here is that the student helps to construct his or her social setting through his or her choices and interactions. Furthermore, the ongoing and complex interactions between the proximal processes (person–environment interactions) within the mesosystem, such as the student with hearing impairment (microsystem) and his or her parents (microsystem), identity (microsystem), disclosure (microsystem) and personal characteristics (microsystem) all play a part in modifying not only one another but most importantly the individual him- or herself.

## 6.2.2 Theme 2: Inclusive practices

This second theme brings together the elements of inclusive teaching practices, curriculum accessibility and reasonable academic adjustments.

### 6.2.2.1 Inclusive teaching practices and curriculum accessibility

In the main, teaching practices at the university are not inclusive and those specific practices that students with hearing impairment found useful, such as the provision of electronic notes and the use of electronic calendars were not deliberate attempts to be inclusive but were typical for post-modern universities in a technological age. The use of microphones was also not specifically intended to accommodate students with hearing impairment but rather an attempt to enhance audibility due to large classes. One useful practice was the request by the disability unit for preferential seating in particularly large classrooms. Unfortunately without 'enforcement' by the lecturer, or if there is insufficient available seating, these rows of seats become occupied and unavailable to the students that need to be seated in the front to be able to hear and lip-read. Merle shared her negative experiences in this regard:

*There is space, like the first row, for students who have disabilities but many times other students go sit there as well...lecturers should also say to the other students that they shouldn't sit there as this is reserved for the students with disabilities. Because many times I wanted to sit there but I couldn't because other students were sitting there, because I don't think they are aware of that. But there is a sign on the table.*

(P2:S2\_F.doc – 2:196, Merle)

Furthermore, curricula are largely inflexible with little transformation having taken place (since first admitting students with disabilities at the university) in order to accommodate students with hearing impairment, with existing curricula not subscribing to the principles of accessibility, flexibility or universal learning design and thus not being responsive to the needs of the students. It is disconcerting to note that similar findings regarding inaccessible teaching practices and curricula have been reported since 1998 and that the situation has yet to improve (CHE, 2005; FOTIM, 2011; Howell, 2006:168; SA, DoE, 2005). A study by Cummings *et al.* (2003) reported that the focus of inclusion was on organisational characteristics instead of important issues such as pedagogy, curriculum and educational outcomes. Although focused on the school environment, the findings from this study are similar for the case study university, indicating a need for real change. The results of research undertaken by McLean *et al.* (2003) revealed that the lack of curriculum flexibility and the barriers to curriculum access developed because of the way in which learning support services for students with disabilities had been conceptualised. Similarly, at the case study university in question, the conceptualisation of support is still based on the deficit model of disability which has a significant impact on student learning.

There are a number of potential reasons, emanating from the data from this study, for teaching practices at the university not being inclusive and for the lack of curricula transformation, such as:

- a university culture which is not inclusive;
- no formalised approach to inclusion (top-down approach);
- a lack of awareness regarding how to teach and/or support students with hearing impairment;
- a need for staff development and training, which should be mandatory at all levels;
- no formal government policy to drive inclusion in higher education;
- no monitoring of the implementation of the university policy for students with disabilities;
- a lack of policy awareness (staff and students);
- university management's view of disability as a 'reactive' or 'add-on' measure;
- attitudinal barriers to implementation of inclusive teaching practices;
- lecturers being unaware of students with hearing impairment in their classes as the students do not disclose;
- the responsibility of support provision residing with the disability unit and not being seen as part of the 'job' of the academic;
- the medical or deficit approach to disability still being dominant at the university;
- lecturers were not being held accountable for non-compliance with respect to the implementation of inclusive teaching practices and/or reasonable academic adjustments; and
- the legislative and policy framework on inclusive education in South Africa mainly focusing on schools and not on higher education also.

According to the participant from the disability unit, the level of support for students with disabilities varies from lecturer to lecturer. On the one end of the scale, some were being quite proactive and consulting with the disability unit, and at the other end there was complete refusal to support the needs of the student. Some of the lecturer participants shared a willingness to help but were unsure 'what to do' and felt that they were not being guided by either the student or the disability unit. The lecturers were also not aware of universal accessibility or universal learning design (ULD) and their 'usual' pedagogical practices prevailed. An analysis of university documentation revealed that there is a focus on the financial aspects of supporting students with disabilities thus allowing for non-delivery of support. The annual reports (2011; 2011) of the disability unit focused on students with visual impairments and any additional funds being invested in technologies to support their needs, but no mention was made of support for students with hearing impairment. Furthermore, there was no mention of specific support available at the university for students with hearing impairment in any of the analysed documentation.

### 6.2.2.2 Reasonable academic adjustments

Reasonable academic adjustment or modification refers to strategies that minimise or eliminate the impact of a disability, allowing the individual to gain access or have equal opportunity to participate in the university's courses, programmes, assessments, services and activities. Limited reasonable academic adjustments had been made for students with hearing impairment at the time of the study. Only one of the participants requested and received permission to make use of additional time, at ten minutes per hour, for the completion of assessments, and a few large venues have preferential seating (although this arrangement is seldom implemented). The student participants were unaware of any academic adjustments available to them, such as extra time for assessments. Six possible reasons, as emanating from the data, may account for this, namely

- non-disclosure of hearing impairment;
- students unaware of the availability of academic adjustments as the university and/or disability unit does not readily share this information or no adjustments are available;
- students did not make use of any such adjustments at school; therefore, they did not know of the existence of any adjustments or they felt that, as a person with 'only a hearing impairment' (not disabled) they do not qualify for or are not entitled to any academic adjustments;
- the students might not fully have realised the implications of their hearing impairment on language or learning, although this depends on the age of onset and degree of hearing impairment;
- the university does not have a policy specifically dealing with reasonable academic adjustments (accommodations) for students with disabilities; and
- reasonable academic adjustments (and other support) are not offered at the university on account of saving on financial resources (as well as other possible reasons) – the employment of language tutors/editors (as well as other support provision) would for instance require a substantial financial commitment.

Two additional reasons for the low level of academic support for students with hearing impairment may be due to lecturers who treat students as 'normal' and then forget to make any adjustments (Punch & Hyde, 2005) or there is currently no model of best practice in higher education in the country from which universities can learn. The document analysis revealed that lecturers are given autonomy to adapt their assessments, so there is no reason why this practice does not take place to accommodate the needs of students with disabilities, other than either an unwillingness to do so or a lack of knowledge on the part of the lecturers.



### 6.2.2.3 Summary

In summary, existing curricula and teaching practices remain mostly inaccessible to students with hearing impairment at this university, and in higher education in general in South Africa. The principles of ULD are yet to be incorporated into current pedagogy, leaving inclusion still to be realised at the university. Moreover, no attempt has been made at the university to incorporate reasonable academic adjustments to accommodate the language and communication needs of students with hearing impairment. Some progress regarding inclusion, however, has been made for students with visual disabilities.

The categories of inclusive teaching practices and reasonable academic adjustments similarly reside in the microsystem as they have a direct impact on the development of students with hearing impairment and their socially constructed environment. Teaching practices which are not inclusive and the lack of provision of reasonable academic adjustments affect the student's learning environment and necessitates the use of personal coping strategies. Additionally, the reciprocal relationships between the proximal processes within the microsystem, namely students with hearing impairment, teaching practices and reasonable academic adjustments form part of the mesosystem. If the students disclose their hearing impairment and the lecturers implement more inclusive teaching practices together with reasonable academic adjustments such as the provision of glossaries, this would benefit students as they will not have to rely on their peers or make use of other personal coping strategies. This demonstrates the reciprocal nature of the interactions between systems and proximal processes within systems.

### 6.2.3 Theme 3: University support

This third theme brings together the elements of learning support and institutional policies for students with disabilities.

#### 6.2.3.1 Learning support

Support services offered to students with a hearing impairment at the university are largely inadequate, including both human and technical support. Participants were also mostly unaware of the availability of support services and the uptake of support provision was also low. The unwillingness of the students to engage with the disability unit and to request support was clearly expressed by the support staff member:

*Then we have the category of students who does not notify anything. They don't say anything [about their disability]. Now we also have students who notify where they actually say that they do have a disability, but we would not see them. So, they would say they are fine and if they have a problem then they will come and let us know and then we just never get to hear from them again. Typically we do not get to see many of the students with hearing impairment*  
(P8:O1\_F.rtf – 8:14)

Currently, the only learning support that has been made available to the students include academic tutoring, mentoring, extra time for assessments, preferential seating and the use of peers for taking notes or sharing their notes with students with hearing impairment. It is important to note that both tutoring and mentoring are available to all university students. One student participant who made use of the note-taking 'service' did not find it helpful as he struggled to understand/interpret the handwriting and the notes taken, as they reflected someone else's thinking or filtering of the information based on that person's prior knowledge and/or context. There is an increased need for learning support at the case study university, such as academic one-on-one tutoring as the teaching venues are inaccessible due to the unavailability of audio induction loop systems, other well-functioning audio equipment such as public address (PA) systems with high-quality speakers or microphones.

The low level of awareness of learning support provisioning offered at the university as well as the existence of policies specifically related to students with disabilities may be explained by one or more of the following reasons:

- non-disclosure, the often 'invisibility' of hearing impairment, having a 'hearing identity' and a lack of self-advocacy skills may lead to a low demand for these services;
- students only request additional support after a 'critical' incident, such as failing a subject, so the demand remains low;
- information regarding the types of learning support, specifically for students with hearing impairment, is not readily available nor widely advertised (Borg *et al.*, 2008);
- there is a lack of awareness of policies related to students with disabilities at the university;
- support staff and lecturers are not sufficiently knowledgeable regarding the communication and learning support needs of these students;
- hearing impairment is unique to each individual student and there is thus no 'one solution to fit all';
- learning support provisioning for students with hearing impairment is expensive, e.g. individual note-takers per subject/per class;
- historically, the university has focused on supporting the needs of students mostly with visual impairments so there is a lack of experience in supporting students with hearing impairment;
- there seems to be a lack of knowledge and experience of the various types of communication and assistive technologies available commercially that could be very helpful to students with hearing impairment; and
- one of the student participants mentioned having had a 'negative' experience when interacting with staff from the disability unit, which could adversely influence these students' willingness to request support in the future.

On the other hand, another student shared a very positive experience of having had contact with staff from the disability unit and the support and referrals that she had received were most helpful. Furthermore, the fact that very few students with hearing impairment, oral or signing, actually progress to higher education, results in the registration numbers remaining low and therefore demand for support remaining low. University campuses are also generally a little more accessible to persons with physical impairments, rather than with sensory impairments.

During the interview with the support staff member from the disability unit, the following facts were acknowledged, supporting the views of the student participants, namely:

- the provision of support for students with hearing impairment is limited;
- hearing impairment is difficult to support due to unique and complex needs;
- the university management is not committed to sufficient financial investment in communication and assistive technologies, as well as the provision of alerting (light and vibration) devices in the residences; and
- historically the focus at the university has been on supporting students with visual impairments and the disability unit does not have sufficient funding to pay for note-takers.

The above was also supported by the views of the lecturers, with special reference being made to their high levels of frustration regarding the limited support for students with hearing impairment, their lack of knowledge on how to support the students and not being informed or adequately supported by staff from the disability unit. Apart from lecturers raising the issue about not being informed about the students' hearing impairment, it is important to point out that literature clearly shows that there is a need for students to self-disclose. Furthermore, if the lecturers are not aware of students' hearing impairment, they are not able to accommodate such students' communication and learning needs. Lecturers also concurred with the focus of support provisioning being for students with visual impairments. On the other hand, the disability unit provided lecturers with some guidance on the provision of reasonable academic adjustments and inclusive teaching for students with hearing impairment, yet there had been no implementation at the time of the study. Perhaps it is a situation of simply redirecting responsibility and 'blaming each other'.

In addition, an analysis of applicable university documentation similarly revealed the focus on visual impairments and the limited, or even 'uninformed', support offered to students with hearing impairment. These students also have to provide their own assistive listening devices, which they can often not afford. Mention was also made of faculties being able to apply for funding to a special strategic fund to support the needs of students with disabilities but no such requests have been made. There seems to be the opportunity for additional support but not the willingness to execute such.

### 6.2.3.2 Institutional policies for students with disabilities

Both the student and staff participants were mostly unaware of any institutional policies related to 'students with disabilities'. One of the students knew of its existence as someone had mentioned the policy, but she did not know where to access it and had therefore not read it. This lack of access to information can also be linked to a lack of awareness of their rights as students with disabilities and perhaps also to non-disclosure. There seems to be a general lack of awareness at the case study university regarding the issues of inclusion and accessibility. Various reasons could account for this situation. Firstly, the institutional policy for students with disabilities is not disseminated to either new incoming students with hearing impairment nor to their lecturers. It is also not available on the webpage of the disability unit or the institutional website. Secondly, students were not accustomed to being specially supported at the school level and there were no specific school policies related to 'learners with disabilities' (that they were aware of) so therefore there is no expectation in terms of policies or support in higher education. Colin shares his experiences of high school versus university:

*... school firstly is a lot easier, also the tempo of work is a lot easier, classes are smaller and the teachers are more ... they look more at the individual ... so there is no real need for them to do anything special ... being deaf didn't really affect me until I came here*  
(P5:S5\_M.doc – 5:126, Colin).

From the experiences shared by Colin, it seems that students with hearing impairment are familiar with self-coping strategies from the primary and secondary school levels. A third, and more covert reason for the absence of awareness of the policy for students with disabilities, could be a deliberate attempt by university management to avoid being held accountable to support the learning needs of these students due to high cost implications. A further reason could be related to the non-inclusive ethos of the case study university which displays a 'reactive' or 'add-on' approach to supporting the needs of students with disabilities. The responsibility and onus are on the student to provide his/her own assistive technologies and to 'discover' any information concerning support, often when it is too late. In this way, the status quo remains.

The findings of this study support the outcomes of the following previous studies:

- in an attempt to be normal or non-disabled, students with hearing impairment refrain from requesting any accommodations that would facilitate communication (Hindhede, 2011);
- students with hearing impairment have limited awareness of their rights to request accommodations (Russell & Demko, 2006);
- at university level, the responsibility to request support services lies with the student (Gardner *et al.*, 2001);
- first-year students are not aware of which support is available to them at university or even that it is available (Borg *et al.*, 2008; Cawthon, 2008/2009; Russell & Demko, 2006);

- students with hearing impairment who do not disclose do not make use of accommodations (Brett, 2010);
- support at the university is conceived of in individual terms rather than broad systemic change which only has a limited impact (Shevlin *et al.*, 2004);
- universities claim to adhere to and support the social model of disability, yet both the placement of disability support services within the realm of student welfare and the experiences of students rather indicate an alignment with the medical model (Borland & James, 1999); and furthermore
- some staff members working in disability units are inadequately trained (Dukes & Shaw, 1998), in this case, in supporting students with hearing impairment.

Conversely, the findings of this study contradicted the results from a study by Albertini (2012), which reported that students were confident and knew how to access support, while research conducted by Riddell (1998) cautioned against the 'technological fix'. which assumes that the barriers faced by individual students are able to be remedied by a particular piece of equipment. Although their argument, in isolation of other support, is valid, in the case of students with hearing impairment, there is a need for technology to facilitate communication access, but this should be in addition to curriculum accessibility and reasonable academic adjustments.

### **6.2.3.3 Summary**

In summary, students with hearing impairment are inadequately supported with respect to their learning and communication needs at the case study university. There is also a lack of awareness regarding institutional policies related to students with disabilities, or their rights in general. This issue is larger than the university itself and extends to the lack of governmental policies to drive transformation in higher education with specific reference to students with disabilities and the way they should be supported, as well as a need for financial resources. Until such time as universities are held accountable for the quality and extent of support provided to students with disabilities, the current untenable situation will remain. However, the sole blame cannot be laid at the feet of government only; many universities have also neglected their responsibilities and have chosen to blatantly ignore the needs and rights of students with disabilities.

The category of academic learning support for students with hearing impairment is also part of the microsystem. The student interacting with the staff at the disability unit and their knowledge concerning supporting hearing impairment, as well as the availability of both human and technological support provisioning, have a direct impact on these students' educational experience. This support is, however, also influenced by the university culture, management's commitment to inclusion and the provision of financial and human resources which form part of the exosystem. The category of institutional policies at the university related to students with disabilities also forms part of this system. Students are not directly involved in the formulation of these institutional

policies but are subjected to the rules of these policies and thus their educational environment is influenced by such.

#### 6.2.4 Theme 4: Educational barriers

This fourth theme brings together the elements of barriers to learning as well as barriers related to assessment.

##### 6.2.4.1 Barriers to learning and assessment

A significant number of barriers related to learning and assessment were experienced by all of the participants. These barriers were largely associated with communication, teaching practices and assessment. The experiences of students, in relation to these barriers, varied depending on the severity and age of onset of their hearing impairment. The major barriers faced by students with hearing impairment related to their primary (oral) mode of communication, more specifically the audibility and accessibility thereof. Examples of some of these barriers related to teaching practices and communication, as shared by the student participants included:

- an inability to hear or lip-read the lecturer (especially when switching between two languages without warning);
- difficulty following class discussions, high levels of background noise and poor acoustics (especially in large venues);
- inaccessible teaching methodologies (such as the lecturer talking whilst writing on the board);
- poor lighting when using a data/video projector (students not able to lip-read); and
- lecturers not making use of audio equipment (or the equipment is in a state of disrepair or not available at all).

These are some of the experiences as shared by the participants:

(Bilingual teaching – lecturer) *Our lectures in this university bring in English because of the policy which would be difficult to do lip-reading in your 2<sup>nd</sup> language and when we switch over to the other language, that was a big frustration for her and you know, she would first have to identify whether you were lecturing in Afrikaans, and then she could go on trying to lip-read*  
(P14:L6\_F.doc – 14:22, Lecturer)

(Following class discussions – student) *If a student is sitting in front of me then it can be quite a problem because the sound is away from you and you are not able to lip-read ... that is a problem. I can't always follow because some lecturers don't repeat the question, they just answer and I don't know what was asked*  
(P3:S3\_M.doc – 3:217, Paul)

(Inaudibility – student) *But sometimes I will ask them to speak, like many lecturers don't like to use the microphone, but the class will ask them to use it, and they will be like, "I will just do this (speak louder without the microphone)", but it doesn't really help, like them standing in front or trying to talk louder ... it doesn't help. It is very frustrating*  
(P2:S2\_F.doc – 2:98, Merle)

The reasons for the existence of these barriers vary and it may be argued that, without incorporating the principles of universal accessibility, the teaching venues at the university were not originally designed with the communication needs of students with hearing impairment in mind and as a result they are acoustically sub-optimal and not fitted with appropriate audio systems. The focus on improving building accessibility is currently focused on persons with physical impairments, such as wheelchair users. A second reason, related to teaching methodologies, is the lack of professional development and awareness training for lecturers regarding universal learning design (ULD) (if working proactively and inclusively) and/or reasonable academic adjustments (which are more retrospective). Workshops currently offered, with only one module on diversity, are voluntary. As part of the university's language policy, lecturers in some faculties are required to teach bilingually, which creates an enormous communication barrier for students with hearing impairment. Often these students are only proficient and comfortable in one language; or even if they are bilingual, when a lecturer switches languages<sup>9</sup> without warning, it is problematic.

The issue of large class sizes as a result of the massification of higher education in South Africa, works to the detriment of inclusion and creates enormous communication barriers for students with hearing impairment, especially when accommodation of preferential seating is not enforced by the lecturer or respected by the students. A further important barrier relates to the attitudes of lecturers (Fuller *et al.*, 2004) towards students with disabilities and their own perceptions of their willingness to be supportive, but this is not realised. This notion was clearly expressed by the staff member from the disability unit:

*... but I think there is not always that consciousness, you know. I am always baffled by it ... it is not like you have a whole lot of students to support, you have one. I don't know if this makes it more difficult to remember one student, I would think it is easier, but it seems to me, to remember information needed for one student or adaptation, seems to be challenge for lecturers. They would say it is easy to forget. You know, I think there is a willingness, but it goes hand in hand with consciousness to do it. You can say you are willing to, but you may not be conscious about it, then it actually means nothing to me. So, sometimes it seems to me that people are willing, but I don't always get the effort that is required. With willingness comes effort that you need to put in.*  
(P8: O1\_F.rtf – 8:32)

The interview with the support staff member from the disability unit confirmed the barriers shared by the student participants, but special mention was made of two points. Firstly, students with hearing impairment often do not 'look' disabled so the 'lecturers forget about them', and secondly, many of the lecturers have a negative attitude regarding inclusion and making a 'special' effort. The discussion with the lecturers, on the other hand, centred on a lack of support from the disability unit, such as no provision of note-takers, parental interference (in some cases), large classes, language policy and bilingualism. When comparing the three different viewpoints, it would

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<sup>9</sup> Language switching is part of a larger debate in South African higher education concerning 'multilingualism' and teaching in the language of a student's mother tongue. This issue, albeit important, was not extrapolated on in the thesis as it is not part of the central focus of the study.

seem as if the students (those who disclose) expect support from the disability unit and their lecturers, whereas the disability unit have expectations in terms of delivery in the classroom (the lecturers and their teaching). In the absence of any technological solutions and the lecturers not focusing inwardly, such as on their attitudes and teaching methodologies, the expectation of the lecturers is that assistance should come from outside their classroom, namely the disability unit, or in the form of technology. Or even worse, as shared by the staff member from the disability unit, some lecturers have the attitude that the 'problem' belongs purely to the student. The roles and responsibilities therefore seem very unclear and contradictory.

The student participants also made mention of a number of barriers which they experienced related to assessment, such as difficulties understanding the questions being asked and having to refer to both languages (English and Afrikaans questions) for clarity, instructions being given verbally, rather than written on the board, resulting in the student missing out on important information as well as high levels of anxiety due to "the insecurity of not knowing" and invigilators not being 'disability-sensitive'. Some negative assessment-related experiences were shared by two of the student participants:

*Sometimes it is difficult to hear them, because it is a test environment so we can't ask the person next to us and then they can't always, the invigilator can't always come to us to answer our questions, so it takes a lot of time to ask the questions and it takes a lot of time for them to come to me and the other students have already started writing and I can't start writing until she has come to me, so that is very difficult ... I get anxious because I feel helpless.*

(P2: S2\_F.doc – 2:175-177, Merle)

*In the venue, the invigilators, when they give instructions, because most of the venues are large, normally they don't use the microphone and if you don't get a seat in front then it is quite problematic to ask something and being a test you can't just lean over and ask the guy next to you "what did she say?"*

(P3: S3\_M.doc – 3:167, Paul)

Under these formal examination conditions, students with hearing impairment are unable to rely on their peers for support and guidance, as is usual practice. From the point of view of the staff member from the disability unit, the onus is on the student to inform the invigilator and request him or her to write instructions on the board. This creates a problem as the students, as discussed previously in this chapter (refer to section 6.2.1), do not wish to disclose their hearing impairment and many of them lack self-advocacy skills and wish to rather remain 'invisible'. Furthermore, due to cost restrictions such as having to pay an additional invigilator, students with disabilities are not allowed to write in a separate examination venue.

The findings of this study support the outcomes of the following previous studies:

- negative attitudes of lecturers are a significant barrier with few having made the paradigm shift to inclusion (Nursoo, 2006);
- there is a need for more staff preparation (Yocom & Coll, 1995) specifically related to hearing impairment (Lang, 2002);



- students with hearing impairment encounter so many practical barriers that their ability to study may be undermined, resulting in low persistence (Reindal, 1995); and
- explaining their needs repeatedly leads to high levels of frustration (Holloway, 2001).

It seems that the common thread throughout this discussion relates to the fact that students elect not to disclose their hearing impairment, which precludes them from receiving learning support. This, in turn, results in these students experiencing many barriers and having to devise personal coping strategies. In summary, students with hearing impairment face many barriers at university, including attitudinal, pedagogical, communication, assessment practices and environmental, all of which may have a potentially negative impact on both the students' educational experience as well as their academic attainment.

The extent of the barriers experienced by students with hearing impairment at the university are the result of the proximal processes within the microsystem, the relationships between these microsystems (the mesosystem) and the influence of the macrosystem. For example, in the absence of policies to drive inclusion in higher education (through the DHET), university management will not prioritise accessibility, and without sufficient financial resources, staff in the disability unit are unable to provide the necessary support to aid accessibility for students with hearing impairment. In addition, the chronosystem also plays a role. "It encapsulates the dimension of time and how it relates specifically to the interactions between these systems and their influences on individual development" (Swart & Pettipher, 2011:15). The drive for the implementation of inclusive education in South Africa is fairly recent, for a number of social, economic and political reasons, and the focus so far has been on the school environment. The history of the country and the transformation of the education system have therefore also had an influence on the promotion of inclusion in higher education.

### **6.2.5 Theme 5: Coping strategies**

This fifth theme brings together the elements of communication, learning and assessment strategies.

#### **6.2.5.1 Communication and learning strategies**

As a result of the many barriers which they face due to receiving limited learning support, students with a hearing impairment are compelled to discover their own ways of coping at a 'hearing' university. Because of their 'hearing identity' and non-disclosure, as well as their preference (for some students) to remain 'invisible', some of the barriers can be viewed as 'self-inflicted', resulting in a high level of self-reliance and when this is insufficient, reliance on their peers. The use of coping strategies is also directly proportional to the individual's age of onset of hearing impairment and the degree of impairment.

Some of the more common communication and learning strategies used include:

- pre-reading of materials (when available);
- using electronic lecture notes (usually in the form of presentation slides);
- lip-reading to fill in the gaps of missed information;
- sitting towards the front of the class to enhance audibility and to aid lip-reading;
- intense concentration to focus on listening, and
- sitting next to their friends for ease of access when they missed important information, such as test dates being given verbally.

The interviews with the students revealed a very strong sense of independence, maturity, assuming full responsibility for their academic success; basically self-reliance at all costs. This sentiment was shared by most of the student participants:

*If there is a hurdle you must try to overcome it and you must work harder than everybody else*  
(P2:S2\_F.doc – 2:229, Merle),

*... you just have to learn to cope with whatever problems that are thrown at you ... it all comes down to you*  
(P3:S3\_M.doc – P3:199, Paul),

*I think it starts from the inside; you have to have a lot of courage and strong will to survive ... you have to stay strong and believe in yourself, that helped me a lot*  
(P5:S5\_M.doc – 5:128, Colin).

One of the reasons for this could be related to their 'hearing identity' and seeing themselves as 'normal' and therefore not wanting any assistance, but another reason could be that they are 'grateful' for being given a chance to study at a university, being well-aware of the low numbers of students with hearing impairment studying at university, and therefore not wanting to make any personal demands for fear of requital. Furthermore, they may be unaware of their rights as a student with a disability and the availability of learning support at the university; or they could have previously requested support which did not materialise.

### **6.2.5.2 Assessment strategies**

Students with hearing impairment experience a number of barriers because of assessment practices which are not inclusive. Primarily these barriers are related to language and communication. The most important communication barrier was not being able to hear the assessment instructions being given verbally, such as information regarding changes to the assessment questions or the amount of time left for writing. In an attempt to overcome this barrier, the students would position themselves for maximum audibility (hearing and lip-reading) as well as close proximity to the invigilator to facilitate personal interaction when necessary. A second significant barrier related to difficulties with complex language and sentence structures in the assessment questions. An important coping strategy, for those students who were bilingual, was

to read the questions in both English and Afrikaans to improve their understanding and interpretation of the questions. One of the student participants also made use of extra time for assessments as coping strategy. The rest of the students were not aware of the possibility of extra time or one even felt that it was unnecessary or even unfair to the rest of the students for her to 'get special treatment'. Astrid was quite vocal about this issue but was the only student participant who felt this way:

*I am aware that deaf people can make use of extra time which I actually find useless in a sense and unnecessary. I know a lot of disabled students actually do that and ask for extra time in the exam, but I don't really see why as we have the time to study, we can study just as well as anybody else and we can write slower than all the others and that is mainly what extra time is for ... students who have problems writing fast ... No, I would not make use of extra time because I would find it unfair towards the other students*  
(P4:S4\_F.doc – 4:144, Astrid).

It was clear during our discussion that she did not understand that the additional time is required because of the implications of hearing impairment on language. Some of the reasons that may account for the necessity for the use of individual coping strategies for assessments include:

- students with hearing impairment not 'being allowed' to write in a separate, quiet venue;
- no reasonable academic adjustments such as language modification; and
- invigilators not being sensitive to or trained regarding interacting with students with hearing (or other) impairments.

Furthermore it is likely that the invigilators would not be aware of the students with hearing impairment, either because the students do not self-disclose or self-advocate and/or the staff from the disability unit do not liaise with the examinations department who in turn do not inform invigilators.

### **6.2.5.3 Personal coping strategies**

In addition to communication, learning and assessment coping strategies, students with hearing impairment at the university also made use of a number of personal coping strategies to overcome many of the barriers that they experienced on a daily basis. Two of the most important strategies used were personal lecturer interaction and reliance for support and guidance from their peers (Jacklin, 2010). Paul expressed his reliance on his friends:

*Basically I got a lot of information from my friends because I didn't pick up everything ... they just made sure that I know when things have to be handed in or they would make me aware of tests we were writing etc.*  
(P5:S5\_M.doc – 5:12 & 22, Paul).

Regarding lecturer interaction, students preferred to consult after class on an individual basis with lecturers, potentially for two reasons. Firstly, they did not want to ask questions in class for fear of not hearing the response or for asking the 'wrong' question and feeling embarrassed, and secondly, to build a relationship with their lecturers, which helped them to negotiate

accommodations such as receiving notes in advance. The decision to consult personally with lecturers is also related to their 'hearing' identity, their attempts to remain 'invisible' in class and self-reliance. Furthermore, most of the participants made use of mentors in their first year of studies as well as academic tutors for tuition. Two of the participants paid for private tutors interacting on a one-to-one basis for ease of communication. The necessity for the abovementioned strategies relates directly to the low level of support for students with hearing impairment at the university.

A 2005 study by Jambor and Elliott assessing the effects on self-esteem of factors related to deafness, such as the coping styles that they use to cope with everyday life in a hearing world (Jambor & Elliott, 2005). Data were collected among students with hearing impairment at California State University and the findings revealed that the types of coping strategies used by the students were either proactive (such as being assertive) or reactive (such as denial of hearing impairment and pretence). The findings of this current study on students with hearing impairment concurs with the participants having a choice between the two approaches to coping, with most of them opting for the latter, such as

- covering or bluffing for that which they miss due to their hearing impairment; and
- students with hearing impairment have valuable insights and experiences which have assisted them to develop strategies that they find effective in the hearing world and which could promote self-determination (Biklen, 2000:352).

The findings also agree with the results of research studies indicating that positive and active coping strategies are related to better academic adjustment and reflect higher coping effectiveness (Causey & Dubow, 1993; Reid, Dubow & Carey, 1995).

The findings from the interviews with the lecturers and the support staff member from the disability unit concur with the facts that students with hearing impairment are primarily self-reliant with a tendency to request additional support and guidance from their friends when required. This supports the research conducted by (Jacklin, 2010:104) who argues that non-declaring students often strategically and increasingly enlist the support and help of those she identified as 'significant others'. The three most common coping strategies used, as confirmed by these participants, were the choice to sit where audibility was maximised, the use of lip-reading and peer-reliance.

#### **6.2.5.4 Summary**

In summary, a high level of communication, learning, assessment and personal coping strategies are required by students with hearing impairment as their communication and accessibility needs are not being adequately met, either by the support (or lack thereof) offered by the disability unit or by the university as a whole.

Due to the inaccessible educational environment, students with hearing impairment are compelled to employ various coping strategies. There is a high reliance on themselves and their peers. Self- and peer-reliance reside within the microsystem, and their interactions form part of the mesosystem. The avoidance of disclosure, the non-use of support provisioning and thus the need for the use of coping strategies could also be related to 'person characteristics', which are biologically based and which influence proximal processes and their developmental outcomes. One such person characteristic is 'disposition' – a force which can mobilise proximal processes or the opposite, limit or even prevent their occurrence. Some of the student participants were introverted or 'too shy' to use assistive devices or ask questions during class. This could be seen as having a disposition which negatively affects developmental outcomes.

### **6.2.6 Theme 6: Critical success factors**

This sixth, and final, theme brings together the various components that are essential for supporting the learning and communication needs of students with hearing impairment in higher education, referred to as 'critical success factors'.

#### **6.2.6.1 Teaching recommendations: curriculum flexibility**

A number of critical success factors were advocated for by the participants to assist them in achieving their maximum academic potential. The most pertinent of these were in the scope of curriculum flexibility as well as improved communication accessibility and interaction with lecturers. Curriculum is a broad term encompassing all aspects of teaching and learning.

Students made the following recommendations:

- provision of good quality audio equipment in large teaching venues which should be well maintained and its use mandatory for all teaching staff;
- lecturers should repeat questions asked and answered in class by other students;
- lecturers should receive special training regarding the accommodation of students with hearing impairment in their classes;
- lecturers should make available glossaries to assist with understanding new and complex terminology;
- lecturers should provide electronic copies of detailed notes well in advance to allow for pre-reading of materials; and
- audio-visual materials should be subtitled.

#### **6.2.6.2 Teaching recommendations: disability awareness and interaction with lecturers**

As established by Chataika (2009), attitudes and disability awareness could either be catalysts or obstacles to inclusion. In terms of awareness of their disability, some of the participants suggested that the staff from the disability unit should inform students' lecturers about their hearing

impairment and which types of accommodations should be made for them. This recommendation is contentious as on the one hand the students should self-advocate, but on the other hand the involvement of the disability unit is also necessary. I believe that the role of both is critical. Prior to classes starting each semester, the disability unit should inform (with the permission of the student to disclose information regarding their hearing impairment) all of the lecturers of each student about the student's attendance in their class as well as the types of reasonable academic adjustments and other accommodations that should be made to support the student's communication and accessibility needs. In addition, lecturers should meet to discuss the needs of each individual student and remain in regular contact throughout the academic year to monitor progress. Support provisioning should be tailored for each individual student and his or her specific needs (Norton, 1997). On the other hand, the student also has a responsibility to inform each lecturer personally and to explain his or her specific needs. Often this does not take place as the students prefer to remain 'invisible', maintaining their non-disabled or 'normal' identity. As barriers arise, the student, through developing an ongoing relationship with each lecturer, should feel comfortable to discuss the situation with the lecturer and together they should find a suitable solution.

Additionally, the student participants recommended that interactions with lecturers should be one-on-one with the primary mode of 'out-of-class' general communication being via email, while two mentioned that the lecturers should take a personal interest in their 'academic well-being'. A reason for this need being expressed could be related to their experiences at primary and secondary school where teachers, due to the small classes, were able to show a more caring and motivating attitude, making them feel as though 'someone believes in them'. Although this may not always be possible in the higher education environment, some form of academic monitoring should take place, either by the disability unit staff or by the individual lecturers themselves. This approach could be an 'early warning system' regarding poor academic achievement which may be the result of communication or other barriers.

### **6.2.6.3 Teaching recommendations: physical environment**

Two main recommendations were made in relation to the physical environment. Firstly, there was the need for smaller classes and secondly, preferential seating should be made available at the front of large teaching venues and the appropriate use thereof 'enforced'. Due to the 'massification' of higher education in South Africa, the first suggestion by the students does not seem feasible. Through improving audio accessibility for students with hearing impairment by means of the provision of audio induction loop or FM systems, as well as electronic note-taking, the need for both of these recommendations would be greatly diminished. Cognisance, however, should be taken of a recommendation for group work, namely few members, especially during practical work.

#### 6.2.6.4 General educational recommendations

In addition to the above, the student participants also made a number of general recommendations, such as

- the disability unit should provide more support for students with hearing impairment specifically, instead of focusing on visual and physical impairments;
- barriers experienced during orientation and induction programmes should be reduced (if not eliminated) through raising the awareness of speakers that members of the audience may have impairments, and speakers should make use of microphones, audio induction loop systems (where available) and electronic slideshows and handouts;
- academic tutors should be provided on a one-to-one basis; and
- emergency alerting (flashing and vibration) devices, such as fire/smoke detectors should be installed at residences where students with hearing impairments are residing.

#### 6.2.6.5 Advice for first-year students with hearing impairment

The following recommendations were suggested by current students with hearing impairment at the university for incoming first-year students with hearing impairment:

- be fully bilingual in both Afrikaans and English;
- work hard;
- have a positive attitude;
- read through work in advance and be prepared for class;
- keep up with the academic work on a daily basis;
- attend support groups;
- ask lecturers for assistance and interact in class; and
- “find out” if you do not understand the work (from lecturers or peers).

It is interesting to note, firstly, that all of these recommendations focus on the individual, namely being ‘self-reliant’, as shared by Merle:

*You must want to succeed and you must not give up and if there are struggles you must really work hard to overcome it ... you have to believe in yourself ...*  
(P2:S2\_M.doc – 229),

and, secondly, that some of what the participants were advocating they themselves did not practice, such as interacting in class and attending support groups. Only one of the participants attended a support group for students with disabilities at the university and found it helpful. Furthermore, two of the participants recommended that students should disclose their hearing impairment to their lecturers, but few of them actually did this in practice. It seemed as if they

knew what they had to do, but many were not able or willing to do so – again highlighting the lack of self-advocacy skills or it could simply have been their choice.

In this section, the recommendations made by the staff member from the disability unit and the lecturers are discussed. From the perspective of support, it was suggested

- that students disclose their hearing impairment up front to each lecturer, including guest lecturers;
- that students make use of the services of academic tutors; and
- that students should endeavour to build a relationship with their lecturers as success leads to more success.

From the perspective of the lecturers, their recommendations included

- a request for staff development courses on how best to accommodate students with hearing impairment;
- that students should self-advocate for their needs;
- that additional financial resources be made available to fund support initiatives; and
- that there is an urgent need for a change in the way 'disability' is framed at the university.

This participant argued strongly that the individual rights of students with disabilities should be respected and that their unique and individual needs should be supported within a social model of disability framework. I concur completely with this view.

In conclusion, the findings of this study are very much aligned to the literature reviewed in an in-service training package for new teaching staff developed by the Rochester Institute of Technology (ACCESS, 1999:9), which found that –

- students with hearing impairment in higher education mainly come from mainstream settings;
- students view hearing impairment as a stigma and tend to hide their hearing impairment, to appear to be coping ('doing just fine');
- students are usually not aware of any reasonable accommodations available to them; and
- these students make use of spoken language, often have good speech intelligibility and are therefore seen as being able to hear, which results in lecturers (and others) misunderstanding the impact of their hearing impairment.



### 6.3 CHAPTER SUMMARY

This chapter provided an integrated interpretation of the findings of the study. A summary of the dominant themes and categories that emerged were presented whilst drawing together the various analytical links to show the relationships between such. Additionally attempts were made to explain the emergence of these themes.

The first theme related to identity, with the student participants with a hearing impairment assuming a hearing rather than a Deaf identity cultural paradigm. Linked to this is the fact that the participants were generally not willing to disclose their hearing impairment unless for administrative purposes or to elicit support. It was also found that individual personal characteristics are related to educational outcomes. Theme two, dealing with 'inclusive practices', depicted a situation where teaching practices at the university are generally not inclusive and curricula are largely inflexible. Furthermore, limited reasonable academic adjustments were made for students with hearing impairment at the university. The third theme emerging from the data was linked to 'university support', which was found to be mostly inadequate, including both human and technical support, with students with hearing impairment being unaware of the availability of support as well as any institutional policies related to their rights. The topic of 'educational barriers' was discussed as theme four. Students with hearing impairment face a significant number of barriers related to communication, learning and assessment in higher education. The second last theme of 'coping strategies' explicated how students with hearing impairment are compelled to discover their own unique ways of coping at a 'hearing' university in the absence of adequate support. Finally, within theme six, the participants provided a number of critical success factors, which could assist them to achieve their full potential in higher education.

Throughout the discussion of the themes, and attempting to explain the rationale for the occurrence of each theme, use was also made of Bronfenbrenner's bio-ecological model to help to explain the interactions between an individual's development and the systems within the social context. The following and final chapter derives conclusions, makes recommendations and suggests areas for future research.

## **CHAPTER 7 CONCLUSIONS AND RECOMMENDATIONS**

### **7.1 INTRODUCTION**

The purpose of this final chapter is to derive logical conclusions and provide appropriate recommendations. This chapter begins by revisiting the assumptions stated in Chapter 1, then provides a summary of the interpretation of the findings, depicts and explains the relationship between hearing identity, educational experiences and outcomes, and concludes by signposting areas that require further research.

### **7.2 REVISITING ASSUMPTIONS FROM CHAPTER 1**

It is useful to revisit the six assumptions underlying this study that were stated in Chapter 1 (refer to section 1.14). These assumptions were presented at the inception of this study (2009) and were based on my background of professional and personal experiences. The six basic assumptions identified at the outset are discussed next in light of the analysis of this study's findings.

The first assumption underlying the research was that students with hearing impairment, lecturers and the support staff member would respond positively to the invitation to participate in the study and that all three categories of participants would participate by fully engaging during the semi-structured interviews. This assumption turned out to be partially true as seven out of a possible thirteen students and seven lecturers out of a possible twelve agreed to participate in the study. This assumption was informed by my preconceived idea that all of the potential participants would view the study as important, that they would want to share their experiences and that they would view it as an opportunity to help to effect real change.

The second assumption posited was that students with hearing impairment would identify as being disabled. This assumption was based on the premise that these students would actively seek out support at the university due to the barriers that they face, and in order to solicit this support, they would have to disclose their hearing impairment to the staff at the disability unit, their lecturers and their peers. This assumption did not hold true as all of the participants identified as hearing (or in their terms 'normal') rather than having an identity as a person with a disability. This had major implications in terms of their unwillingness to disclose their hearing impairment and their refusal to actively seek out support. Even though this resulted in them having to face additional barriers and be more self-reliant, this was the reality that they chose.

The third assumption was that little or no curriculum transformation to accommodate the needs of students with hearing impairment had taken place at the university. This assumption held true. At the time of writing, there was no evidence of reasonable academic adjustment or the incorporation

of the principles of universal learning design (ULD) at the university, and thus the teaching environment and curriculum remained largely inaccessible to students with hearing impairment.

The fourth assumption was that the case study university provides little academic support to students with hearing impairment. This assumption held true as the focus of support was still on students with visual and physical impairments. There was a lack of knowledge within the disability unit regarding support provisioning for hearing impairment, including assistive listening devices and lecturers also did not provide any reasonable academic adjustments to make their courses more accessible.

The fifth assumption asserted that, as a result of students with hearing impairment being faced with many educational barriers, they would devise their own strategies to try and attempt to overcome the barriers. This assumption held true and the student participants shared a number of personal coping strategies used within the teaching environment.

The final assumption was that, from a theoretical perspective, I would use the social model of disability as my framework. This assumption did not hold true as through reading and reflection, I discovered that the framework for the ecological systems theory based on Bronfenbrenner's past and more recent works (Bronfenbrenner, 1979; 1992; 2005; Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Evans, 2000; Bronfenbrenner & Morris, 1998), namely the bio-ecological model, aligned with my personal views regarding the interaction of systemic layers with the individual being at the centre of these interactions, and provided a logical way to make sense of the experiences of students with hearing impairment in higher education when interpreting the data. This theory of human development also allows for improved understanding of education and the problems attached to it.

### **7.3 SUMMARY OF INTERPRETATION OF FINDINGS AND CONCLUSIONS**

Chapters 5 and 6 helped to portray the educational experiences of a sample of students with hearing impairment at a 'hearing' or mainstream university in the Western Cape. In summary, the discussion served to illustrate the multifaceted and complex nature of their experiences. The discussion revealed how the participating students perceived their self-identity which had an effect on their decision to disclose their hearing impairment to their peers, lecturers and the disability unit. The relevant chapters also considered the availability and use of academic support provisioning, including reasonable academic adjustments. An explanation was offered as to why students do not make use of available support, and thus the types of communication and other barriers that they face, and the various coping strategies employed to overcome these barriers were revealed.

The main aim of transforming the findings was to produce a nuanced and multi-tiered, yet holistic and integrated synthesis. Throughout the ongoing and interweaved data generation and

transformation processes, one of the main challenges was to make sense of the large volumes of data by reducing the amount of information, identifying significant patterns and constructing a framework for communicating the essence of what the data revealed, given the purpose of the study. In addition to this, I performed a thorough within- and across-case unit analysis and did not find any significant relationships between any of the demographic factors (age, gender, ethnicity, study field) except for the fact that both degree of hearing impairment and age of onset of hearing impairment, i.e. pre-lingually or post-lingually, play an important role in relation to disclosure, support, barriers and the need for coping strategies. It seems that students with a milder form of hearing impairment and/or where the age of onset was post-lingually, are more confident and comfortable with their communication abilities and thus the needs for coping strategies are reduced.

Some significant conclusions were drawn in this study. The first conclusion that was reached was that, as a result of the students having a 'hearing' identity, and thus viewing themselves as non-disabled, they generally do not disclose their hearing impairment to important role players in their educational environment. As a consequence of this non-disclosure, the students remain unaccounted for and often unsupported, experiencing a large number of barriers and having to derive individualised coping strategies. It can also be concluded that positive personal characteristics, such as self-determination, are conducive to successful educational outcomes but that the converse is also true. The second conclusion relates to curriculum accessibility. At the time of writing, existing curricula and teaching practices at the university remained mostly inaccessible to students with hearing impairment. Without incorporating the principles of ULD into curriculum design, teaching methods and materials development and making reasonable academic adjustments to accommodate the language and communication needs of students with hearing impairment, the teaching and learning environment remained and will remain inaccessible.

A third conclusion was that the learning and communication needs of the participating students with hearing impairment were not sufficiently supported, not through the provision of human nor through technical means. This led to the next conclusion, namely that the students faced many barriers related to attitudes, pedagogy, curriculum, communication, etcetera. – all of which had a negative influence on their educational experience and potential academic outcomes. As a result of these barriers, the fifth conclusion was that the students needed to make use of many personal coping strategies to facilitate communication, learning and during assessments. Had the students with hearing impairment been sufficiently supported, these coping strategies would not have been necessary.

A final conclusion was that a large number of recommendations were made by the students, lecturers and the staff member from the disability unit to improve the current situation. These

recommendations are related to teaching, curriculum flexibility, disability awareness, interaction with lecturers and the physical environment.

#### **7.4 THE RELATIONSHIP BETWEEN HEARING IDENTITY AND EDUCATIONAL EXPERIENCES AND OUTCOMES**

Subsequently to the interpretation of the findings and conclusions, I wanted to look more closely at the links between the categories and the themes in an attempt to understand the complexities of these relationships. Because I had used grounded theory methods to analyse the data and the constant-comparison technique to reveal similarities and differences between the data segments, I went back to ATLAS.ti to investigate these interrelationships. Keeping the interpretation of the data as a focal point in my mind, I made use of a network view to depict the links between the most prominent codes, related quotes, comments and memos graphically (see Figure 7.1). After some more critical thinking and reflections I made a few more refinements and then drew a flow diagram to depict the relationship between students with hearing impairment having a 'hearing identity' and potential educational outcomes (see Figure 7.2). An explanation of the rationale for the relationships, as depicted in Figures 7.1 and 7.2 follows.

All of the participants in this study came from hearing families which made use of the aural/oral method of communication. Both the mother and brother of one participating student had hearing impairment but communication at home was oral. In addition to the hearing family environment, all of the participants attended mainstream high schools where they were the only learner with a hearing impairment and not supported in any specific way. They used typical communication strategies for a small classroom environment, such as sitting towards the front of the class, lip-reading and concentration. A few of the students also received speech and language therapy during their earlier years. Factors such as choice of communication, family environment, school environment and a focus on the person rather than his or her impairment, led the participants to assuming a hearing identity rather than a Deaf identity cultural paradigm. In this way, they believed that 'others' would see them as 'normal' and not disabled. They also did not self-identify as being disabled.

Part of their identity, in addition to identifying as being 'hearing', was informed by their personal characteristics which could add to or detract from their eventual educational attainment. The participants in this study did not self-advocate in order to negotiate for their communication accessibility needs, and their use of visible assistive technologies such as FM systems was low. Both of these factors were directly related to their hearing self-identity and the level of importance they attached to being 'invisible' as opposed to 'extravisible' and drawing attention to themselves. The need to 'blend in' seemed to be high. In addition, this 'hearing' identity affected their willingness to disclose their hearing impairment, as it would result in them becoming 'visible'.

All of the participants in this study disclosed their hearing impairment as part of the university application process, but did not actively seek out any support, unless a 'critical event' necessitated it. Part of the reason for non-disclosure could be linked to the fact that they did not need to self-disclose at school, as it was done by their parents (on their behalf) and, secondly, due to additional support at school either being unnecessary or even unavailable. When they transitioned to university, there was therefore no expectation of being supported. The students attempted to use the same strategies they used at school in the tertiary environment, which generally was not successful. It seems feasible to assume that, if students disclosed their hearing impairment, this would lead to increased support requests (demand) and therefore increased provisioning (supply) which could lead to changes in institutional culture.

However, on the other hand, when students with hearing impairment choose not to disclose, their access to support is limited; therefore, the availability of support and the uptake of such remain low. In addition, their 'voices' will remain silenced as they will not be in a position to provide input into disability-related policies and procedures and thus awareness of students with hearing impairment will remain low which furthermore will result in limited impact on changing institutional culture. Three main direct consequences of the aforementioned are

- curricula remaining inflexible with little or no curriculum transformation taking place
- students with hearing impairment having to face a large number of barriers both inside and outside the teaching environment; and
- the inaccessible and non-inclusive university environment remaining (upholding of the status quo).

Due to these barriers to communication and learning that are experienced daily, students with hearing impairment have to devise their own individual coping strategies to hopefully 'survive' in higher education. If these barriers become insurmountable or if the coping strategies are insufficient or ineffective, this leads to poor academic outcomes with a high attrition rate, impacting on their future economic well-being. Moreover, the current situation will simply continue to be perpetuated – having no 'voice' or input into effecting change for future first-year students with hearing impairment. In conclusion, therefore, it is firstly of vital importance that students with hearing impairment are confident and comfortable in disclosing, and secondly that they learn how to self-advocate, as these two factors seem to be key connections to successful educational outcomes.

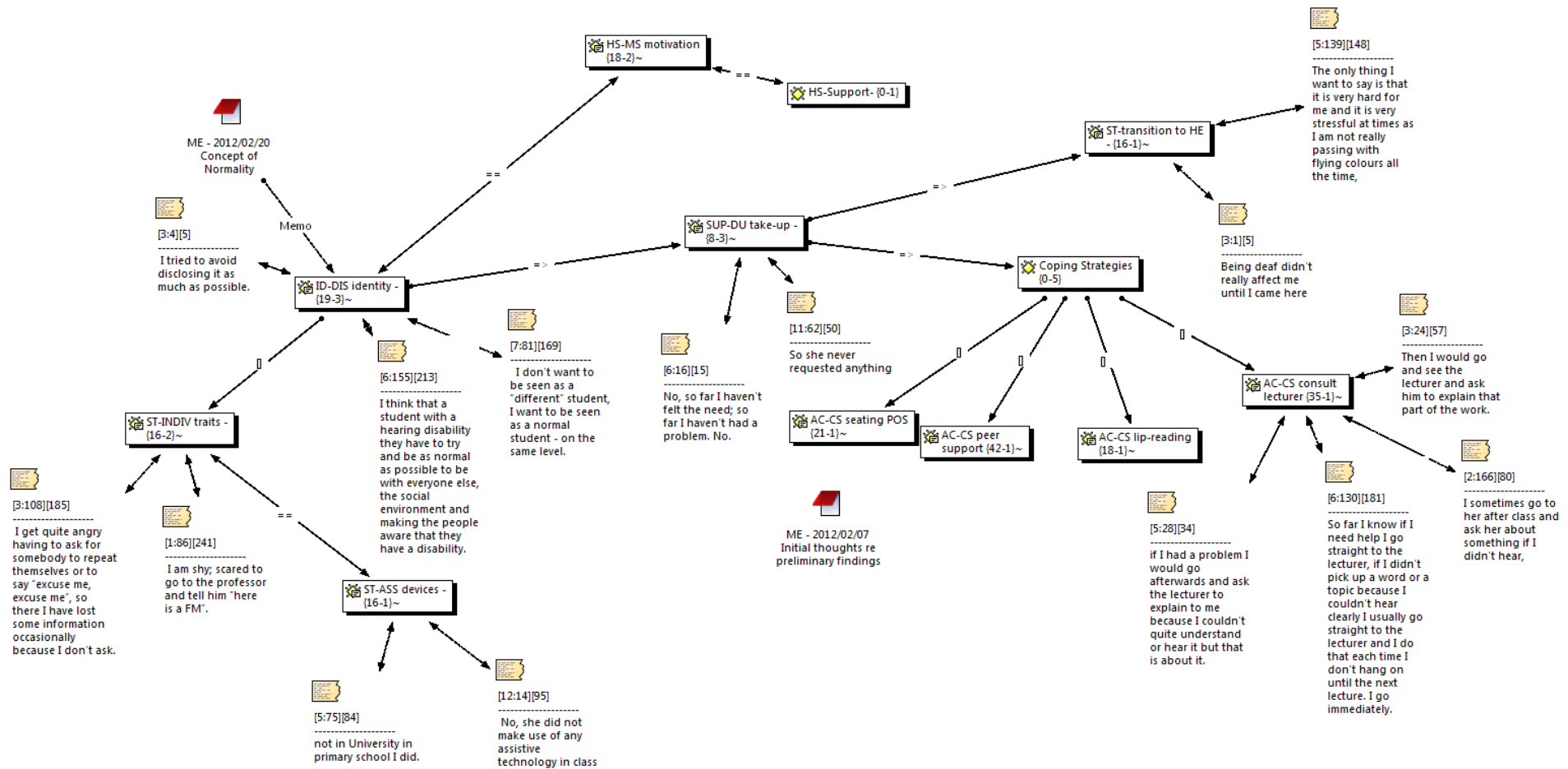


Figure 7.1: Network view of the connections between the major codes, related quotes, comments and memos

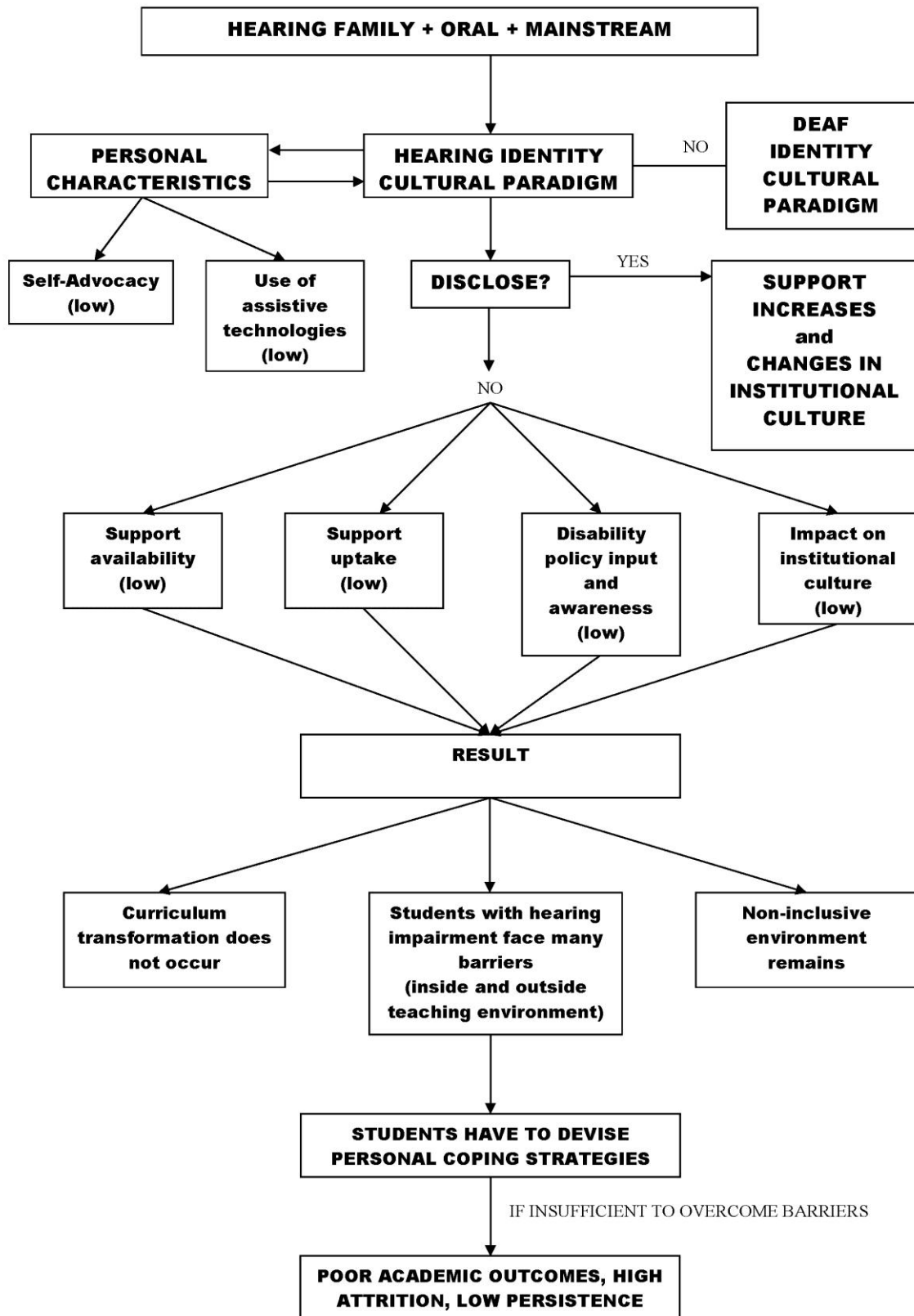


Figure 7.2: Flow diagram depicting the relationship between 'hearing identity' for students with hearing impairment and academic outcomes



## 7.5 RECOMMENDATIONS

The following recommendations are provided based on findings emerging from the analytic categories which have been further subdivided into stakeholder groups for ease of readability and usability. These micro-recommendations are provided in order to address the needs in the context of this study. The number of recommendations is also indicative of the change which needs to take place. The specific recommendations per theme have also been included as Appendix K.

### 7.5.1 Recommendations per stakeholder group

In this section recommendations are made in relation to support staff working in disability units, lecturers, current and prospective students with hearing impairment and university management. It is set out in this way to facilitate the implementation thereof.

#### 7.5.1.1 Recommendations for support staff working in disability units

To be able to fully support the accessibility and communication needs of students with hearing impairment, and to encourage and assist their self-advocacy efforts, staff working in disability units should:

- Ensure that they are fully informed regarding all aspects of supporting the communication and accessibility needs of students with hearing impairment, including up-to-date knowledge of the latest available assistive technologies.
- Ensure that students with hearing impairment have as much knowledge as possible (concerning their rights as students with disabilities and the availability of support) to assist them to make good decisions about their communication and other support needs.
- Communicate to students with hearing impairment the benefits of and reasons for disclosure.
- Monitor the academic progress of the students every semester and meet with them regularly to discuss any difficulties that they may be experiencing.
- Students with hearing impairment should be supported in managing their physical environments and interactions with lecturers regarding their individual needs.
- A formal mentorship programme should be created, which would allow for interactions with other students with hearing impairment, and this could also be used as a platform to develop and practice skills, such as self-advocacy.
- Play a leadership role in facility planning at the university, such as engaging with campus architects and audio-visual technicians, and putting themselves in a position to be able to advocate for high-quality acoustic teaching environments.
- Explore their role in educating and increasing the awareness of individuals who are in contact with students with hearing impairment such as assessment invigilators and lecturers. Workshops and seminars could be developed and offered to individuals interested in furthering their own understanding of interacting with students with hearing impairment.

- In addition to playing a role in increasing the knowledge and awareness of those who are unfamiliar with disabilities, it is also important for staff from disability units to remain sensitive to accessibility issues. A study by Peterson and Quarstein (2001) found that highly trained and experienced support staff members from disability units who attended additional disability sensitivity and awareness training demonstrated higher awareness, a positive regard, and a new vision for supporting students with disabilities.
- Staff from the disability unit should also focus on learning to communicate and collaborate effectively with students with hearing impairment. Most of the participating students were not aware of any support being offered and the role of the disability unit was unclear. In addition, two of the students expressed feelings of unmet expectations and even negative experiences when dealing with staff from the unit.
- There should be clear institutional guidelines concerning disclosure and confidentiality.

#### **7.5.1.2 Recommendations for lecturers**

To be able to support the communication and learning needs of students with hearing impairment, lecturers should:

- Acquire knowledge of the principles of universal learning design (ULD) and incorporate such into their curriculum design and chosen materials and delivery methods. This is the most important recommendation for teaching faculty. By making curricula more accessible for students with hearing impairment, such as making lecture notes available electronically and in advance, using videos with subtitles, offering course materials in alternative formats, providing glossaries and facing students when speaking are all common strategies that would not only assist students with hearing impairment, but which have the potential to benefit all students.
- Be willing to attend staff development workshops to increase their knowledge regarding supporting students with hearing impairment.
- Be open to communicating with the students with hearing impairment regarding their support needs and generally show an interest in these students' academic progress and general well-being.
- Make a conscious decision to embrace the principles of inclusion and have a positive attitude and demeanour towards students with hearing (and other) impairments.
- As suggested by Chataika *et al.* (2012), a compulsory module on disability diversity should be implemented for every university student in order to produce future leaders and policy makers who are disability sensitive. Decisions would have to be made concerning where this module should be incorporated i.e. into which subject/s, the length of the module and whether it is examinable or not.

### 7.5.1.3 Recommendations for current and prospective students with hearing impairment

The research findings yielded several areas to make recommendations related to students with hearing impairment. Most important, because learning to self-advocate is critical to succeeding in higher education, I recommend that students with hearing impairment should:

- Learn more about their hearing impairment and the implications for learning.
- Recognise their own learning styles and communication preferences as a first step to negotiating for appropriate accommodations and resources.
- Develop social skills, establish an identity and acquire independence and interdependence (Stinson & Walter, 1997).
- Actively seek information about policies and legislation related to human rights, persons with disabilities and inclusive education, both at university and national levels, in order to be in a strong position to request (or even demand accommodations). This information should be made readily available by the university and the disability unit.
- Develop and make use of skills to self-advocate by informing significant role players in their university education of their hearing impairment and be able to negotiate for necessary accommodations.
- Build effective relationships with lecturers, peers and staff from the disability unit to be able to interact appropriately and confidently and negotiate communication access.

### 7.5.1.4 Recommendations for university management

Furthermore, the research findings revealed important recommendations related to university management, namely:

- All university policies, guidelines and procedures related to students with disabilities should be modified to reflect the social model of disability rather than the medical or deficit model.
- Financial and human resources should be made available to support the access needs of students with hearing (and other) impairments.
- A drive for real transformation at the university needs to be driven by top management, and faculties and lecturers should be held accountable for non-compliance, particularly in the teaching and learning environment where the greatest barriers are experienced. There is a need for strong institutional commitment to inclusivity (Chelin, 1999), with inclusion being treated as a transformative process instead of as an add-on (Porter *et al.*, 1999).
- The principles of universal learning design should be adopted and incorporated into the development of new and existing curricula, teaching methodologies and support materials, and driven as a university-wide approach.
- The university should recognise the impact of hearing impairment in the wider context of university life, and provide staff development opportunities for all staff (teaching and administrative).

- Management should ensure that academic staff development is mandatory and should highlight the benefits of inclusive learning approaches, the diversity and complexity of related issues. Academic staff should be encouraged to examine their current teaching practices in terms of inclusivity and be informed and knowledgeable concerning modifying these.
- There needs to be a commitment to develop support services and knowledge of specialist equipment for hearing impairment and awareness about the effect of using technology in teaching, including the efficacy of the loop systems in various academic environments (Piggott *et al.*, 2006).

### **7.5.2 Recommendations for further research**

The education of students with hearing impairment, using the oral approach for communication at mainstream schools, colleges and universities in South Africa is a very under-researched area. In addition to the recommendations for disability support staff, academic staff, students with hearing impairment and university management, the following recommendations are provided for further research:

- As explicated in the literature review, there is a need for accurate prevalence statistics regarding students with hearing impairment in higher education, as well as completion rates, to be able to understand the current South African situation. This data could be used as a benchmark to determine the potential growth as universities become more adept and knowledgeable concerning meeting the communication and accessibility needs of students with hearing impairment.
- The processes of transition both into higher education and the world of work are often highly problematic for students with hearing impairment. It is recommended that further research be conducted in these areas to understand the challenges faced and to provide ways in which to facilitate successful transitions.
- With specific reference to disclosure and self-advocacy, it is important to further identify the skills, strategies and awareness necessary for success in this area.
- Research is also needed regarding the specific types of support that students with hearing impairment are receiving at universities throughout South Africa, as well as their experiences, both negative and positive, in relation to these. Such research should also include the availability of technologies for communication accessibility.
- Studies related to adaptations to the curriculum, teaching materials and teaching practices to facilitate learning of students with hearing impairment, using the aural/oral approach should be undertaken. The recommendations of such studies could lead to the transformation of curricula and more inclusive practices.

- The issue of multilingualism within higher education is an important debate, especially its impact, in practice, on the teaching and learning experiences of students with hearing impairment. Research with this focus could make a valuable contribution in the field.
- Social interactions and peer-reliance in the teaching environment between hearing students and those students with hearing impairment should be facilitated. The current study has revealed a significant reliance on peers for academic and social support.
- Regarding building relationship', I recommend that further research be conducted on this process to address the strategies that students with hearing impairment use to build effective relationships with peers, friends, lecturers and support staff from the disability unit.
- Research regarding the institution and degree (programme) of choice for students with hearing impairment should be undertaken to offer additional insights into the factors that influence the academic decisions of these students. It would also be helpful to compare and contrast the factors involved in decision-making of students with hearing impairment with those of their hearing peers. This could lead to insights into the demographics of students with hearing impairment on campus and the reasons why certain universities are more popular than others for students with hearing impairment. Additionally, after their graduation, research studies should investigate the choice of employment or current employment status of students with hearing impairment?
- The experiences of support staff from the disability unit as well as teaching faculty in relation to the prevalence of students with hearing impairment in the classroom, and their interactions (between disability support staff/teaching faculty and students with hearing impairment) should be explored.
- In terms of research methodology, students with disabilities should be empowered to conduct their own research and to participate more actively in the research process. This would allow them to be active researchers or participants rather than 'research subjects'.

## **7.6 LEARNING SUPPORT FRAMEWORK**

One of the main aims of this research was to develop an academic learning support framework for university students with hearing impairment. This also forms part of my contribution to the body of knowledge in this field. Using my personal experience of supporting learners with hearing impairment, the findings and recommendations from this study, the review of the literature regarding best practice for supporting students with hearing impairment in higher education, Bronfenbrenner's systems theory, as well as the developed 'Guidelines for teaching students with hearing impairment in higher education' (see Appendix L), I conceptualised the learning support framework depicted in Figure 7.3. Additionally, inputs were requested and received from four heads of disability units during a recent HEDSA symposium (2012), which were incorporated into the final version of both the learning support framework and the guidelines.

The **student with hearing impairment** is the focal 'object' and is therefore placed in the central position. This is also in line with Bronfenbrenner's bio-ecological model with the individual (student) at the centre of the various microsystems. At the top of the framework, one should note the potential factors that impact on the language, communication and learning outcomes of students with hearing impairment, such as **type** and **degree of hearing impairment**, as well as **age of onset**. Hearing loss may be conductive, sensori-neural or mixed. Degrees of hearing loss range from mild to profound, and the age of onset of hearing loss may be either before the acquisition of language (pre-lingually) or after acquiring language (post-lingually). The **communication choice** of these students, namely the aural/oral method, is also important as it may affect their self-identity. Students with hearing impairment, using the oral/aural approach to communication, may make use of a hearing aid and/or cochlear implant/s, and often augment their communication through the use of lip-reading, the interpretation of gestures as well as facial expressions. Individuals who elect not to make use of the oral/aural approach may choose to become part of the Deaf community and make use of Sign Language, usually **South African Sign Language (SASL)**.

Surrounding the student with hearing impairment (in the centre, depicted in green) are six significant areas (indicated in black text on a white background) of interaction at university in which the communication needs of the students should be considered, with the necessary accommodations being implemented: **teaching and learning**, **practical's**, **assessment**, **university residence accommodation**, **field trips** and **external placement**. These areas of interaction (or proximal processes) were also conceptualised from Bronfenbrenner's bio-ecological model, namely the interactions between each of these systems and the individual, as well as between each of the system'. The interactions between the various microsystems collectively form part of the mesosystem. Additionally, there is the important issue of **disclosure**. Students should be willing to disclose their hearing impairment on the university application form, to staff at the disability unit, to lecturers as well as to their peers. This is a critical part of students' self-advocating for their communication and accommodation needs.

Important components of **teaching and learning** that need to be considered are the use of inclusive pedagogy and incorporating the principles of universal learning design (ULD). Students with hearing impairment are entitled to be accommodated academically in a reasonable way through the use of reasonable academic adjustments such as writing assessments in a separate venue, language modification, the use of extra writing time and the provision of glossaries by lecturers. **Assessments** form an important part of teaching and learning, usually either taking the form of written or oral assessments. It is important that **invigilators** are informed and sensitised regarding the communication needs of students with hearing impairment, such as writing instructions on the board instead of simply verbalising these instructions. The use of

**communication technologies** is often required by students with hearing impairment, especially those students with more profound hearing losses, for use during lectures, field trips, external placement, etc. The types of communication technologies that could be provided include electronic note-taking systems, personal FM systems, induction loop systems and the use of subtitles on all audio-visual materials. In relation to **electronic note-taking**, it is important that note-takers are well-trained (and that the training is quality assured), they should be remunerated, be held accountable for the provision of high-quality notes and they should subscribe to a code of practice for note-takers.

Prior to the **external placement** of students with hearing impairment into industry (e.g. work placement), their transition needs to be carefully planned, including issues such as sensitisation and awareness training of the employees at the placement company and also the use of communication technologies such as FM systems to facilitate communication.

In the case of students who elect to stay in **university residences**, attention needs to be paid to supporting their communication needs through the provision of emergency alerting devices (such as fire/smoke detectors which make use of flashing lights and vibrations to alert persons with hearing impairment) as well as assistive living devices (such as vibrating alarm clocks), the provision of induction loop systems in meeting rooms and recreational areas (such as lounges with television sets) and general awareness regarding hearing loss by residence wardens and committees. With respect to teaching and learning, assessment, practicals, field trips and external placement, readers are furthermore referred to Appendix L: Guidelines for teaching students with hearing impairment (using the oral/aural method of communication) at university. Additionally, with reference to students with hearing impairment (also indicated in green), it is important that these students be aware of their rights as persons with a disability, that they are given the opportunity to provide input into university policies as important stakeholders, and that they share their knowledge and experience (of being a student with a hearing impairment in a 'hearing' university) by mentoring new incoming students to the university.

Encompassing the micro- and meso-systems is the macrosystem. It is here where the **culture and commitment of the university** are paramount to successfully driving inclusion and access for students (and staff) with disabilities. The provision of **funding by government** and the **role of executive management** (indicated in red) at the university is critical to ensuring transformative discourse, and practice are used to drive access and inclusion.

On the outskirts of these six areas (indicated in black and white), the role of the **disability unit** is indicated, supporting both the student, the academics as well as liaising with the centre for academic development and companies (or other external role players) with regard to work placement or employment. A key role of the disability unit is to work together with lecturers in

supporting the learning and communication needs of students with hearing impairment. It is critical that lecturers are knowledgeable concerning how to support students with hearing impairment and that they have a heightened awareness and a positive attitude towards supporting these students. **Academic development staff** are also encouraged to collaborate with personnel from the disability unit when developing curricula for staff development programmes/workshops related to the topic of disabilities. The role of the disability unit in terms of ensuring that **registration and orientation** are fully accessible is also indicated in the framework, as well as their interactions with full-service schools, playing an advisory role.

Other areas of importance are also shown, such as the **supportive role that faculties need to play** and the importance of an **accessible physical environment**. Faculties are encouraged to be strategic in their thinking concerning accessibility, a plan to make the necessary human and financial resources available and to enforce accountability by both academic and administrative staff. Regarding a sensory accessible environment, students with hearing impairment require teaching (and other) venues with good acoustics, proper lighting (to avoid dark spots or shadowing) and the correct positioning of equipment to allow for lip-reading etc. Additionally, students with hearing impairment require a conducive social environment, peer support, counselling, psychosocial support, tutoring, mentoring and the option to participate in hearing-accessible sports.

The aim of this learning support framework is the provision of a **holistic approach** to meeting the learning and communication accessibility needs of students with hearing impairment, within the university environment and beyond (such as the workplace). It is hoped that this framework would assist staff from the disability unit, lecturers, university management and other role players to improve the academic support for students with hearing impairment, hopefully leading to fewer barriers being experienced, a reduced need for personal (and other) coping strategies, as well as improved overall educational outcomes.

It is important to note that this framework does not wish to promote a reliance on the services of the disability unit as support, but – within the current reality in South Africa where the norm is for a university to have a disability unit – to show ways in which the disability unit could function optimally to improve the situation for students with hearing impairment. The end goal for a truly inclusive educational environment (in this case, universities) is where staff and students with disabilities feel wholly accepted, valued and included in the real sense of the word – where universal access and universal learning design constitute the norm.



# LEARNING SUPPORT FRAMEWORK FOR STUDENTS WITH HEARING IMPAIRMENT AT UNIVERSITY

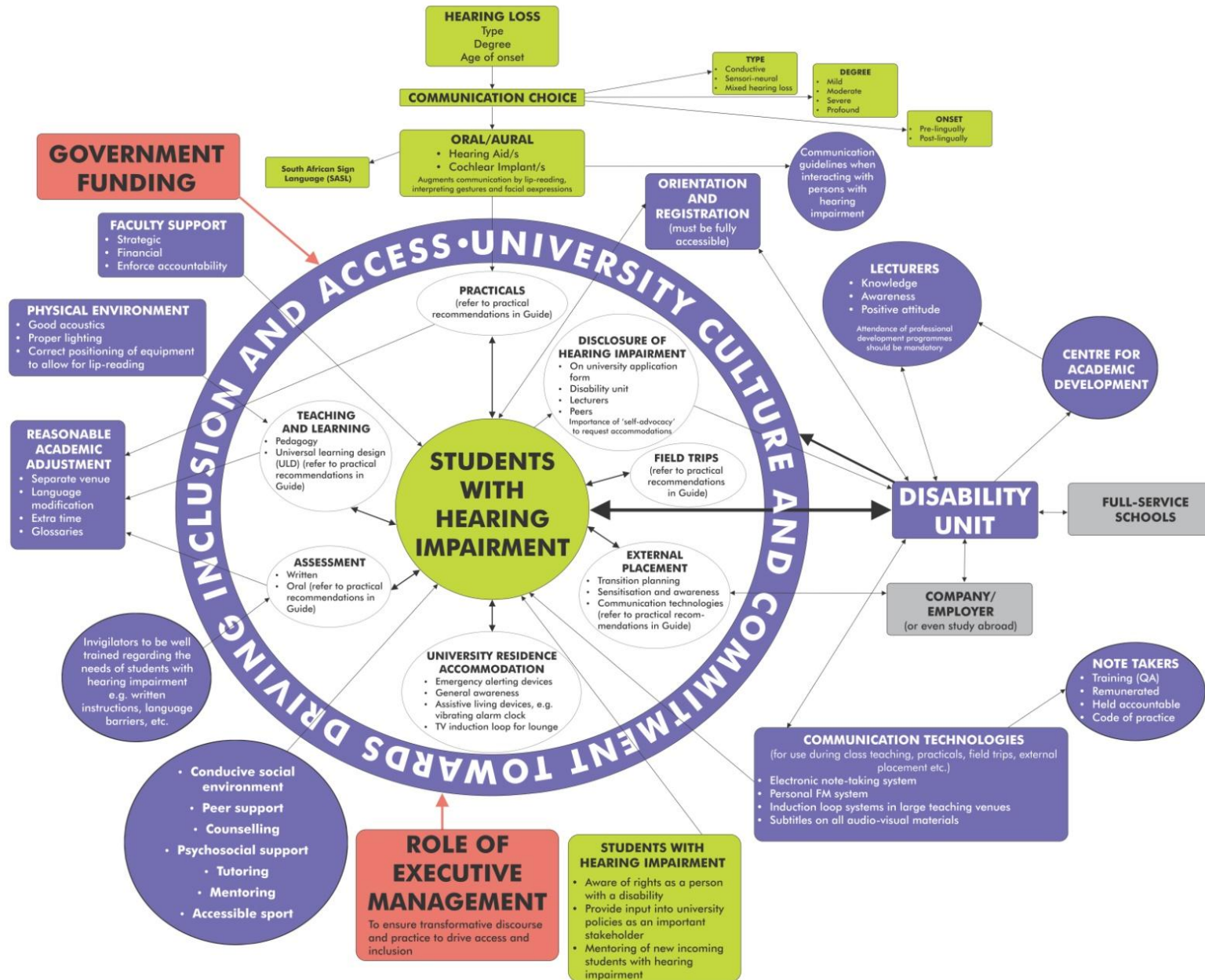


Figure 7.3: Learning support framework

## 7.7 STRENGTHS AND CONTRIBUTIONS OF THE RESEARCH STUDY

The strengths of this qualitative research study are the following:

- Various methods of data generation were used to capture the experiences of students with hearing impairment using the oral method of communication at the case study university. These methods included the use of a questionnaire to provide background information on each participating student, interviews with students, lecturers and a support staff member from the disability unit and document analysis. This allowed for a deep understanding of the primary participants' experiences of studying at a 'hearing' university.
- This research study had a rich and descriptive qualitative database that provided a clearly defined trace of data generation and data transformation.
- During the research process, consultation with two independent researchers as well as my two supervisors regarding my perceptions, insights, data transformation and my interpretations increased the trustworthiness of the study.

The following of some of the valuable contributions of this study to the existing literature:

- This is the first research study in South Africa which investigates teaching and learning support for students with hearing impairment using the oral method of communication.
- The adaptation of Urie Bronfenbrenner's bio-ecological model to understand the interactive nested environments in relation to a student with a hearing impairment (within the South African higher education environment).
- The specific finding related to hearing versus D/deaf identity was significant as it highlighted the relationship between self-identity, non-disclosure and support (refer to Figure 7.2).
- The developed theory (depicted as a flow diagram, refer to Figure 6.2) which helps to explain the relationship between identify, disclosure and educational attainment.
- The development of an original Learning Support Framework (see Figure 7.3) and the 'Guidelines for teaching students with hearing impairment in higher education' (Appendix L) are also important contributions to the field of study.

## 7.8 LIMITATIONS OF THE RESEARCH STUDY

Presenting an analysis of the findings uncovered in this study warrants a degree of caution. Firstly the participants' reports reflect individual perception of their experiences at university. It is possible that other factors about the participants' lives have influenced their perception. Furthermore, only 7 students were interviewed and their experience may not be reflective of a universal experience. Secondly, the student sample frame was provided by the disability unit. These students had either been in contact with the disability unit at some stage or one of their lecturers had requested support from the disability unit. Thus, it could be argued that the perceptions of those students with hearing impairment who cope well academically and who complete their degrees without any

form of support are not represented here. It is highly doubtful, however, that this is true. Thirdly, the participating students who were interviewed were all undergraduate students; thus, it could be argued that the perceptions of postgraduate students are not represented. In addition, three of the participating student were first-year students who might not have had sufficient time to actively seek out support or who might have had limited experience with the support provisioning provided.

Remembering that the human factor is both the greatest strength and the fundamental weakness of qualitative inquiry and analysis, as researcher, I acknowledge the subjective nature of the claims that I am making in relation to making meaning of the data. Aside from potential biases involved in 'researcher as instrument', as is typical of qualitative research, I also acknowledge possible additional bias in the analysis and interpretation of the data because I am the mother of a child with hearing impairment, I am involved in the disability sector and I work as an academic in higher education. Furthermore, depending on the approach employed by another researcher, I wish to acknowledge that it could also be possible to produce interpretations other than the ones represented in this thesis. Remaining open to the possibility that others might have told a different story, this chapter is essentially and ultimately a presentation of how I understand and make sense and meaning of the material and the connections between such.

A further limitation of this study is the fact that I am a novice qualitative researcher, that I had to 'learn on the job' and that, had I the opportunity to do it all over again, my approach could be different, possibly leading to other outcomes. An example of this is the way in which I coded the data and named each code.

And, finally, the inclusion and support of students with hearing impairment in higher education is fairly recent in South Africa, thus very little research has been conducted in this field. Therefore, I relied mostly on research carried out in countries where students with hearing impairment, using the oral approach, are well supported such as the United Kingdom and the USA. It could, therefore be argued, that the research was executed without sufficient local research control in any of the related fields in similar contexts which could have provided additional guidance and support.

## **7.9 RESEARCHER'S REFLECTIONS**

*By three methods we may learn wisdom: first, by reflection, which is noblest; second, by imitation, which is easiest; and third, by experience, which is the most bitter (Confucius, 551-479 BC).*

As I come to the close of this research, I want to pause for a moment and reflect on the five-year-long journey that I have undertaken to complete my study. I can honestly say that it was the most challenging task that I have ever undertaken but also one of the most rewarding. Being a novice qualitative researcher, my learning curve was extremely steep and, looking back, I can see that I made some mistakes but I have learnt from them and this learning can be incorporated into future practice. Given the chance for a "do-over" I would not have used such a detailed questionnaire,

but would rather have included specific questions in the interview guides to generate the data which I required. The 'extra' data, however, can be utilised for additional publications. Secondly, I would have made a very strong case to name the case study university so that a much more detailed description of the context could be provided which would link to the findings and the interpretation thereof.

Through this journey, I have also come to appreciate the value of qualitative research in its ability to allow for actual life experiences in a particular context to be shared and its potential for effecting real change. By listening to the voices of the participants, I came to understand how complex and adaptable we as human beings are, and how our perceptions of ourselves affect our lives through choices and related consequences on a daily basis. In terms of the work produced, I believe that some valuable insights were derived that may help to change the future for students with hearing impairment in higher education. But, most importantly, I am inspired by the students whom I was so privileged to get to know, both by their bravery and tenacity to face the challenges of studying at a hearing university with little support provision and also by their willingness and openness to engage in dialogue with me, sharing some very personal aspects of their life, even having to re-live (from memory) some traumatic events that they have experienced because of their hearing impairment in an inaccessible environment. I salute them for this!

## **7.10 CONCLUSION**

In this thesis, I have presented the findings from the first study ever to have been undertaken of the academic experiences of students with hearing impairment using the oral approach in higher education in South Africa. The study elucidated their experiences in a 'hearing' university, from their assumed identity to the barriers faced and the resultant coping strategies employed. I have shown that students with hearing impairment using the aural/oral approach are undisputedly under-represented and under-supported at the case study university, that there is an urgent need to improve communication and accessibility of information at both this and other universities and that the current reality for students with hearing impairment is much less than desirable. A number of critical factors that could lead to an improvement in the current situation for students with hearing impairment in higher education were also highlighted, with the recommendations expressed by the participants being grounded in their actual experiences.

At a more macro-, or philosophical level, the following summary recommendations are made: (i) the 'voices' of students with hearing impairment (as well as all other types of impairment) need to be heard and included when modifying university policies that affect them personally; (ii) staff at the disability unit and lecturers should take the time to find out which barriers are experienced and, what the students' individual needs are, and should then try to support them as far as possible; (iii) the university, in its approach to disability should be proactive rather than reactive and the

principles of ULD should be adopted; and (iv) the support staff from the disability unit should play a key role in preparing all first-year students with hearing impairment by meeting with each one personally shortly after arrival and providing them with a comprehensive information pack regarding their rights, the availability of support accommodations and how to negotiate each of these. Ultimately, there is a need for the development of a holistic academic learning support framework, which incorporates these critical success factors as well as other areas that could influence the learning experiences and eventual academic outcomes of students with hearing impairment.

At a more practical and actionable level, the following key issues for supporting students with hearing impairment in higher education, as emanating from the findings of this study, need to be addressed urgently:

- The physical teaching environment should be made fully accessible for students with hearing impairment.
- As hearing impairment is unique for each individual and complex to support, any efforts to enhance accessibility and to provide reasonable academic adjustment and other accommodations, should be made on an individual basis.
- In order to accomplish this, there is a need to ensure that staff working in disability units are well-informed and have up-to-date knowledge in this regard, especially in relation to assistive technologies.
- Measures to encourage disclosure should be introduced, not only for the students to comply with admission requirements, but more importantly to promote interaction with the disability unit staff and the acceptance of reasonable academic adjustments and other accommodations.
- The disability unit should play a key role in the promotion of self-advocacy skills development for students with hearing impairment, and ongoing monitoring of these students' progress should take place.
- Attendance at practical workshops related to accommodating the communication and learning needs of students with hearing impairment should be mandatory for all academic staff. This could be facilitated by the disability unit and should incorporate the principles of universal learning design (ULD).

All of the aforementioned factors point to a need for a cultural change at the case study university. This is related not only to the attitudes of academics and others, but also to the non-inclusive ethos at the university that pervades everything, from the availability of financial (and other) resources to prescriptive and limiting policies. It is critical that universities should not be reactive, only doing the minimum to stay out of trouble and pass their audits, but they should be doing everything in their power to ensure that students with hearing impairment (or other impairments) are granted full

opportunity to participate in all spheres of academic and student life, leading to a successful outcome and eventually a happy, self-fulfilled individual. In order to move towards an inclusive higher education, universities needs to undergo reformation, interrupting prevailing notions of “who goes to university, how students should be selected for university and what students bring to university” (Outhred, 2012:881). In this way, together **we** can change the reality for future students with hearing impairment and perhaps they will not continue to share experiences such as stated by Colin:

*The only thing I want to say is that it is very hard for me and it is very stressful at times as I am not really passing with flying colours all the time, so I feel that I have to work a lot harder than the other people to get where I get. It is very frustrating at times; I feel that they get it a lot easier than I do, but I guess that is life*  
(P5:S5\_M.doc – 5:148, Colin)

The truth is that this is not life and it should not be how he is experiencing life. It is the responsibility of each and every one of us to do whatever we can to change this reality by accommodating all of the needs of students with hearing impairment. And finally, the necessary accommodations and support must be provided for students with all types of impairment, including the ‘hidden’ and less visible types, such as hearing impairment.

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## APPENDIX A: Approval letter for ethical clearance



27 November 2008

Enquiries:

Reference No. 142/2008



Dear Ms Bell

### APPLICATION FOR ETHICAL CLEARANCE

With regards to your application, I am pleased to inform you that the project

*Investigating teaching and learning support for hearing-impaired students at a University in*   
 has been approved on condition that:

1. The researcher will remain within the procedures and protocols indicated in the proposal, particularly in terms of any undertakings made in terms of the confidentiality of the information gathered;
2. The research will again be submitted for ethical clearance if there is any substantial departure from the existing proposal;
3. The researcher will remain within the parameters of any applicable national legislation, institutional guidelines and scientific standards relevant to the specific field of research.

We wish you success with your research activities.

Best regards



## **APPENDIX B: Letter of consent**

### **CONSENT TO PARTICIPATE IN RESEARCH**

#### **INVESTIGATING TEACHING AND LEARNING SUPPORT FOR STUDENTS WITH HEARING IMPAIRMENT AT A UNIVERSITY IN THE \*\***

##### **Dear Student**

It would be appreciated if you could agree to participate in the abovementioned research study. I am currently studying in the Department of \*\*, Education Faculty at the University of \*\*. The results of this research study are to be submitted in fulfillment of the requirements for a PhD degree in the form of a thesis. In addition, information may be used for educational purposes in professional presentations and/or educational publications. You were selected as a possible participant in this study because you are a registered student at \*\* University with a hearing impairment.

##### **1. PURPOSE OF THE STUDY**

The purpose of this study is to explore and describe the current teaching and learning support provided to and the difficulties faced by students who are hearing-impaired using the oral method of communication. The study intends to research how students who are hearing-impaired cope academically and what provision is made for them in order to enhance their academic experience.

##### **2. PROCEDURES**

If you volunteer to participate in this study, I would ask you to do the following:

- Participate in one individual semi-structured interview ( $\pm 90$  minutes).
- Complete a short questionnaire requesting information regarding your hearing impairment, educational background as well as some demographic factors ( $\pm 10$  minutes).

(Both of the abovementioned interactions would take place on the campus of the University of \*\*.)

Your permission is also requested to access the following documentation: letters, memoranda and other communiqué between the disability unit and the faculty/department; computer records e.g. student progress reports, academic artifacts e.g. examples of assignments and test papers, as well as your personal records e.g. medical certificates to verify hearing impairment, academic support received during high school, matric results and information regarding assistive devices currently being utilised.

##### **3. POTENTIAL RISKS AND DISCOMFORTS**

If, at any time, you express any significant discomfort, I undertake to terminate the interview immediately.

##### **4. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY**

It is not envisaged that you would benefit directly from participation. This research, however, will hopefully contribute to the educational experience of future students with hearing impairment who undertake tertiary studies at a university, and so the potential benefit of this study is the improvement of Higher Education practice.

##### **5. PAYMENT FOR PARTICIPATION**

There is no financial remuneration for your participation in this study. Participants will, however, receive a R100 meal voucher immediately after the completion of the interview and the questionnaire. If the participant decides to withdraw or withdrawal occurs by the researcher, no meal voucher will be issued.

##### **6. CONFIDENTIALITY**

Any information that is obtained in connection with this study and that can be identified with you (refer to point no. 2 above) will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of the use of pseudonyms. Under no circumstances whatsoever will you be identified by name in the course of this research study, or in any publication thereof. Every effort will be made that all information provided by you will be treated as strictly confidential.

All data will be coded and securely stored, and will be used for professional purposes only. Only the researcher and supervisors will have access to the data which will be password protected.

Audio taping is part of this research. Only the researcher and supervisors will have access to written and audio-taped materials. You, as participant, have the right to review/edit the audio-tapes. All written and audio-taped materials will be used purely for research purposes.

This research study has received ethical clearance (to ensure that participants are protected) from the University of Stellenbosch and permission has been received to undertake the research.

### 7. PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study.

### 8. IDENTIFICATION OF RESEARCHER AND PROMOTERS

If you have any questions or concerns about the research, please feel free to contact:

**Researcher:** Mrs Diane Bell [REDACTED]

**Promoter:** [REDACTED]

**Co-Promoter:** [REDACTED]

### 9. RIGHTS OF RESEARCH PARTICIPANTS

You may withdraw your consent at any time and discontinue participation without penalty. If you have questions regarding your rights as a research subject, contact [REDACTED]

### SIGNATURE OF RESEARCH PARTICIPANTS

The information above was described to me by Mrs Diane Bell in English or Afrikaans. I was given the opportunity to ask questions and these questions were answered to my satisfaction.

I hereby consent voluntarily to participate in this study. I also grant permission for the access of the relevant documentation referred to above. I have been given a copy of this form.

\_\_\_\_\_  
**Name of Participant**

\_\_\_\_\_  
**Signature of Participant**

\_\_\_\_\_  
**Date**

### SIGNATURE OF RESEARCHER

I declare that I explained the information given in this document to \_\_\_\_\_  
\_\_\_\_\_. The participant was encouraged and given ample time to ask me any questions. This conversation was conducted in English or Afrikaans and no translator was used.

\_\_\_\_\_  
**Signature of Researcher**

\_\_\_\_\_  
**Date**

## APPENDIX C: Questionnaire – students

### QUESTIONNAIRE: STUDENTS

Dear Participant

Please answer all questions that apply to you. Most questions can be answered by placing a cross (x) in the respective box.

After some questions there are instructions. Please follow the instructions carefully so that the information you give will be clear and usable.

If it says “(Select one.)” place a cross (x) in the box opposite the **one** answer which comes closest to describing your situation or what you think, even though the answer may not be exactly right for you.

For some questions you are asked to make more than one selection. For this type of question, please be sure that you select only **one answer for each part of the question**.

NAME: \_\_\_\_\_

#### DEFINITION OF TERMS:

Hearing Impaired:	Hearing impaired describes individuals who have a hearing impairment, but are able to use the auditory channel as their primary mode for perceiving and monitoring speech or acquiring language. These individuals generally make use of hearing aids and/or cochlear implant/s and use the oral method of communication.
Deaf:	Deafness describes a hearing impairment that is so profound, the auditory channel (the ear) cannot function as the primary mode for perceiving and monitoring speech or auditory language. The person has no residual hearing and uses Sign Language predominantly.

#### THE FOLLOWING QUESTIONS ARE ABOUT YOUR FAMILY BACKGROUND:

Did your parent/s arrange for or provide special training/instruction/support at home? (For example, speech therapy, lip-reading lessons, extra English/Afrikaans classes etc.)

<input type="checkbox"/>	Did not give special training/instruction/support at home.
<input type="checkbox"/>	Did give training/instruction/support. The training/instruction/support was as
<input type="checkbox"/>	

Did your parent/s encourage you to prepare for a specific profession/occupation?

<input type="checkbox"/>	Did not encourage for a specific profession/occupation.
<input type="checkbox"/>	Did encourage for the following profession/occupation(s): (provide details below)
<input type="checkbox"/>	

Did your parent/s encourage you to get a University education?

<input type="checkbox"/>	Strongly encouraged me
<input type="checkbox"/>	Mildly encouraged me
<input type="checkbox"/>	Neither encouraged nor discouraged me; left it completely up to me
<input type="checkbox"/>	Mildly discouraged me
<input type="checkbox"/>	Strongly discouraged me

Hearing ability of father, mother, brothers and sisters. Please give the age of each person. To indicate gender, use "M" for males and "F" for females. Indicate with a cross (x) the hearing ability of each person during most of his or her life.

	Age Now	Gender	HEARING ABILITY		
			Normal Hearing	Hearing Impaired	Deaf
Father					
Mother					
Brothers					
and					
Sisters					

Hearing ability of persons you regard as "close friends".

**MY CLOSE FRIENDS ARE - -** (select one.)

<input type="checkbox"/>	All or almost all deaf or hearing impaired
<input type="checkbox"/>	Mostly deaf or hearing impaired, a few with normal hearing
<input type="checkbox"/>	About equally divided between deaf or hearing impaired and normally hearing
<input type="checkbox"/>	Mostly people with normal hearing, a few deaf or hearing impaired
<input type="checkbox"/>	All or almost all people with normal hearing

Check all of the methods of communication that you use in talking with persons in each of the categories listed below.

	Parents	Brothers/Sisters	Deaf/Hearing impaired friends	Hearing friends
Talking (speech)				
Writing (letters, memos)				
SMS/MMS via cell				
Email				
Other:				

How much can you understand by lip-reading? (Select one.)

	I never learned to lip read
	<b>I CAN UNDERSTAND--</b>
	Very little
	Some, but often ask people to repeat or to speak slowly
	Most of what is said, but sometimes ask people to repeat or speak slowly
	Almost everything that is said no matter who is talking or how fast they talk

How well can others understand your speech? (Select one.)

	I don't ordinarily use speech
	<b>PEOPLE SEEM TO UNDERSTAND--</b>
	Very little of what I say
	Some of what I say but often ask me to repeat
	Most of what I say but sometimes ask me to repeat
	Almost everything I say and rarely ask me to repeat
	Everything I say and never ask me to repeat

Hearing ability **WITHOUT** a hearing aid/s and/or cochlear implant/s.  
(Select either YES or NO for each statement.)

YES	NO	CAN YOU HEAR- -
		Very loud noises?
		Some speech sounds if spoken very loud?
		Some speech sounds spoken normally loud?
		Some speech sounds spoken in a whisper?
		Can you understand some words spoken normally loud even if you are not looking at the person who is talking?

Hearing ability **WITH** a hearing aid/s and/or cochlear implant/s.  
(Select either YES or NO for each statement.)

YES	NO	CAN YOU HEAR- -
		Very loud noises?
		Some speech sounds if spoken very loud?
		Some speech sounds spoken normally loud?
		Some speech sounds spoken in a whisper?
		Can you understand some words spoken normally loud even if you are not looking at the person who is talking?

When were you born?

Month		Day		Year	
-------	--	-----	--	------	--

When did you lose your hearing? (Born deaf, lost hearing at age 3 etc.)

--



How did you lose your hearing? (Meningitis, scarlet fever, German measles, don't know etc.)

--

THE FOLLOWING QUESTIONS ARE ABOUT YOUR SCHOOL EXPERIENCE:

Please list below the schools that you attended up to entering University.

NAME OF SCHOOL	AGES OF ATTENDANCE	KIND OF SCHOOL				HOW YOU WERE		
		Special	Public	Private	Other:	Speech	Speech And	Sign Language
	From age ____ to age ____							
	From age ____ to age ____							
	From age ____ to age ____							
	From age ____ to age ____							
	From age ____ to age ____							

About how many learners/pupils were there, on average (Grade 8 – 12), in your class in High School?

About \_\_\_\_\_ students

On average, how well did you do in your matric (final examinations)?

	Average of a D symbol	OR		Level 7
	Average of a C symbol			Level 6
	Average of a B symbol			Level 5
	Average of an A symbol			Level 4

THE FOLLOWING QUESTIONS ARE ABOUT YOUR UNIVERSITY EXPERIENCE:

Select below the person or persons who influenced you most in your decision to go to University.

	Father		Primary school teacher
	Mother		High school teacher
	Brother or Sister		Friend (not a relative)
	Uncle or Aunt		Other person: (specify)
	Cousin		

Which of the following purposes of going to University is (or was) the most important to you personally? (select one from the entire list.)

	A good general education and appreciation of ideas
	Having a good time whilst at University

	Learning to get along with different kinds of people
	Training for a specific job or career
	To please my parent/s
	Other purpose: (specify):

On average, how many hours, per week, do you spend in class (lectures)? \_\_\_\_\_ hrs

Once you decided to study at a “hearing” University, which of the following things do (or did) you usually do? (Select one.)

	Go to the lecturer before classes begin and inform him/her that you have a
	Go to the lecturer on the first day of class and tell him/her that you have a hearing
	Wait until the lecturer notices that you are having difficulty and asks you about it.
	Other (Check and specify):

21. What degree are you studying at University? If you changed your major course of study, please list all of them. For example, you may have started in Chemistry but changed to Engineering.

1.	
2.	
3.	

22. How do you get information during your lectures at a “hearing” University? (Select **all** of the methods you have used.)

	Take my own notes
	Do not take notes, get all I can through lip-reading and/or what I can hear
	Copy notes from person next to me
	Borrow notes from another student
	Ask someone to take notes for me
	Ask to use lecturers’ notes
	Make recordings of lectures and either someone/computer transcribes for me
	Retrieve class notes and PowerPoint presentations from e-learning platform e.g.
	Other method or methods(please specify):

23. On average, what have your results been for the last year at University i.e. 2008? (select one)

	Average of 80 – 100% (A symbol)
	Average of 70 – 79% (B symbol)
	Average of 60 – 69% (C symbol)
	Average of 50 – 59% (D symbol)
	Average of less than 50% (E symbol or lower)

24. Do you receive any special coaching or tutoring at University to help you cope academically?

	Yes
	No

25. **First, read through the list of steps** which a University might take to help deaf or hearing impaired students in their academic work. Add in your own suggestions, then, go back and place a cross (x) next to any **THREE** steps (including your own suggestion/s) that you feel would **most** help deaf or hearing impaired students in their **academic** work.

**THE UNIVERSITY SHOULD**

	Keep classes small
	Provide special tutors to help with academic work outside of class time
	Inform hearing students and faculty of the barriers faced due to your hearing impairment so that they will know and understand what to expect
	Pay hearing persons to take lecture notes for deaf and hearing impaired students
	Make extra copies of lecturers' notes so that students could use them
	Provide a speech and hearing centre where students could maintain or improve speech and lip-reading
	Provide counselors and psychologists who are familiar with the special problems faced by deaf or hearing impaired students
	Provide the technology for real-time speech to text translation e.g. Dragon
	Permit deaf and hearing-impaired students to decide whether or not to attend classes – recognize that they may learn more by reading outside of class
	Please add your own suggestions, then go back and tick three from the whole list.

26. Do you spend more or less time in (A) social and/or recreational activities and (B) studying and academic work than University students with normal hearing?

(A) Social and Recreation Activities (Select one.)	(B) Studying and Academic Work (Select one.)	Compared with hearing students I spend--
		Much less time
		A little less time
		Same amount of time
		A little more time
		Much more time

27. **First, read through the list of strategies** that deaf or hearing-impaired students might employ, as individuals, to make it possible to perform well academically in a “hearing” University. Add in your own suggestions, then, go back and place a cross (x) next to any **THREE** strategies (including your own suggestion/s) that you feel would **most** help deaf or hearing impaired students in their academic work.

**DEAF OR HEARING-IMPAIRED STUDENTS SHOULD:**

	Spend more time studying than most hearing students do
	Maintain or improve speaking skills
	Learn not to be bashful about asking to borrow hearing students’ class notes
	Take less than a full load of subjects each year/semester (extended graduation
	Do more outside reading than most normally hearing students do
	Maintain or improve skill in lip-reading
	Always sit in the front row in class
	Go to lecturers before classes begin and inform them of one’s hearing impairment so that they will know what to expect
	Not try to take notes in class but get what one can through lip-reading and/or through what one can hear
	Ask to borrow the lecturers’ notes (after class)
	Ask the lecturer for his/her class notes before lecturers, to prepare in advance
	Please add your own suggestions, then go back and tick three from the whole list.

28. While attending a “hearing” University, do you usually start conversations with hearing students or wait for them to talk first? (Select one.)

	I usually start conversations
	About half and half: sometimes I would start and sometimes wait for others to talk first
	I usually wait for hearing students to talk first
	It does not really matter either way

29. In your opinion, how important is the ability to lip-read and to speak for (A) academic success and (B) a good **social life** in a “hearing” University?

FOR ACADEMIC SUCCESS

Ability to <b>Lip-Read</b> is: (select <b>only</b> one)	Ability to <b>speak</b> is: (select <b>only</b> one)	
		Absolutely necessary
		Very helpful, but not absolutely necessary
		Somewhat helpful
		A little helpful
		Not at all helpful

FOR A HAPPY SOCIAL LIFE

Ability to <b>Lip-Read</b> is: (select <b>only</b> one)	Ability to <b>speak</b> is: (select <b>only</b> one)	
		Absolutely necessary
		Very helpful, but not absolutely necessary
		Somewhat helpful
		A little helpful
		Not at all helpful

30. Where do you live while attending University? (For example, at home with parents, with relatives, alone in private room, hostel/residence etc.)

31. What are your future plans (i.e. 2009 and beyond) for your education, career and life? (Please write a short paragraph)




THE FOLLOWING QUESTIONS ARE ABOUT WHAT YOU ARE CURRENTLY DOING

34. UNIVERSITY ATTENDANCE. I am now-- (Check one.)

<input type="checkbox"/>	A full-time student
<input type="checkbox"/>	A part-time student

35. EMPLOYMENT. I am now-- (Check one.)

<input type="checkbox"/>	Employed full-time
<input type="checkbox"/>	Employed part-time
<input type="checkbox"/>	Not employed
<input type="checkbox"/>	Other: (check and specify)
<input type="checkbox"/>	

(Adapted from Quigley, Jenné & Phillips:1968)

THANK YOU VERY MUCH FOR YOUR TIME, IT IS GREATLY APPRECIATED

## **APPENDIX D: Interview guide – disability unit**

### **INTERVIEW SCHEDULE: DISABILITY UNIT**

#### **PARTICIPANTS DETAILS**

(Researcher to record)

- Surname \_\_\_\_\_ (ensure confidentiality)
- Name \_\_\_\_\_
- Contact Details \_\_\_\_\_

#### **ENTRY**

Thank you for agreeing to meet with me to do this interview.

The aim of this study is to explore and describe the current teaching and learning support provided to students who are hearing-impaired using the oral method of communication.

I am doing this study as part of my research towards completion of my PhD studies at the University of Stellenbosch.

Before we start, let me explain that the information obtained during this interview will be kept confidential, including your name. I assure you of your anonymity.

The duration of the interview will be approximately 90 minutes. The interview will, with your permission, be audio recorded. The tapes will be transcribed and stored securely. Access will be restricted to the study supervisors and me.

Participation in this study is completely voluntary and you are at liberty to withdraw at any stage.

Are there any questions of clarity you would like to ask me before we start?

#### **PURPOSE OF THE INTERVIEW**

- To explore the support services offered and the perceptions of support staff engaging with students who have a hearing impairment.

#### **AREAS TO BE COVERED:**

- Teaching and Learning support services
- Policies
- Assistive technology
- Views on inclusion

#### **Learning support services provided to students with hearing impairment:**

*“Could you please tell me about the support services offered at \*\*, especially regarding students with hearing impairment?”*

Ensure the following areas are covered:

- The role of the office/department:
  - Generally
  - Pre-application, application and admission



- Teaching and Learning
- Assessments (before, during and after)
- Other areas of support e.g. \*\*?
- Orientation/Induction Programme:
  - Outline of the programme, separate?
  - How do they cater for HI students
- Elaborate on the major challenges faced by a HI student at \*\*.
- Elaborate on the major challenges faced by lecturers teaching HI students at \*\*.
- Good practice:
  - Successful strategies used to support HI students

#### **Institutional Policies at \*\*:**

*“Could you tell me about the University’s institutional policies regarding SWD?”*

- Persons with Disabilities policy:
  - Role of office: implementing, informing, updating etc.
- Policy regarding Confidentiality and Disclosure? How implemented?
- Other policies that include the needs of SWD e.g. assessment?

#### **Provision of Assistive Technology/Devices:**

*“Could you tell me about any assistive technologies and/or devices available at \*\* to students with hearing impairment?”*

- Provision of AT by \*\* e.g. FM systems:
  - Role of office?
- Usage of technology (e.g. email, SMS) by your Office:
  - To communicate with and/.or cater for the needs of HI students?
- Types of communication support available to students with hearing impairment for activities such as careers advice, counselling sessions, graduation ceremonies, SRC events etc.?

#### **Views on inclusive education:**

*“Could you tell me about your personal views regarding Inclusive Education and the current position of the \*\*?”*

- Other support still required to ensure higher level of inclusivity at \*\* (related to HI students)?
- In comparison to other universities in the \*\*, \*\* has a large number of HI students using the oral method of communication. Why do you think this is the case?

Any other general comments?

## CLOSURE

Thank you once again for your time. I will keep in touch with you to verify that I have correctly recorded the issues we have talked about today.

## REQUEST FOR SUPPORTING INFORMATION AND DOCUMENTATION

1. Information regarding currently registered SWHI:
  - a. Numbers (received)
  - b. Course and level of study (received)
  - c. Type and nature of hearing impairment
  - d. Academic history
  - e. Other relevant documentation e.g. request for support, communiqué with university staff (lecturers etc.)
2. Disability Policy (request copy).
3. Teaching and Learning Policy, Assessment Policy etc. (request copies of other policies related to SWD)
4. Institutional support structures e.g. disability forum. (request copies of agendas, minutes etc.)
5. Other??

## **APPENDIX E: Interview guide – students**

### **INTERVIEW SCHEDULE: STUDENTS WITH HEARING IMPAIRMENT**

#### **PARTICIPANTS DETAILS**

(Researcher to record)

- Surname \_\_\_\_\_
- Name \_\_\_\_\_
- Contact Details \_\_\_\_\_

#### **ENTRY**

Thank you for agreeing to meet with me to do this interview.

The aim of this study is to explore and describe the current teaching and learning support provided to and the difficulties faced by students who are hearing-impaired using the oral method of communication.

I am doing this study as part of my research towards completion of my studies at the University of Stellenbosch.

Before we start, let me explain that the information obtained during this interview will be confidential, including your name. I assure you of your anonymity.

The duration of the interview will be approximately 120 minutes. The interview, with your permission, will be audio recorded.

Participation in this study is completely voluntary and you are at liberty to withdraw at any stage.

Please note that there are no right or wrong answers, your views are significant for the study.

Are there any questions of clarity you would like to ask me before we start?

#### **PURPOSE OF THE INTERVIEW**

- To explore the perceptions of students with hearing impairment regarding their educational experiences i.e. barriers experienced, coping strategies, use of assistive technology, curriculum access, the provision of support services, and
- To determine the implications regarding inclusion.

#### **AREAS TO BE COVERED: (for researchers' own information)**

- Support services & Assistive technology
- Curriculum accessibility
- Barriers experienced
- Coping strategies
- Critical success factors
- Views on inclusion

### Grand Tour Question:

*“Could you please tell me about your experiences as a student with a hearing impairment at this University, thinking back right from when you applied to study.....”*

[Note: ensure the following is covered:]

### Learning support services:

*“Could you please tell me about various learning support services you may have made use of during the course of your studies?”*

- Think back to when you applied to study, were accepted and started your first classes at the University. Was this process facilitated by the University? How? (*Probe re pre-application interview, orientation etc.*)
- \*\* University offer various support services to students. Have you ever made use of the disability unit? If so, how did you find out about this service? What prompted you to seek out this service? Other services?
- What other learning support services have you made use of? (*tutors etc.*)
- What has your experience been regarding the use of (value derived from) these support services? (*Probe re suggestions for improvement*)

### Curriculum accessibility:

*Explain: Key components of the curriculum include the style and tempo of teaching and learning, language of instructions, what is taught, the way the lecture is managed and organized, as well as materials and equipment which are used in the learning and teaching process.*

*“As a student with a hearing impairment, please comment on curriculum accessibility as experienced by you in your course of study?”*

- Could you explain how your lecturers adapt their teaching styles to accommodate your communication needs in the classroom? (*lighting, glossaries, position in class, access to lecture notes etc.*)
- How are new technologies e.g. email, multimedia packages, SMS etc. are used in order to deliver the curriculum in an accessible, alternative format to cater for your needs.
- How effective is the use of assistive devices e.g. FM system, during lectures?
- How do your lecturers adapt their assessment methods to accommodate your needs? (*language modification, extra time etc.*)
- What strategies would you recommend to aid communication with students who have a hearing impairment in the classroom?

### Barriers experienced?

*“Have you experienced any barriers to learning and if so, how have you attempted to overcome these barriers?”*

- What are some of the things that you believe have stood/continue to stand in the way of your academic progress (limited your educational experience)?

### Coping strategies?

- In what ways have you attempted to overcome some of the barriers you have experienced?
- Describe the more successful coping strategies that you have used?

### What factors did participants perceive might help them to complete their studies?

*“What, in your opinion, would you regard as critical factors for academic success as a student with a hearing impairment studying at university?”*

- Who or what would you say has been most helpful to you thus far in your academic studies? Why?
- If you were to advise a new first-year student with a hearing impairment on what they needed to do or know, what would you tell them? Why?
- In conclusion, is there anything else you would like to tell me with regards to your educational experience as a student in higher education?

### Views on inclusive education?

*“What is your view on including students with disabilities into mainstream education?”*

- Pro’s and Con’s

### CLOSURE

Thank you once again for your time. I will keep in touch with you to verify that I have correctly recorded the issues we have talked about today. This is the reason for me recording your contact details.

## APPENDIX F: Interview guide – lecturers

### INTERVIEW SCHEDULE: LECTURERS OF STUDENTS WITH HEARING IMPAIRMENT

#### PARTICIPANTS DETAILS

(Researcher to record)

- Surname \_\_\_\_\_
- Name \_\_\_\_\_
- Contact Details \_\_\_\_\_

#### ENTRY

Thank you for agreeing to meet with me to do this interview.

The aim of this study is to explore and describe the current teaching and learning support provided to students who are hearing-impaired using the oral method of communication.

I am doing this study as part of my research towards completion of my studies at the University of Stellenbosch.

Before we start, let me explain that the information obtained from this interview will be confidential, including your name. I assure you of your anonymity.

The duration of the interview will be approximately 45 minutes. The interview, with your permission, will be audio recorded.

Participation in this study is completely voluntary and you are at liberty to withdraw at any stage.

Are there any questions of clarity you would like to ask me before we start?

#### PURPOSE OF THE INTERVIEW

- To explore the perceptions of lecturers regarding engaging with students who have a hearing impairment.

#### AREAS TO BE COVERED:

- Curriculum accessibility
- Assistive technology
- Support services
- Staff development
- Views on inclusion

*“Could you please tell me about your experiences regarding teaching student/s with a hearing impairment?”*

[Ensure the following areas are covered:]

- Institutional support services:
  - Could you explain the role that institutional support services e.g. the disability unit, has played in, if any, in supporting (e.g. advising) you?

- Communication strategy:
  - Could you please elaborate on the communication strategy you use when teaching students with hearing impairment? (*equipment, lip-reading, visibility, eye contact, gaining attention before speaking, speaking clearly, pace, rephrasing, minimizing background noise etc.*)
- Accessible teaching and learning strategies:
  - How do you go about accommodating a student/s with a hearing impairment in your lectures? (*curriculum accessibility, providing copies of notes, course outlines, handouts in advance, present info visually, provide glossaries, have clearly expressed aims and learning outcomes for each lecture, write topics & key headings on the board, lesson structure, use range of explanations, exploit new technologies etc.*)
- Technology:
  - How do you make use of technology e.g. email, multimedia packages, SMS, WebCT etc. in order to deliver the curriculum in an accessible, alternative format to cater for the needs of students with hearing impairment?
- Managing group work:
  - Working in large groups can be difficult for a student with a hearing impairment. Could you please elaborate on any strategies you use to accommodate these students during group work activities? (*take turns speaking, note-takers, repeat responses, indicate who is speaking & change of speakers, control pace of discussion, ensure group uses e.g. FM system etc.*)
- Assistive devices:
  - What use, if any, is made of assistive devices e.g. FM system, loop system, CART, CAN etc. in your classes? How effective are these technologies? Issues?
- Assessments:
  - How do you go about accommodating a student/s with a hearing impairment before/during and after assessments? (*institution-wide procedures, alternative exam and assessment arrangements, consult individual students, exam info widely publicized in advance, language modifications, invigilators etc.*)
- Barriers:
  - What are some of the barriers you have experienced?
  - In what ways have you attempted to overcome some of the barriers you have experienced?
- Best practice:
  - Could you share some areas of good practice re inclusive teaching i.e. describe the more successful strategies that you have used?
- Additional support required:
  - What additional institutional or other support, if any, do you envisage you would require for more effective and efficient teaching in an inclusive environment?
- Staff development:
  - What role has “staff development and training” played in providing you with the necessary skills to deal with teaching students with hearing impairment (and other disabilities) in your classes? (*faculty awareness, staff induction, awareness sessions, use of individual tutors & their training, guidelines are disseminated e.g. T & L, staff discuss issues, staff made aware of new technologies etc.*)

- Mentoring:
  - If you were to advise a new lecturer who has one or more students with hearing impairment in their class on what they needed to do or know, what would you tell them? Why?
- What are your personal views on inclusive education i.e. including students with disabilities in mainstream higher education?
- In conclusion, is there anything else you wish to share with me regarding your experience of teaching students with hearing impairment?

## **CLOSURE**

Thank you once again for your time, I really appreciate it. I will keep in touch with you to verify that I have correctly recorded the issues we have talked about today.



## APPENDIX G: Excerpt from a transcribed interview<sup>10</sup>

S5: Okay they should wear a microphone firstly; they should allow you to sit in the front of the class. They should be willing to see you after class and be patient with you because you have a hearing impairment things are harder for you. That is about all they can do, they can't really accommodate you because they have a whole class of people.

R: Now that you know that there is a disability unit at the university, would you consider making use of any of their support services?

S5: Well honestly I got through my first year not knowing about them, so as long as I have people around me that I can rely on like my friends and can ask them questions, then that is about all I need really.

R: The text books that you use, can you rely on them to supplement what you have missed in class?

S5: No not really, some of the text books are very good, but mostly the text books and the things they do in the class are not exactly the same and it is slightly different, I wouldn't recommend just relying on the text book the best form of written work you want to study is the PowerPoint presentations because that is the exact work they are covering and it explains the stuff well and some of the text books there are mistakes in it. Like they would explain a concept this way, where is incorrectly explained, so you can't rely completely on the text book.

R: And in the subject where the lecturer is not using PowerPoint have you approached them and explained that you have a hearing impairment and you need it?

S5: No, not at all. There is not even an electronic website for that subject. The frustrating thing is that the lecturer doesn't really speak very clearly. My friends with normal hearing, struggle to hear the lecturer. I basically rely on the notes I take. In the library at \*\*, there are also some previous tests and exams that he left us so that we can Photostat and work through that.

R: So you can work through that?

S5: So I basically rely on that and if I have a problem then I go and ask him, if I am close to him I can hear him perfectly and he is patient and he explains everything nicely, but during class I can't hear what he is saying.

R: Does he use a microphone?

S5: No he doesn't wear a microphone.

R: Have you asked him to wear a microphone?

S5: The class we are in is a small class and he doesn't wear one because there are not any speakers in the class for that. Not all the classrooms in the faculty have speakers in them. It is a big problem.

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<sup>10</sup>Only an excerpt of the transcribed interview was provided and not a full transcript to maintain anonymity and confidentiality of the information shared.

## APPENDIX H: Coding of transcript using ATLAS.ti

The screenshot displays the ATLAS.ti software interface. The main window shows a transcript with several paragraphs of text. On the right side, a vertical list of codes is applied to different segments of the transcript. A 'Code Manager' window is open on the right, showing a list of codes with their names and a search bar. The codes listed include:

- AC-CS alert lecturer~
- AC-CS class notes~
- AC-CS concentration~
- AC-CS consult lecturer~
- AC-CS declare DIS~
- AC-CS e-notes~
- AC-CS ext programme~
- AC-CS hearing aid/s~
- AC-CS interact LEC~
- AC-CS lip-reading~
- AC-CS listening skills~
- AC-CS mentor~
- AC-CS note-taker~
- AC-CS own notes~
- AC-CS parental supp~
- AC-CS peer support~
- AC-CS pre-reading~
- AC-CS scribe~
- AC-CS seating POS~
- AC-CS self-study~
- AC-CS sharing~

The transcript text is as follows:

012 S5: It was very intimidating at first because suddenly you are at University and it is a whole new world and basically I got a lot of information from my friends because I didn't pick up everything but I picked up a lot by myself and the orientation was good they went through it thoroughly and they made sure we knew everything and they made sure we knew all the methods on how they calculate your marks and make sure you pass etc. They make sure you know about the mentor groups and they have that at engineering where they get a mentor for you where they help you. They also had a Dean's period every Friday where the Dean came to talk to us and told us about things and give us advice on the up coming weeks and tests and exams. So that also helped a lot.

013 R: How was that information relayed to you?

014 S5: Mostly by speech and there was also Power Point presentations, they also handed out the PowerPoint presentations on an A4 paper so you could read through whilst he was giving the PowerPoint presentation.

015 R: Was that for the Dean's period?

016 S5: No that was for the orientation. The Dean's period they didn't really, he has some PowerPoint but he did it verbally and he didn't hand out the PowerPoint notes. I could hear him because he had the microphone on so that helped.

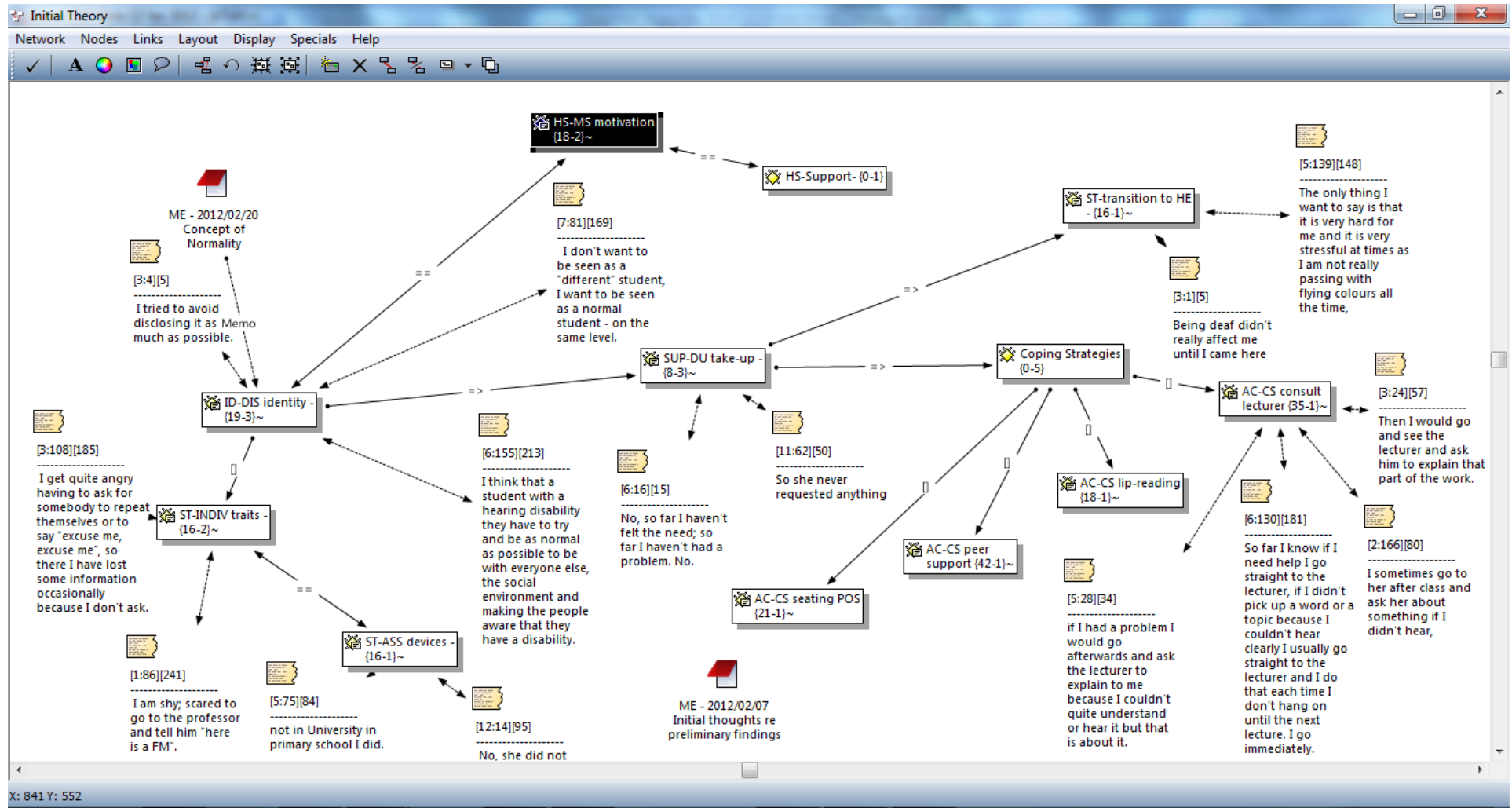
017 R: And if we just go back to orientation, did you catch everything that was been said, did they use microphones? Did they have enough handouts for all the different groups?

018 S5: Yes, there were enough handouts and it was very organized. We knew where we had to be and they made sure that we knew where to get our timetables and everything. It was well handled.

019 R: You mentioned you could ask a friend. Did you already have some people that you knew?

020 S5: Yes, there was one friend that was with me in Primary school and I knew him pretty well and my other friend from High school also came to study engineering, so they definitely helped

# APPENDIX I: Network view



**APPENDIX J: Building categories to themes**

<b>How can students with hearing impairment, using the oral method of communication, be better supported in order to enhance their educational experience and improve their chances of successfully graduating</b>			
<b>RESEARCH QUESTIONS</b>	<b>CODES (173)</b>	<b>CATEGORIES/FAMILIES</b>	<b>THEMES (5)</b>
What does it mean to be hearing-impaired?	ID-declare disability lecturers - ID-declare disability lecturers + ID-declare disability peers - ID-declare disability peers + ID-disability identity - ID-disability identity + HEI-declare disability - application form + HS-motivation HEI - personal ST-assistive devices - ST-individual traits -	HEARING IMPAIRMENT AND SELF-IDENTITY  HEARING IMPAIRMENT AND SELF-ADVOCACY  PERSONAL MOTIVATION	SELF-IDENTITY AND SELF-ADVOCACY
What, if any, curriculum transformation has occurred in order to accommodate the hearing-impaired student?	HEI-assessment policy- HEI-department guidelines SWD- HEI-inclusivity HEI-policy SWD  AC-lecture experience - audio (hearing) + AC-lecture experience - awareness + AC-lecture experience - bilingualism AC-lecture experience - class discussion + AC-lecture experience - class notes + AC-lecture experience - class size + AC-lecture experience - communication + AC-lecture experience - email + AC-lecture experience - lecture notes + AC-lecture experience - lighting + AC-lecture experience - multi-media + AC-lecture experience - personal support + AC-lecture experience - seating position + AC-lecture experience - teaching methodology + AC-lecture experience - understanding +	CURRICULUM TRANSFORMATION  CURRICULUM ACCESSIBILITY	INCLUSIVE EDUCATIONAL PRACTICES
What support is provided by the University to the hearing-impaired student?	AC-exam extra time AC-exam extra time take up - AC-exam extra time take up +	INCLUSIVE EDUCATIONAL PRACTICES / REASONABLE ACCOMMODATIONS	(INCLUSIVE EDUCATIONAL PRACTICES)

	<p>ST-assistive devices +  ST-disability unit - awareness –  ST-disability unit - awareness +</p> <p>SUP-D** group  SUP-D** recommendations  SUP-Forum for SWD  SUP-Institutional policy  SUP-mentor system - communication  SUP-mentor system - disability awareness  SUP-mentor system - experience +  SUP-mentor system - functioning  SUP-mentor system - recommendations  SUP-mentor system – selection</p> <p>SUP-disability unit - challenges  SUP-disability unit - communication -  SUP-disability unit - communication +  SUP-disability unit - donor funding  SUP-disability unit - experience -  SUP-disability unit - experience +  SUP-disability unit - history  SUP-disability unit - recommendations  SUP-disability unit - role  SUP-disability unit - take-up -  SUP-disability unit - take-up +  SUP-disability unit - technology</p>	<p>ACADEMIC SUPPORT</p>	
<p>What difficulties (educational barriers) do students with hearing impairment experience</p>	<p>AC-exam experience -  AC-lecture experience - audio (hearing) -  AC-lecture experience - availability -  AC-lecture experience - awareness -  AC-lecture experience - class discussions -  AC-lecture experience - class notes -  AC-lecture experience - class size -  AC-lecture experience - communication -  AC-lecture experience - language -  AC-lecture experience - lecture notes -  AC-lecture experience - lighting -  AC-lecture experience - multi-media -  AC-lecture experience - noise level -  AC-lecture experience - personal support -  AC-lecture experience - seating position -  AC-lecture experience - relationship -  AC-lecture experience - teaching methodology -  AC-lecture experience - understanding -  AC-lecture experience - work load –</p> <p>HEI-experience -</p>	<p>COMMUNICATION BARRIERS /  BARRIERS TO LEARNING /  EDUCATIONAL BARRIERS</p>	<p>BARRIERS TO TEACHING AND  LEARNING</p>

	<p>HEI-disability awareness -  HEI-orientation -  HEI-registration -</p> <p>ST-transition to HE -</p>		
and how do they attempt to overcome them?	<p>AC-coping strategy - alert lecturer  AC-coping strategy - concentration  AC-coping strategy - consult lecturer  AC-coping strategy - declare disability  AC-coping strategy - e-notes  AC-coping strategy - extended programme  AC-coping strategy - hearing aid/s  AC-coping strategy - interact with lecturer  AC-coping strategy - lip-reading  AC-coping strategy - listening skills  AC-coping strategy - mentor  AC-coping strategy - note-taker  AC-coping strategy - other class notes  AC-coping strategy - own class notes  AC-coping strategy - parental support  AC-coping strategy - peer support  AC-coping strategy - pre-reading  AC-coping strategy - scribe  AC-coping strategy - seating position  AC-coping strategy - self-study  AC-coping strategy - sharing  AC-coping strategy - studying  AC-coping strategy - textbooks  AC-coping strategy - time management  AC-coping strategy - tutor (1-to-1)  AC-coping strategy - tutorial sessions</p> <p>AC-exam coping strategy - bilingualism  AC-exam coping strategy - extra time  AC-exam coping strategy - invigilator  AC-exam coping strategy - peers</p> <p>HEI-orientation coping strategies</p> <p>ST-personal coping strategies</p>	INDIVIDUAL EDUCATIONAL COPING STRATEGIES	COPING STRATEGIES
What factors did participants perceive might help them to successfully complete their studies?	<p>AC-exam experience +</p> <p>AC-exam recommendation - audio  AC-exam recommendation - awareness  AC-exam recommendation - inform lecturers  AC-exam recommendation - instructions  AC-exam recommendation - time</p>	CRITICAL SUCCESS FACTORS	CRITICAL SUCCESS FACTORS

	<p>AC-lecturer recommendation - audio  AC-lecturer recommendation - board work  AC-lecturer recommendation - class size  AC-lecturer recommendation - disability awareness  AC-lecturer recommendation - e-notes  AC-lecturer recommendation - glossary  AC-lecturer recommendation - lecture notes  AC-lecturer recommendation - note-taker  AC-lecturer recommendation - relationship  AC-lecturer recommendation - repetition  AC-lecturer recommendation - seating  AC-lecturer recommendation - speech  AC-lecturer recommendation - staff dev  AC-lecturer recommendation - support  AC-lecturer recommendation - teaching methodology  AC - lecturer recommendation - curriculum</p> <p>HEI-recommendations - general  HEI-recommendations - orientation  HEI-recommendations - registration  HEI-recommendations - staff development</p> <p>ST-advice for new students - academic  ST-advice for new students - declare  ST-advice for new students - personal  ST-advice for new students - support  ST-advice for new lecturers  ST-individual traits +</p>		
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**CODES NOT USED:**

HEI-disability awareness +  
HEI-experience +  
HEI-orientation +  
HEI-registration +

HS- implementation challenges IE  
HS-experience -  
HS-experience +  
HS-mainstream - admission  
HS-mainstream - motivation  
HS-motivation HEI - family  
HS-motivation HEI - school  
HS-special school – motivation

RES-admission

RES-barriers  
RES-coping strategies  
RES-emergency plan  
RES-recommendations  
RES-type of accommodation

SOC-barriers experienced  
SOC-multi-media - subtitles+  
SOC-peer acceptance+

ST-communication method

ST-student extra-curricular activity -  
ST-university selection  
ST-use of cellphone –

SUP-Dean's period

## APPENDIX K: Recommendations per theme

In this section recommendations are made in relation to the themes which emerged from the data, namely: identity cultural paradigm, inclusive practices, university support, educational barriers and coping strategies.

### Recommendations related to theme 1: Identity cultural paradigm

- Students with hearing impairment should be encouraged by their families, from a young age, to acknowledge and understand their hearing impairment, including the implications for communication and learning, so as to understand their support requirements. Similarly, DeFur *et al.* (1996), Eaton and Coull (1999), Getzel *et al.* (2000) argue for the need for self-determination skills but also the need for students with hearing impairment to accept their disability and to understand how this influences their learning.
- Parental and teacher influence should be used to encourage students' willingness to disclose their hearing impairment, and also to facilitate the process from adolescence, so that by the time of transition to higher education it is usual practice for them.
- Incentives are needed to encourage students with hearing impairment to disclose, such as bursaries or scholarships covering tuition and residence fees but also their assistive technology needs. This would help to increase and facilitate access.
- Universities should develop various approaches to providing messages for prospective students to encourage early disclosure such as websites, prospectuses, brochures/publications, social media, open days, using cases studies of former or current students (with their express consent) and outreach work with learners in matric and further education colleges. In a study by Waters *et al.* (2012), one university introduced a personal learning plan at induction for all students, which led to a doubling of pre-entry disclosure rates.
- The skills of self-advocacy should also be encouraged from a young age with parents allowing their children with hearing impairment to problem-solve and practice requesting accommodations at school level. This may lead to increased rates of disclosure and possibly requests for support at university. Increased requests for support could lead to real change at the university.
- Universities, through their disability units, could offer practical workshops on the development of self-advocacy, self-management and self-determination skills for students. Studies indicate that, when students with disabilities complete training to help them advocate for classroom accommodations with their lecturers, they maintain and generalise the self-advocacy skills taught in the programme (Roessler, Brown & Rumrill, 1998). In this way, the students will learn how to ask for what they need and how to respond to lecturers who 'forget' or 'refuse' to make pedagogical changes.



- Universities should provide technological solutions that allow for discrete listening, such as audio induction loop systems, which allow students to be independent and maintain their hearing identity whilst keeping their dignity intact.
- The DHET, through the development of a National Disability Policy and Strategic Framework for higher education (DHET, 2012), should exert pressure on universities to improve their support provisioning for students with disabilities, which would encourage disclosure by these students. Additional dedicated funding should also be granted to universities to support the needs of students with disabilities.

### **Recommendations related to theme 2: Inclusive practices**

- The disability unit needs to advocate for the implementation of specific reasonable academic adjustments at the university for students with hearing impairment such as language modification, lecturers providing copies of their lecture notes and handouts in advance, glossaries to be provided for each subject, audio-visual materials to be subtitled, group membership to be kept small when making use of group work, lecturers to repeat questions and answers asked by other students in class, etc. See Appendix L: 'Guidelines for teaching students with hearing impairment in higher education'.
- All teaching faculty should attend professional staff development programmes related to:
  - interacting with and supporting/accommodating students with disabilities, especially those with hearing impairment as they remain under-represented and under-supported in higher education; and
  - the principles of ULD to make curricula (materials, teaching, assessment, etc.) accessible.

The attendance of the abovementioned training should be mandatory and lecturers should be held accountable for non-compliance.

### **Recommendations related to theme 3: University support**

- The DHET should provide universities with dedicated funding to increase the learning support offered to students with disabilities.
- In addition, the university should prioritise funding to attract (by means of bursaries/scholarships) students with hearing impairment and support their learning needs, as well as for improving accessibility to communication and information.
- Currently, 'inclusion' is not on the agenda of top management. This needs to change as it should be a top-down approach to seep into the core of the institution and infuse 'inclusion' and 'accessibility' into all practices. Implementation of policies related to students with disabilities needs to be monitored and individuals should be held accountable for non-compliance. Strategic and financial (short-, medium- and long-term) planning must include the aspects of accessibility and inclusion.

- The disability unit at the university should not be part of student (welfare) services but should rather be independent or part of the transformation or diversity unit, with an empowered reporting line to effect real change within the institution. Inclusion of students with disabilities should be part of the transformation agenda at the university.
- Support services should not operate separately from, but should be infused into broader teaching and learning support initiatives (Howell, 2006).
- There is a need for all the staff at the disability unit to receive training regarding the support of hearing impairment, but at least one specific person should receive training in and develop expertise regarding assistive technologies, such as audio induction loop systems, electronic note-taking systems as well as other assistive listening and assistive living devices (such as flashing lights during emergencies), which are required by students with hearing impairment.
- Once students have indicated on their university application form that they have a hearing impairment and after they have been accepted as students, the staff from the disability unit should do more than simply send them an email. Each student, together with his or her parents (as need be), should be invited to a face-to-face meeting to discuss the student's needs, the availability of various learning support and other accommodations and, most importantly, to develop a relationship with the student.
- Information regarding the provision of learning support for students with disabilities as well as institutional policies of relevance should be made widely available to all students.
- The facilities for electronic note-taking as well as assistive listening devices such as FM systems for classrooms without induction loop systems should be made available to all students with hearing impairment.
- The university should invest in the installation of induction loop systems for larger venues, especially where the acoustical quality is very poor.
- The provision (types and availability) of learning support for students with hearing impairment should be increased to meet these students' communication and learning needs, such as developmental courses on self-advocacy, academic monitoring, transition planning, etc.
- The mentoring system, which is currently only available to first-year students, should be made available (optional) to students with disabilities in their second year of studies as well. The students find it extremely helpful, assisting them in dealing with day-to-day issues that arise because of their hearing impairment.
- Audio equipment in large teaching venues should be available and properly maintained, with the use thereof mandatory for all lecturers.
- All stakeholders, including students with disabilities, should have input into the institutional policies that affect their rights and educational experiences.
- All students with disabilities (new and current) should be emailed both a copy of the institutional policy regarding students with disabilities as well as information regarding the

learning support and other accommodations that are available to them, depending on their impairment.

- Recurrent clauses in the policies related to the financial aspect of supporting students with disabilities, such as “due consideration of the viability of providing such a service” and “taking the practical and financial viability of supplying suitable support services into account” reinforce the notion that dedicated funds should be provided by the DHET and the university, but such clauses also provide a very convenient loophole for non-delivery of adequate support provisioning. The policy should be amended to reflect the social model of disability and an appendix should be added which clearly states the specific support that will be provided by the university for each type of impairment. This policy should also outline the responsibilities of both the faculties and the academics in supporting the learning needs of students with disabilities.
- At national level, there is a dire need for government to fast-track the development and implementation of the NDPSF, including the provision of a Code of Good Practice for supporting the learning needs of students with disabilities.
- To begin with, at one university in the country at least, a centre of best practice should be established. The purpose of this initiative should be national (and even international) sharing of knowledge of best practice in terms of learning support, including assistive technologies for students with hearing impairment, with a fully-functioning resource centre available for the showcasing and testing of technologies. The various heads of disability units could liaise with this centre for support and research could also be conducted in this field.

#### **Recommendations related to theme 4: Educational barriers**

- Professional staff development and training workshops should be mandatory for all staff. Topics should cover universal learning design (ULD) as well as sensitisation and awareness training regarding various disabilities and ways to support the needs of each student. In addition, staff from the disability unit should be trained regarding the management of assistive listening devices and they should be in a position to teach lecturers, for example, how to use an FM system or an induction loop system (Crandell & Smaldino, 1999; Flexor, 1997).
- University policy should be specific regarding the minimum levels of support that students with disabilities are entitled to, and lecturers who fail to support the needs of these students, both in the classroom as well as for assessments, should be held accountable by university management. Students need to work closely with the staff in the disability units, so that ongoing monitoring of the support received takes place.
- One person in each department/faculty (depending on the numbers) should be the contact person for students with disabilities regarding their needs and liaison with the disability unit. Part of their responsibility should also be to inform guest lecturers about students with hearing impairment in their classes and how to accommodate their needs. Although the goal for the

students with disabilities is to be self-advocates in terms of their needs, with a constant change of lecturers and always having to remind new staff, will result in these students becoming 'extravisible', which has the potential to lower their self-esteem.

- Teaching venues should be made 'hearing accessible' with the installation of high-quality audio (including speakers and microphones) as well as induction loop systems.
- The university, as a whole, should adopt the principles of universal learning design to ensure accessibility for all students in the educational environment.
- Regarding assessments, students with disabilities should be given the choice of the assessment being conducted in a separate, quiet venue, with invigilators who are aware of and sensitive to their hearing impairment. The university management should budget for the employ of additional invigilators if the students elect to write their assessments in a separate venue.
- Language modification, especially of assessments, should be implemented. This could be done by language and subject experts working in collaboration with the disability unit staff and the examinations/assessment office.

#### **Recommendations related to theme 5: Coping strategies**

- To reduce the need for these various coping strategies, the university is encouraged to adopt the principles of universal learning design.
- All lecturing staff should attend professional development courses to improve pedagogical accommodation of the communication needs of students with hearing impairment. Lecturers are encouraged to make use of computer-mediated communication, such as email, with students with hearing impairment (Bishop *et al.*, 2000).
- There is also a requirement, as previously mentioned, to provide additional human and technical support, such as audio induction loop systems (which allows for discrete listening and the protection of the right to privacy) and electronic note-taking.
- The current assessment policy of the university should be modified to include a section on accommodating students with disabilities, such as the option to write their assessments in a separate venue and the use of language modification.
- All invigilators under the employ of the university should attend mandatory sensitisation and awareness training regarding supporting the needs of students with hearing impairment (and other impairments) during assessments.
- First-year students with hearing impairment should be encouraged to engage with more senior students with hearing impairment regarding their experiences and the coping strategies that the latter use. This process could be facilitated by the staff from the disability unit

**APPENDIX L: Guidelines for teaching students with hearing impairment in higher education**

**Guidelines for teaching students with hearing impairment  
(using the oral/aural method of communication) at university**

Diane Bell

March 2013

## Contents

1.	<i>INTRODUCTION</i> .....	4
2.	<i>UNDERSTANDING HEARING IMPAIRMENT</i> .....	7
2.1	<b>Types of hearing impairment</b> .....	7
2.1.1	<b>Conductive hearing impairment</b> .....	8
2.1.2	<b>Sensori-neural hearing impairment</b> .....	8
2.1.3	<b>Mixed hearing impairment</b> .....	9
2.2	<b>Degree of hearing impairment</b> .....	9
2.2.1	<b>Mild</b> .....	10
2.2.2	<b>Moderate</b> .....	10
2.2.3	<b>Severe</b> .....	11
2.2.4	<b>Profound</b> .....	11
2.3	<b>Age of onset</b> .....	11
2.3.1	<b>Pre-lingual hearing impairment</b> .....	11
2.3.2	<b>Post-lingual hearing impairment</b> .....	12
2.4	<b>Prevalence of hearing impairment</b> .....	12
3.	<i>COMMUNICATION</i> .....	13
3.1	<b>Communication choices</b> .....	13
3.2	<b>Communication aids</b> .....	14
3.2.1	<b>Hearing instruments</b> .....	14
3.2.2	<b>Lip-reading</b> .....	16
3.3	<b>Human aids to communication – working with a note-taker</b> .....	17
3.3.1	<b>Manual note-taking</b> .....	18
3.3.2	<b>Electronic note-taking</b> .....	18
3.4	<b>Technological aids to communication</b> .....	19
3.4.1	<b>Assistive listening devices</b> .....	20
3.4.2	<b>Sound field systems – induction loops</b> .....	20
3.5	<b>General guidelines when communicating with individuals with hearing impairment</b> .....	21
4.	<i>HEARING IMPAIRMENT AND LANGUAGE</i> .....	22
4.1	<b>The role of language tutors</b> .....	23
4.2	<b>Possible effects relating to language difficulties</b> .....	24
4.3	<b>Guidelines when assessing written work of students with a hearing impairment</b> .....	24
4.4	<b>Language modification explained</b> .....	25

5.	<i>STUDENTS WITH HEARING IMPAIRMENT AT UNIVERSITY</i> .....	26
5.1	<b>Benefits of studying at university for students with hearing impairment</b> .....	26
5.2	<b>Personal characteristics of students with hearing impairment</b> .....	27
5.3	<b>Guiding principles when communicating with students with hearing impairment</b> .....	27
6.	<i>PRACTICAL RECOMMENDATIONS</i> .....	27
6.1	<b>For teaching</b> .....	28
6.2	<b>For field trips</b> .....	30
6.3	<b>For practicals</b> .....	30
6.4	<b>For oral assessments</b> .....	30
6.5	<b>For written assessments</b> .....	31
6.5.1	<b>Timed examinations</b> .....	31
6.6	<b>For students on work/industry or professional placement</b> .....	32
7.	<i>PROFESSIONAL STAFF DEVELOPMENT AND TRAINING</i> .....	32
8.	<i>LEARNING SUPPORT FRAMEWORK FOR STUDENTS WITH HEARING IMPAIRMENT IN HIGHER EDUCATION</i> .....	32
9.	<i>CONCLUSION</i> .....	35

**UNTITLED POEM (by Anonymous)**

Available from <http://www.hearinglink.org/poetry>

*Trying to learn a new language  
It's not very easy to do  
I need your help and assistance  
So I thought I'd explain it to you.*

*Next time you are going to speak to me  
Don't turn your head away  
For only by seeing the words on your lips  
Can I understand what you say.*

*Talk to me more distinctly  
Not too loud and not too fast  
Don't hide lips behind a cup or your hand  
Or keep talking when walking past.*

*When you impatiently say "never mind"  
I shrivel up inside  
For I frantically fought to hear what was said  
You don't know how hard I tried.*

*The tick of a clock, the sound of a bird,  
The sound on the roof of the rain  
Approaching footsteps, a loved one's voice  
What I'd give to hear them again.*

*Will you help me to remember  
Through the picture of a word  
A sound, a melody that once I loved  
And that once I also heard.*

## **1. INTRODUCTION**

This document aims to provide guidance for lecturers who are currently teaching students with hearing impairment, or who may do so in future. If these guidelines are followed, communication will be more effective and students with hearing impairment will have access to their studies on an equal basis with their hearing peers, as far as practically possible. The information will not only allow for a better understanding of some of the difficulties faced by these students but also provides a number of strategies to implement in the teaching environment.

Before focusing on the more practical aspects of accommodating students with hearing impairment in higher education, it is important to understand the legislative and policy framework that drives inclusive education in South Africa. The most significant and relevant laws and policies are outlined, and pertinent excerpts are provided, below.



<p>South African Constitution (Act 108 of 1996, Sections 29 (1) and 9 (2, 3, 4 &amp; 5))</p>	<p>Provides a challenge to all South Africans by requiring that we give all learners the fundamental right to basic education; addressing the imbalances of the past by focusing on the key issues of access, equity and redress.</p> <p>According to the Bill of Rights contained in the Constitution of the Republic of South Africa, 1996 (Act 108 of 1996), everyone has the right to a basic education, including adult basic education and further education, which the State, through reasonable measures, must progressively make available and accessible (South Africa, 1996a).</p>
<p>South African Schools Act of 1996</p>	<p>Promotes the concept of inclusion "... whereas this country requires a new national system for schools which will redress past injustices in educational provision, provide an education of progressively high quality for all learners and in so doing lay a strong foundation for the development of all our people's talents and capabilities, advance the democratic transformation of society, combat racism and sexism and all other forms of unfair discrimination and intolerance, contribute to the eradication of poverty and the economic well-being of society, protect and advance our diverse cultures and languages, uphold the rights of all learners ..." (South Africa, 1996b).</p>
<p>Education White Paper 3 on the Transformation of the Higher Education System (1997)</p>	<p>The concept of student equity in higher education is explicated and the measures to drive the initiative are outlined. The policy states that one of the goals of the transformation process in South Africa is to build a higher education system that "Promote[s] equity of access and fair chances of success to all who are seeking to realise their potential through higher education, while eradicating all forms of unfair discrimination and advancing redress for past inequalities" (SA, DoE, 1997b:14). Equity, as stated in the policy, includes students with disabilities. It goes even further to provide a framework for how the needs of students with disabilities should be responded to by the education system as well as by universities, as individual institutions of higher learning; laying emphasis on the way in which they are structured and organised. The policy also acknowledges that students with disabilities are included as previously disadvantaged members of the population; and hence form part of transformation imperatives; although this is not evident in practice. White Paper 3 therefore argues that the new policy framework must "increase access for ... disabled students and should generate new curricula and flexible models of learning and teaching" (SA, DoE, 1997b:10).</p>
<p>Education White Paper 6 on Special Needs Education: Building an Inclusive Education and Training System (SA, DoE, 2001a)</p>	<p>This policy gave guidelines for the new education system it was going to create in South Africa so that all learners would have equal opportunities to be educated. In this policy, the Department of Education committed itself to:</p> <p>"Promote education for all and foster the development of inclusive and supportive centres of learning that would enable all learners to participate actively in the education process so that they could</p>

	<p>develop and extend their potential and participate as equal members of society.”</p> <p>The primary purpose of this document is the creation of educational opportunities for learners who have not been able to access existing educational provision or have experienced learning difficulties, largely because the education system has failed to “accommodate their learning needs” (SA, DoE, 2001a:6). Students with disabilities are viewed here as being one of the most vulnerable groups, having been victims of marginalisation and inequality. The focus of this paper is to ensure that the South African system is fully inclusive; attaining this through the creation of equal opportunities and the removal of barriers which limit equitable participation (Howell, 2006).</p>
<p>National Plan for Higher Education (2001) (SA, DoE, 2001b)</p>	<p>The main focus of this document is the commitment by government to increase access for non-traditional students to higher education. Students with disabilities are included in this term. This plan holds institutions accountable for implementation and also focuses on the connection between equity of access and equity of outcomes. Simple access being insufficient, the plan alludes to successful graduation of students with disabilities as one of the critical outcomes. Although the plan does not clearly place an emphasis on an integrated and holistic approach to teaching and learning support specifically for students with disabilities, it does discuss academic development as an important equalisation mechanism (Howell, 2006).</p>
<p>United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) which was adopted by the United Nations (UN) in 2006, and ratified by South Africa on the 30 November 2007</p>	<p>The UNCRPD states that disabled people should be guaranteed the right to inclusive education at all levels (primary, secondary and tertiary), without discrimination, and on the basis of equal opportunity (UNICEF, 2008).</p>
<p>Green Paper on Post-School Education and Training (SA, DHET, 2012)</p>	<p>This document highlights the fact that some progress has been made in transforming post-school institutions but that the “system still bears the marks of apartheid” such as “lingering discrimination” and problems with regard to “access, staffing, curriculum, management, student funding, and other forms of student support” (SA, DHET, 2012:x). There is an intention in this document to address ongoing equalities with regard to disability:</p> <p>“The system continues to produce and reproduce gender, class, racial and other inequalities of access to educational opportunities and success. Eliminating all forms of discrimination and inequality and developing a general culture of human rights and democracy are among the key priorities of the DHET” (SA, DHET, 2012:x).</p> <p>A number of recommendations are made: that the varied needs of disabled students should be responded to by individual institutions and the system as a whole which will require the allocation of additional resources; that a national policy on disability which guides education and training institutions in the post-school domain should be developed and as existing data on disability is inadequate and often inaccurate, the DHET intends commissioning</p>

	a disability prevalence study across the post-school education and training sector so as to facilitate better planning at institutional and national levels.
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It is important to note that the implementation of an inclusive education system, at all levels of education, including higher education, is not a choice on the part of educators, but a basic human right for persons with disabilities in South Africa.

### **Terminology and language**

In South Africa, there are two main classifications of hearing impairment, Deaf and hard of hearing (HoH). Deaf (with a capital D) refers to those individuals who subscribe to Deaf culture and make use of South African Sign Language (SASL), and who generally are pre-lingually deaf. People who lose their hearing later in life, or who do not have a profound hearing impairment, are referred to as hard of hearing. This guide will make use of the following language: 'persons/students with hearing impairment or hearing impairment'. This does not classify or label them, but respects them as people first before their disability.

### **NOTE**

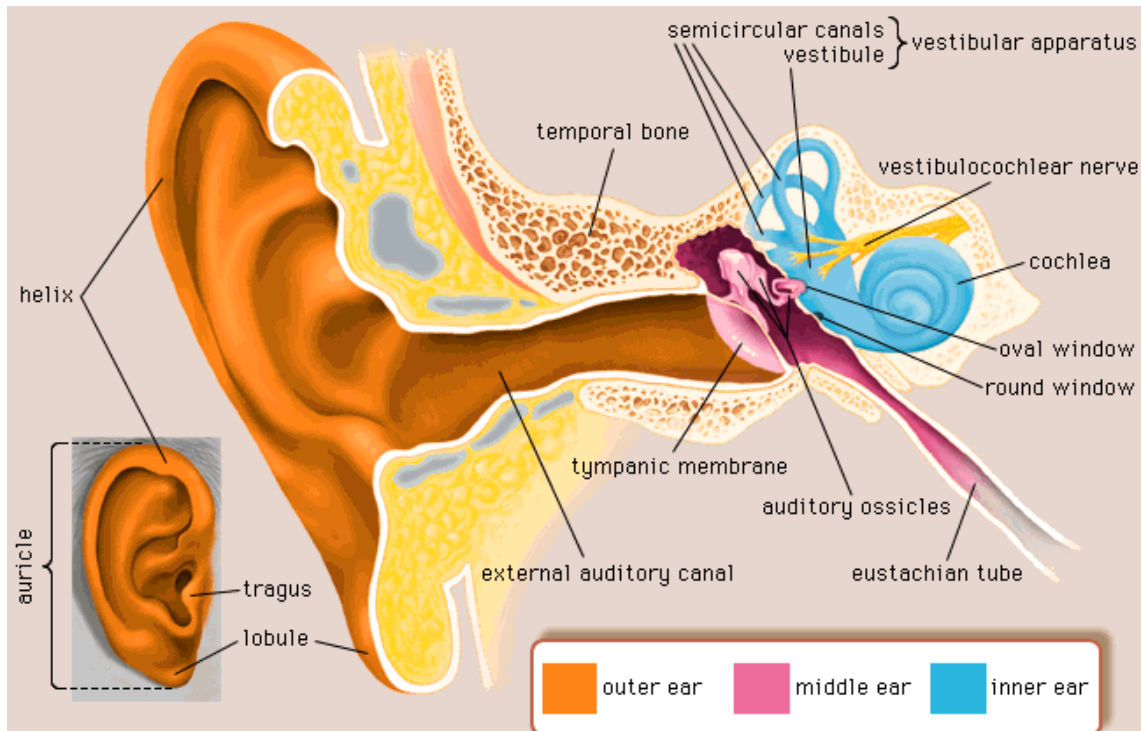
Currently, students with hearing impairment are under-represented and not sufficiently supported in higher education in South Africa. This guide provides information regarding international best practice for supporting students with hearing impairment. Heads of disability units and academics at South African universities should work towards implementing and providing all of the accommodations mentioned below to support students with hearing impairment in higher education holistically.

## **2. UNDERSTANDING HEARING IMPAIRMENT**

Hearing impairment is a complex phenomenon, and the experience of and accommodations required are unique for each individual student. This section will cover the various types and degrees of hearing impairment as well as other factors related to hearing impairment, such as age of onset.

### **2.1 Types of hearing impairment**

Hearing impairment, according to the South African Society of Hearing Aid Acousticians (2009) can be categorised according to the part of the auditory system that is damaged, i.e. outer, middle or inner ear (refer to Figure 1 below). There are three basic types of hearing impairment: conductive hearing impairment, sensori-neural hearing impairment, and mixed hearing impairment. The most common type of hearing impairment is called 'sensori-neural' or 'nerve deafness', where damage to the auditory nerve has occurred.



**Figure 1: Structure of the ear (Encyclopedia Britannica, 1997)**

### 2.1.1 Conductive hearing impairment

A conductive hearing impairment usually results from any type of interference with the transmission of sound from the outer ear canal to the eardrum, through the middle ear cavity and the ossicles (tiny bones) to the inner ear. This type of hearing impairment commonly presents as a reduction in sound level or an inability to hear faint sounds. It can be fluctuating or permanent, and often poses long-term learning risks. Conductive hearing impairments are potentially able to be treated medically or surgically (SAAA, n.d.).

### 2.1.2 Sensori-neural hearing impairment

This type of hearing impairment is also known as 'nerve deafness', and it is mostly caused by damage to the pathway for sound impulses from the hair cells in the cochlea of the inner ear, or to the nerve pathways from the inner ear (retrocochlear) to the brain. Sensori-neural hearing impairment results in an inability to hear faint sounds, which impacts on the ability to hear clearly. It also affects speech understanding. A sensori-neural hearing impairment is permanent and cannot be corrected medically or surgically (SAAA, n.d.). It is the most common type of hearing impairment, accounting for 60–90 per cent of all deafness (RNID, 2007). Cochlear implant technology is currently offered as an alternative to amplification for individuals who meet criteria for cochlear implant candidacy.

### 2.1.3 Mixed hearing impairment

Sometimes a sensori-neural hearing impairment occurs in combination with a conductive hearing impairment. In other words, there may be damage in the inner ear (cochlea) or auditory nerve as well as the outer or middle ear. When this combination presents it is known as a mixed hearing impairment and can range from a mild to profound loss.

Any of the above hearing impairments can also be:

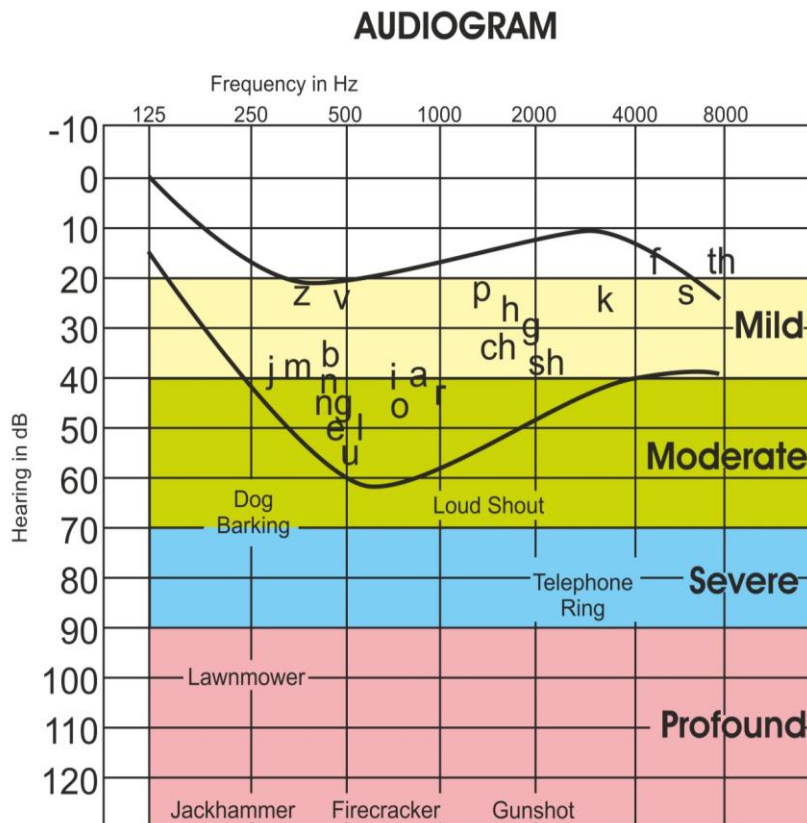
**Bilateral or unilateral:** Bilateral hearing impairment means both ears are affected, while unilateral hearing impairment means only one ear is affected.

**Symmetrical or asymmetrical:** Symmetrical hearing impairment means that the degree and configuration of hearing impairment is the same in both ears. An asymmetrical hearing impairment is one in which the degree and/or configuration of the loss is different for each ear.

**Progressive or a sudden hearing impairment:** Progressive hearing impairment refers to a hearing impairment that becomes increasingly worse over time. A sudden hearing impairment is one that has an acute or rapid onset and therefore occurs quickly, requiring immediate medical attention to determine its cause and treatment.

## 2.2 Degree of hearing impairment

A hearing impairment is described in terms of degree of loss and is measured in decibels. The hearing impairment is plotted on a graph called an audiogram and is reported as a function of frequency or pitch and decibels or intensity (see Figure 2 below). An audiogram is a chart which records the hearing response of each ear from 125 Hz (hertz) to 8000 Hz, which is the range most essential for speech perception. A hearing impairment of less than 25 dB (decibels) (between -10 decibels and +15 or 25 dB), averaged across the frequencies of 500, 1000, 2000 and 4000 Hz (the range of frequencies involved in the perception of speech), is regarded as being within the normal range of hearing. An average hearing impairment of 25 dB or more in both ears is regarded as a significant hearing impairment, and an average hearing impairment of more than 70 dB in both ears can be regarded as deafness (Richardson, 2001).



**Figure 2: An example audiogram indicating degrees of hearing impairment and common sounds at various frequencies**

Although hearing response is unique for each person, the range of hearing impairment can be roughly sub-divided into four main areas.

### 2.2.1 Mild

A loss of 26 dB to 40 dB is considered a mild loss. People with a mild hearing impairment may have difficulty understanding speech, especially in noisy situations and may be thought not to be paying attention. They may or may not wear hearing aids and may not be able to hear soft sounds like leaves rustling or people whispering. The student with this degree of loss is likely to understand most speech at close distances, but may miss the highest frequency sounds (like /f/, /th/, /s/), which are also the softest. Students with a mild hearing impairment often do not realise that they are not hearing well and may misunderstand directions. The learning environment may be stressful as the student must try harder to hear.

### 2.2.2 Moderate

A loss of 41 dB to 55 dB is considered a moderate loss. People with a moderate hearing impairment will probably wear a hearing aid. Without a hearing aid they will most likely have difficulty understanding speech, even in normal conditions. Without amplification the amount of speech missed can be 50 to 70 per cent with a 40 dB loss. With a 50 dB loss, 80 to 90 per cent of speech can be missed. They may be able to use a voice telephone that has an amplifier and/or an

inductive coupler if they wear hearing instruments (hearing aid and/or cochlear implant/s) with the telecoil function.

### **2.2.3 Severe**

A loss of 56 dB to 70 dB is considered a moderate to severe or a moderately severe hearing impairment. Conversation is not usually understandable at two metres without a hearing aid and/or visual clues. A loss of 71 dB to 90 dB is considered a severe hearing impairment, and without amplification, the student may hear loud voices if he or she is standing less than half a metre away, but may not be able to understand speech. People with severe hearing impairment will probably wear some kind of hearing aid but may find it difficult to understand speech – even with the hearing aid. They will often rely on lip-reading, facial expressions and other gestures to follow communication. They may also find it difficult to use a telephone, even with powerful amplification, and may therefore use the SMS function on their cell phone as a primary mode of communication. They probably will not be able to hear sounds such as trucks driving nearby. Some people with a severe hearing impairment may receive a cochlear implant (see Figure 3).

### **2.2.4 Profound**

A loss of 91 dB or more is considered a profound hearing impairment. People with profound hearing impairment may find a hearing aid of very little or no benefit at all and will rely heavily on lip-reading, facial expressions and other gestures to follow communication. They will often not be able to use voice telephones at all and will rely on SMS functionality on their cell phones. They probably will not be able to hear sounds like pneumatic drills or aircrafts flying overhead. Some people with a profound hearing impairment may have received one (unilateral) or two (bilateral) cochlear implants (see Figure 4).

## **2.3 Age of onset**

The age at which hearing impairment occurs is crucial for the acquisition of a spoken language. The older the child at age of diagnosis of hearing impairment, the more likelihood there is of a language delay and other related complications.

### **2.3.1 Pre-lingual hearing impairment**

When a hearing impairment occurs before the acquisition of language, it is known as pre-lingual. This type of hearing loss can either occur through of loss of hearing in early infancy or as a result of various congenital conditions. It impairs a person's ability to attain a spoken or oral language as his or her first language. Individuals either make use of some kind of hearing aid to enhance their residual hearing or have a cochlear implant, bypassing the auditory canal. Others elect to make

use of Sign Language (SASL = South African Sign Language) as their first language and they become part of the Deaf community and embrace Deaf culture.

### 2.3.2 Post-lingual hearing impairment

This refers to a person who loses his or her hearing after acquiring language. Hearing impairment after birth may develop suddenly as a result of viruses, disease and injury, or progressively as a result of a hereditary and idiopathic causes. See Woodcock and Aguayo (2000) for a review of the many causes of hearing impairment and deafness. This type of hearing loss can even manifest as a result of a side-effect of various medications. Usually, the hearing impairment is quite gradual and therefore often goes undetected for a long time. Once diagnosed, individuals often learn to lip-read, wear a hearing aid or have a cochlear implant. This type of deafness is far more common than pre-lingual deafness.

## 2.4 Prevalence of hearing impairment

For a number of reasons, statistics regarding the prevalence of hearing impairment in South Africa are largely inaccurate and usually show less than the actual figures. There are, however, two important statistical publications which I shall mention. Firstly, the estimates of overall crude prevalence rates for hearing impairment across the life span of South Africans, as given by the Deaf Federation of SA (DeafSA), are shown in Table 1 below. These figures indicate a total rate of prevalence of hearing impairment, across all ranges of hearing impairment of 10 per cent.

**Table 1: Estimates of crude prevalence for hearing impairment (%), 2004**

Range of hearing impairment	Prevalence rate (%)
Mild	6
Moderate	3
Severe/profound	1
Total rate hearing impairment	10

Deaf Federation of South Africa (DeafSA) (1997)

Secondly, according to the 2010 General Household Survey (SSA, 2011), the following statistics for hearing impairment were reported: some difficulties with hearing = 778 000, a lot of difficulties with hearing = 178 000; unable to hear = 25 000 out of a total of 981 000.

Furthermore, statistics in South Africa regarding the numbers of students who have disclosed disabilities, and more specifically hearing impairment, are also not readily available due to factors such as differing definitions of disability, misinterpretation of disability codes on university application forms and stigma associated with disclosure of a disability. According to Crous (2004),



from a survey of three universities in South Africa, it was found that fewer than 0,5 per cent of the student population was represented by students with disabilities. A more recent study, involving fifteen of the twenty-three universities in South Africa, reported the following findings: the proportion of students with disabilities as a percentage of the total student population was less than 1 per cent, disability units support, on average, between 21 and 400 students per year, only 17 out of 23 universities have a disability unit, there is a focus on supporting visual and mobility impairments and very few disability units provide services for hearing impairment, cognitive and psychosocial disabilities (FOTIM, 2011).

HEMIS data for the period 2003 to 2010, obtained from the Department of Education indicate the following prevalence of hearing impairment in higher education institutions in South Africa:

	2003	2004	2005	2006	2007	2008	2009	2010
Hearing (total)	155	163	197	245	277	299	302	326

This data reveal that the numbers of students disclosing a hearing impairment increased from 155 in 2003 to 326 in 2010 and, according to various heads of disability units, the number is increasing year on year. If one merges these two data sets, one could expect to find that 10 per cent of the student population in higher education has some degree of hearing impairment.

### 3. COMMUNICATION

Communication choices and communication aids will be discussed in this section.

#### 3.1 Communication choices

When considering the communication needs and choices of people with hearing impairment, they can basically be broken down into two broad categories. The focus of these guidelines is on the first category, namely people who make use of the oral method of communication and who use technology to enhance their hearing. The second relates to persons who are 'culturally' Deaf and who make use of Sign Language.

1. Students with hearing impairment use predominantly English (as the preferred lingua franca at most South African universities, although students may have other language backgrounds) as their spoken language and use hearing instruments (hearing aid/s or cochlear implant/s) and lip-reading (including facial expressions and other non-verbal clues) to receive information. They are likely to use their own voice to communicate. In formal situations such as meetings and training, they may need to use a note-taker.

If the onset of hearing impairment occurred later in a person's life, after the acquisition of spoken or written language, then such person would most likely fall into this category.

However, due to the advances of technology, many people born with a profound hearing impairment are implanted at a young age, and also fall into this category

When people communicates in this way, namely orally (also known as auditory/oral, aural/oral or the oral method), it is often easy to forget that they have a hearing impairment and to assume that he or she can follow everything that is being said. This is not the case, despite the most sophisticated technology, and care must be taken to ensure communication is successful using the guidelines suggested within this document.

2. Some people with hearing impairment may use South African Sign Language (SASL) as their first language. They choose to be referred to as being Deaf, both culturally and linguistically. This communication choice is not part of the ambit of this document.

## **3.2 Communication aids**

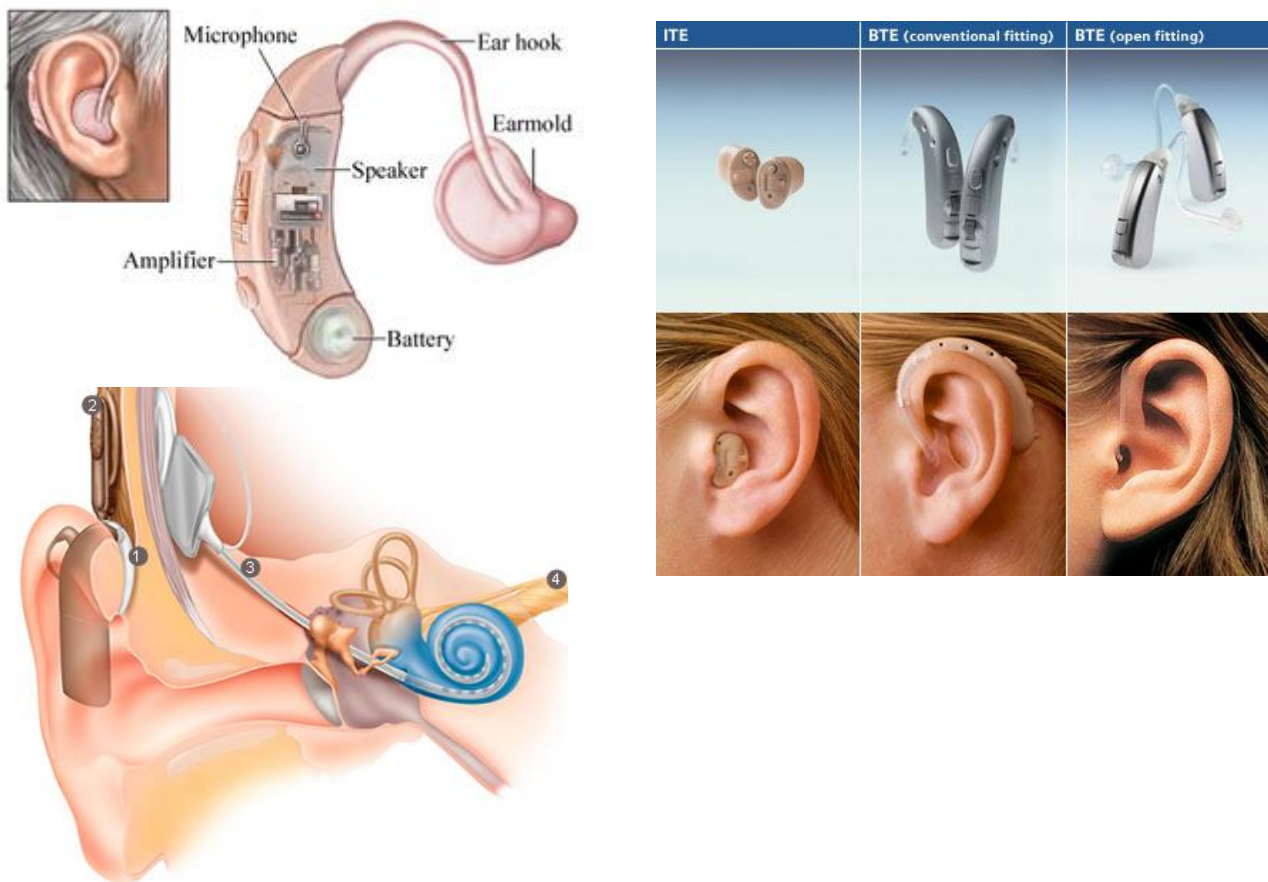
The four main types of communication aids will be discussed, namely hearing instruments, lip-reading, human as well as technological aids.

### **3.2.1 Hearing instruments**

In this section an explanation of hearing aids, cochlear implants, lip-reading as well as human (manual) and electronic note-taking will be discussed.

#### **3.2.1.1 Hearing aids**

A hearing aid is a battery-powered, external electronic device that makes listening easier for people with a hearing impairment by amplifying sound. A hearing aid consists of a microphone, an amplifier and a receiver. The microphone picks up sounds in the acoustic environment and turns them into electronic signals. The amplifier selectively amplifies the acoustic electronic signals. The receiver is a very small speaker that changes the electric signals back to sounds and delivers the sound to the ear. Most hearing aids available today are digital and therefore programmable, with a telecoil function. Types of hearing aids include: in -the-ear (ITE), behind-the-ear (BTE), canal (fit in the ear canal) or bone-conduction (BAHA). Fitting choices are determined by the age of the child, type and degree of hearing impairment, cosmetic concerns, ear anomalies as well as fitting requirements. Hearing aids may be worn either monaurally (one ear) or binaurally (two ears) depending on the amplification needs.



**Figure 3: Hearing aid components and main types of hearing aids (ITE and BTE)**

### 3.2.1.2 Cochlear implants

Persons with a severe to profound sensori-neural hearing impairment and those with a diagnosis of auditory neuropathy may be considered for cochlear implantation. Whereas hearing aids amplify sound, a cochlear implant transforms speech and other sounds into electrical energy that is used to stimulate surviving auditory nerve fibres in the inner ear. Potential recipients are evaluated for candidacy at cochlear implant centres by assessing their auditory acuity, middle ear function, speech perception with a hearing aid, medical history and developmental/cognitive status. A cochlear implant is a surgically implanted device which electrically stimulates the neural fibres of the inner ear or cochlea. A cochlear implant does not restore normal hearing but it is designed to provide sound detection that includes the speech range. Sounds are picked up by a microphone, coded by a speech processor (1) and delivered to the implanted electrode array via a transmitter (2) and a receiver (3) (see Figure 4 below). External parts of a cochlear implant include the speech processor (1), transmitter (2), microphone (1) and power source (1) (batteries or rechargeable battery pack). The internal parts include the electrode array implanted in the cochlea and a receiver (3).



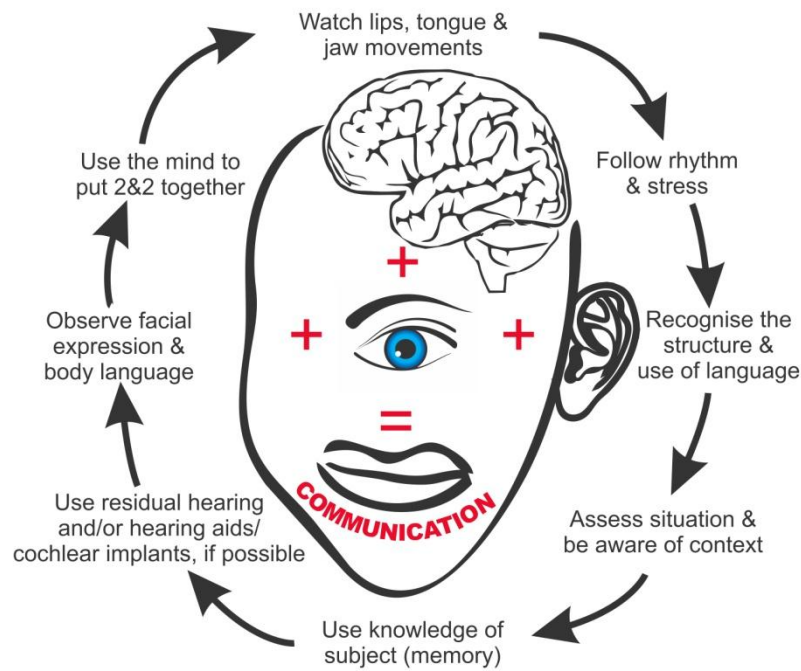
Figure 4: Cochlear implantation and technology components (Nucleus 5) (with permission Cochlear®)

For additional information regarding the advantages and disadvantages of both hearing aids and cochlear implants, see <http://www.auditoryverbaltraining.com/ha-ci.htm>

### 3.2.2 Lip-reading

Lip-reading is the art of understanding speech from observation of the lips, tongue and jaw movement using all available clues such as the topic of conversation, rhythm of speech, facial expression and other non-verbal clues. Therefore, the term 'lip-reading' is slightly misleading. In America, it is referred to as 'speech-reading' which appears to be a more appropriate and explanatory term. For people with severe or profound hearing impairment, whether pre-lingual (before acquisition of speech) or post-lingual (after acquisition of speech), lip-reading is a very important communication strategy.

Figure 5 below depicts the various components involved in the ability to lip-read speakers. The combination of sight, hearing and cognitive function result in communication.



**Figure 5: Components involved in lip-reading (adapted from Hearing Therapy Australia, 2007)**

Some of the limitations of lip-reading include:

- At best, only about 30 to 40 per cent of all words can be seen and therefore lip-read
- Many groups of consonants have the same lip-pattern e.g. m, p, b. It is impossible to distinguish between the words 'meat', 'beat' and 'peat', so this is why the topic and context are so important to the lip-reader.
- Beards and moustaches can obscure the mouth, making lip-reading impossible.
- Unfamiliar accents have unfamiliar lip-patterns and are difficult to lip-read.
- People who speak too quickly or who do not speak clearly are difficult to read.
- Lip-reading requires intense concentration as lip-readers have to watch the speaker at all times, which results in severe fatigue.

### **3.3 Human aids to communication – working with a note-taker**

A note-taker takes a comprehensive set of notes (manually or electronically) on behalf of the student with a hearing impairment, who has been assessed to require the services of a note-taker. The student may be physically unable to take his or her own notes or may be concentrating on lip-reading the lecturer. As far as possible, the note-taker will record all information, including student discussions, asides, jokes or interruptions. His or her task is to record all audible information in the teaching environment. Note-takers require training and orientation for their roles and responsibilities to the student who is hearing impaired and they should subscribe to a Code of Practice (see below). Note-takers may be volunteers, e.g. peers in the same class, more senior students or paraprofessionals, e.g. academic tutors.

### 3.3.1 Manual note-taking

This type refers to another student who hand-writes notes on behalf of the student with hearing impairment. Sometimes they make use of carbon paper so that multiple copies are available, or they photocopy their notes after class and give the copy to the student. This situation is not ideal as often the student with hearing impairment struggles to decipher the note-taker's handwriting, the note-takers cannot write fast enough to catch all that is said and/or the notes that are taken are the note-takers interpretation of the content being presented, and not a verbatim transcription.

### 3.3.2 Electronic note-taking

Electronic note-taking involves the note-taker using a laptop computer and specialist software to record what is said in a lecture. This transcription is shared real-time with the student with the hearing impairment, who is then able to read, almost immediately, what has been said. This system also allows the student with the hearing impairment to be seated at a distance from the note-taker (due to the use of a wireless network), to save the transcription as study notes and to communicate directly with the note-taker via the software, for example, if the student wishes to clarify an issue. The note-taker can respond to the query when there is a gap in the teaching. There are many types of commercially available software for electronic note-taking, but one system that is inexpensive, readily available and easy to use, is known as Polygraf, developed by Masaryk University in the Czech Republic. It consists of a speech-to-text reporter, a laptop on which they type on, an Apple Airport Wi-Fi connection and the student with hearing impairment can read the verbatim text either on an Ipad, an Iphone, a netbook, notebook, or laptop or as a projected image.



**Figure 6: Diagram of the functioning of Polygraf (with permission Masaryk University)**

See <http://www.teiresias.muni.cz/?chapter=8-4> for further information.

Other types of real-time captioning systems such as Communication Access Real-time Translation (CART) are also available. CART is a word-for-word speech-to-text interpreting service for people with a hearing impairment. Unlike computerised note-taking or abbreviation systems, which summarise information for the consumer, CART provides a complete translation of all spoken words and environmental sounds, empowering the individual to decide for him- or herself what information is important to him or her. Section 36.303(b)(1) of the Americans with Disabilities Act specifically recognises CART as an assistive technology that affords effective communication access. See [http://cart-info.org/classroom\\_01.html](http://cart-info.org/classroom_01.html) for further information.

As a lecturer, it is useful to be aware of the following information when working with a note-taker:

- It is helpful for the note-taker to have information in advance, including the topic and the format of delivery, e.g. lecture, seminar, group discussion, etc.
- If possible, it would be helpful if note-takers could be provided with copies of handouts and visual aids such as PowerPoint slides at the start of a class to be able to annotate/reference. This allows the note-taker to annotate the handouts along with the lecturer's accompanying explanation/commentary.
- It is not necessary that the note-taker sit next to the student, but the note-taker will need to sit in a position that is most conducive to him or her for taking notes, i.e. where they can clearly see and hear. The note-taker should be assisted to carry out his or her role effectively by making sure that the room is well lit and that noise levels are minimised.
- The role of the note-taker is not to participate in the class, so their opinions should not be asked and they should not be invited to join in on discussions. Similarly, note-takers should not give advice or offer personal opinions in any teaching session.
- Although, not yet developed in South Africa, note-takers usually work within and follow a code of practice, which means that they work in a confidential and impartial way. An example of a Code of Practice for note-takers can be found at:  
<http://www.notetext.co.uk/userimages/CoEP.pdf>

### **3.4 Technological aids to communication**

In this section an explanation of assistive listening devices, sound field systems and general guidelines when communicating with individuals with hearing impairment will be provided.

### 3.4.1 Assistive listening devices

In addition to personal hearing aids and cochlear implants, students with hearing impairment sometimes benefit from assistive listening devices to supplement and support their personal amplification, particularly in the classroom setting. Teaching environments with hard surfaces, uncarpeted floors, windows without curtains, student and other background noise, and lecturers who are positioned at less than optimal distances from students who have a hearing impairment, comprise a challenging listening environment.

Frequency modulation (FM) systems may reduce some of the difficulties that a student with a hearing impairment faces in the teaching environment by improving the signal-to-noise ratio. Typical systems include a transmitter which the lecturer uses (in his or her pocket or on a belt clip) together with a lapel microphone and the receiver which the student uses. If the student uses a hearing aid or a cochlear implant, then he or she will switch the devices to T-coil and connect the receiver to an induction neck loop to receive the sound input wirelessly. The student may use one of several devices which receive the sound input. This system enables the student to hear the lecturer's voice at a consistent volume regardless of the lecturer's location in the venue. There are many types of FM systems available commercially.



Figure 7: Example of a personal listening system (FM) and its usage in the teaching environment (with permission Bellman & Symfon®)

### 3.4.2 Sound field systems – induction loops

Induction loop systems consist of a copper wire, usually being placed around the perimeter of a venue, e.g. lecture theatre, auditorium, etc. The wire is connected to a loop amplifier (which maintains a steady current in the wire) as well as the existing audio equipment in the venue, such as a public address system (microphone and speakers). The induction loop system magnetically transmits sound to hearing aids and cochlear implants with telecoils (T-coils). This type of system has a number of advantages: as the hearing aid/CI user always carries and maintains his or her



own receiver, the system is a cost-effective solution for many users and the system is totally discreet and requires no maintenance. In venues that are looped, lecturers would be required to ensure that the loop amp is switched on (it usually remains on all the time) and to make use of a microphone (which is the sound input to the loop amp). Figure 8 below depicts the international symbol used to indicate that an induction system is available and that hearing aid and cochlear implant users with telecoil functionality should switch to 'T'. Figure 9 below shows a teaching venue with an induction loop around the perimeter and the speaker making use of a microphone connected to the loop amp. It also depicts what the telecoil looks like inside a hearing instrument.

Note: personal loop systems are also available, e.g. loop cushion (on a chair) with an amplifier connected to a television set.



Figure 8: International telecoil availability symbol

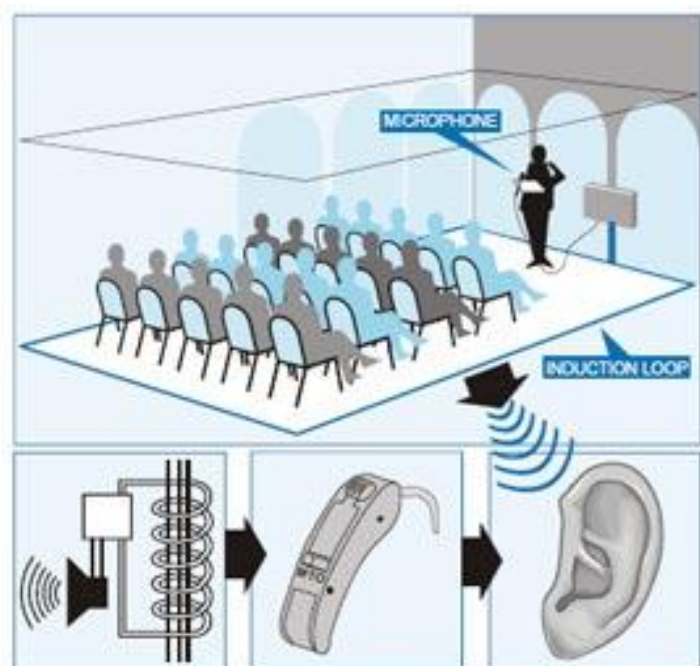


Figure 9: Induction loop system in venue  
(with permission Bo Edin®)

### 3.5 General guidelines when communicating with individuals with hearing impairment

- Attract their attention – make sure that they are looking at you. This could be done by gentle tapping or waving.
- Maintain eye (visual) contact both when you are speaking and when the person with a hearing impairment is speaking.
- Try to keep background noise to a minimum. Hearing aids amplify all sounds, not just your voice. The person with a hearing impairment may not be able to distinguish your voice from all the other sounds around.

- Do not stand in front of a window or bright light. Your face will be silhouetted or shadowed; therefore the person with a hearing impairment will not be able to see your face clearly to read your lips.
- Don't cover your mouth or eat when speaking. Also refrain from chewing gum and/or smoking.
- Speak a little slower than normal but maintain a natural rhythm. Don't exaggerate mouth movements. This will make you more difficult to lip-read.
- Make sure that, if you change the topic of conversation, the person with a hearing impairment is aware of it. Only 30 to 40 per cent of all words can actually be seen on the lips. Another 60 per cent is rather like guesswork, trying to fit in what they think you might be saying about a particular topic using any residual hearing they might have, patterns of the lips and gestures – so it is very important they know the topic of conversation.
- Do not shout. Shouting distorts the face and makes you look angry. Also, other people/students will turn around, drawing unwanted attention to the person with a hearing impairment. Shouting may also 'hurt their ears' due to the excessive loudness once amplified.
- Highlighting key words during speech facilitates its understanding.
- If the person with a hearing impairment does not seem to understand what you are saying, try to re-phrase using different words and sentence structure. Do not simply re-state over and over in the same way. If you do have to write things down, please keep your English/Afrikaans plain and use short, clear sentences.
- If in a group situation, only one person should speak at one time. Change of speakers should also be indicated to the person with a hearing impairment.
- Please do not become impatient or give up on them.
- Refer to an article by Nancy Tye-Murray from the University of Iowa Hospitals for further information regarding Communication Strategies at <http://www.audrehab.org/jara/1994SI/Tye-Murray,%20%20JARA,%20%201994.pdf>
- Also: <http://www.familysupportconnection.org/html/repair.htm>

#### **4. HEARING IMPAIRMENT AND LANGUAGE**

**The main barrier experienced by students with a hearing impairment (choosing oralism) is that of a language barrier.**

We learn spoken languages mainly through hearing them – being exposed to plentiful, meaningful, linguistic interaction during childhood. For those people who are born with a profound hearing impairment, or who are pre-lingually deaf (i.e. the onset of hearing impairment occurred before the age of two), the quality and quantity of this linguistic input is severely reduced and they therefore do not acquire spoken/written languages naturally. (Note: for culturally Deaf persons, the learning of Sign Language is seen as a natural process.)

Because of this, spoken language learning for them may be a very slow, laborious process. All new words/vocabulary may have to be taught individually. When trying to understand the spoken word, they mostly rely on lip-reading and any residual hearing they might have which is amplified through the use of some kind of hearing instrument.

Furthermore, hearing people (without any language impairments) usually learn to read languages they can already speak. Research shows that the reading age of students with a hearing impairment leaving high school is below the national average. Clearly, people with a hearing impairment reaching higher education are functioning at a relatively advanced level but reading can still be a difficult task for some of them. Their vocabulary and general knowledge can be considerably restricted compared with their hearing peers as they will not be able to absorb information in the same way, i.e. through television, radio, classroom chatter, etc. This incidental information often helps to form the opinions and develop the skills necessary for higher education; yet, students with hearing impairment are often denied access to this whole wealth of general knowledge and life experiences. Unfamiliar words, or words which have not been specifically introduced to the student, cannot be lip-read; hence, they have to research not only the technical jargon of their subject but also language that is commonplace amongst their hearing peers.

It is therefore not surprising that hearing impairment can lead to linguistic problems and that the written work of students with a profound hearing impairment may appear lacking in depth and maturity.

Students with a hearing impairment who do experience linguistic problems are entitled to:

- a language tutor who assists the student outside of the classroom with the understanding and production of written text;
- language modification of assessment papers (refer to section 4.3); and
- written work marked for content and context, and not standard written English/Afrikaans (refer to section 4.2).

#### **4.1 The role of language tutors**

Language tutors work with the student, not for the student. A breakdown of their role includes:

- to help students prepare for assignments, i.e. checking comprehension of the task and the understanding of written materials, assisting with planning/organisation of projects, the structure of the essays, etc.;
- to advise students about the presentation of written or spoken work;
- to modify the language of course materials to facilitate access to texts; and
- the language tutor could also be utilised to modify the language of assessments.

## 4.2 Possible effects relating to language difficulties

**\*Note: These effects depend on age of onset and type of hearing impairment, and also vary from individual to individual.**

**\*\*Note: These effects are completely independent of the intellectual ability or potential of the student with a hearing impairment.**

Students with hearing impairment in higher education may exhibit some or all of the following traits:

- written work may appear immature and may lack depth due to limited vocabulary and general knowledge;
- difficulty extracting meaning from text, including lecture notes, assignments and reference materials;
- restricted vocabulary shown by the acceptance of particular words as having a fixed meaning relating only to previous experience;
- difficulty absorbing and using new technical terminology;
- difficulty using everyday words in specific technical contexts;
- misinterpretation of information, especially where there is some ambiguity in terminology or phraseology;
- incorrect verb endings and spelling mistakes in written work;
- syntactical errors such as incorrect word order, words missed out or extra words included;
- difficulty producing discussion elements of an assignment, particularly where these depend on abstract thinking rather than practical observation;
- taking longer to read, understand and absorb information;
- relying heavily on dictionaries, references and tutors to check their understanding;
- taking longer to plan and produce written work than the average student; and
- lower self-confidence regarding their academic work.

## 4.3 Guidelines when assessing written work of students with a hearing impairment

These guidelines are particularly relevant for students with a profound hearing impairment where their first language is in a less developed form as compared with their hearing peers. The guidelines should be seen as a means of awarding marks that reflect the students' understanding of the subject rather than the level of their linguistic skills.

- If possible, mark their written work using two different coloured pens: one for comments about the content (material and use of ideas) and the other for comments concerning spelling and grammar.

- The final mark allocated for the piece of work should be the mark awarded on the basis of the material, argument, analysis, etc. (excluding the grammatical errors).
- Spelling mistakes or poor use of grammar and punctuation should not be marked down. Rather advise the student of such.
- The use of constructive comments about both the factual content and the use of language is encouraged, explaining what is required or what is wrong by using simple language.
- It is important to check the student's level of understanding of the technicalities of language and presentation as there is sometimes conscious knowledge but an inability to use, and at other times there is no conscious basic knowledge. Discuss the level of correction that the student will be able to use and which reference books the student might find useful.
- The marking of errors should be done in the margin against the line where they occur. The aim is to let the student find the errors and correct them.
- The use of a system of symbols which is convenient, such as **sp** for spelling, **ss** for sentence structure, **pn** for punctuation, **gr** for grammar and **lt** for layout (or presentation) is encouraged.
- It may be necessary to discuss the piece of work with the student him- or herself where there is particular ambiguity in the language.

#### **4.4 Language modification explained**

As explained previously, where a student's language has been severely impaired, it may be necessary to modify the language of his or her assessment papers and major assignment briefs. The aim of language modification is to make the English or Afrikaans (lingua franca at universities in South Africa) as clear as possible and to ensure no time is spent trying to decode the language.

When modifying text, only the non-technical carrier language (words which tie language together such as it, 'them', 'and', 'with' etc.) should be changed and, most importantly, the meaning and intent of the question should not be altered. All modifications should be peer-reviewed to ensure that all the modifications are fair and acceptable. All modified papers should also be approved by the head of department before processing.

Modification should always be carried out with a particular student's access to language (lingua franca) in mind; therefore, the same assessment paper may be modified differently for different students.

Generally, language modification involves:

- shortening of long sentences;
- replacing high-level carrier language with lower-level alternatives;
- replacing passive verbs with active verbs;
- removing superfluous language;

- removing ambiguity; and
- re-formatting e.g. using bullets, spacing, etc.

For further information and resources, see

<http://www.batod.org.uk/index.php?id=/articles/resources/training-materials/language-modification>

## **5. STUDENTS WITH HEARING IMPAIRMENT AT UNIVERSITY**

As previously mentioned, students with hearing impairment are under-represented in higher education in South Africa and are also under-supported. Additionally, according to literature, the students who are successful in being admitted into higher education face a high rate of attrition and generally poor educational outcomes. One study, in particular, reported that almost 75 per cent of students with hearing impairment do not graduate from postsecondary educational institutions (colleges and universities). It is for these reasons and the fact that students with hearing impairment benefit significantly from studying in higher education, that these guidelines should be followed. Following, some of the benefits of studying at university and characteristics of students with hearing impairment will be discussed. Some guiding principles regarding communicating with students with hearing impairment will also be presented.

### **5.1 Benefits of studying at university for students with hearing impairment**

Students with hearing impairment, provided with the correct support and access to communication, may be able to benefit significantly from attending university, graduating and transitioning into employment.

Salend and Garrick's (1999) review of the literature on inclusion concluded that benefits of inclusion for students with disabilities may include gains in academic achievement, increased peer acceptance and richer friendship networks, higher self-esteem, avoidance of stigma and possible lifetime benefits, such as higher salaries and independent living.

Other benefits may also include:

- improved communication skills;
- gains in academic achievement and therefore overall development;
- enhanced self-esteem;
- learning new skills, such as self-advocacy;
- gaining experience in interacting with hearing individuals and building friendships, and therefore improved intra-personal skills; and
- enhanced opportunities for employment and career-advancement, leading to an improved socio-economic status.

It is, however, undisputed that students with hearing impairment studies will be faced with many challenges during their higher education, some of which may be minimised by the provision of appropriate accommodations to ensure communication access. The main barriers are those of communication and language.

## **5.2 Personal characteristics of students with hearing impairment**

Without attempting to be disrespectful or stereotyping students with hearing impairment, literature shows that some exhibit one or more of the following characteristics, which may hamper their educational attainment, and which may require intervention:

- lack of self-advocacy skills (ability to request/negotiate support provisioning);
- low self-esteem;
- limited network of friends – isolation;
- unclear self-identity (Deaf or hearing cultural identity);
- over-motivated to 'prove' academic ability, often to their detriment;
- lower levels of well-being (than their hearing counterparts); and
- poor study habits and time-management skills.

## **5.3 Guiding principles when communicating with students with hearing impairment**

- Approach the student directly and not through a hearing friend or note-taker.
- Get their attention (e.g. waving, tapping gently on the shoulder or moving into their line of vision).
- Face the student, speak normally and talk to the student directly.
- The student may ask you to:
  - write down information;
  - repeat spoken information;
  - type information on a computer;
  - use the SMS facility on a cell phone; or
  - ask a note-taker to write down what you say.
- Be patient and allow extra time to communicate.
- Remember that a student with a hearing impairment cannot do two visual tasks at the same time, e.g. writing and lip-reading.

## **6. PRACTICAL RECOMMENDATIONS**

Students with a profound hearing impairment rely on being able to receive information visually (in varying degrees), therefore the following suggestions are made to facilitate communication in various contexts.

## 6.1 For teaching

- All requirements for passing assessment must be clearly defined per subject. It is preferable that this information is provided in written format.
- Lecture notes, handouts and copies of electronic presentations should be provided well in advance to students with hearing impairment to allow them to pre-read and prepare for class, e.g. learn new vocabulary, terminology, etc.
- Make every attempt to face the class at all times to allow for lip-reading.
- Avoid writing on the board and talking at the same time.
- Try not to walk around the classroom whilst talking as this makes it difficult for the student to maintain visual contact, making lip-reading impossible.
- Try not to stand with a light or window behind you as this can cast shadows which will make it more difficult to lip-read.
- In addition to speech, it is useful to make use of all available means of expression (facial expressions, gestures, etc.)
- Notify students with hearing impairment of any important sound stimuli, e.g. fire alarm for fire drill, etc.
- The use of visual aids to illustrate the presented topic would be most helpful.
- After writing something on the board, or showing a slide with information which the students need to write down, catch the attention of the student with hearing impairment to re-establish eye contact before continuing with the lecture.
- If you have asked the class to read a piece of text, please wait until the student with a hearing impairment has finished before continuing to speak – they are unable to read and lip-read at the same time.
- Handouts are extremely important to students with hearing impairment. These, together with hard or electronic copies of overhead transparencies (OHTs) or PowerPoint slides, should be given to the student via email or posted on an electronic learner management system (such as BlackBoard) at least 24 hours before the lecture wherever possible to enable these students to prepare beforehand, e.g. learn new vocabulary, terminology, etc. A copy of the handouts and OHTs or slides should be given to the note-taker at the start of the lecture to facilitate annotation and referencing of the slides. Please remember to use plain language.
- Try to give glossaries of terminology and write new terms on the board wherever possible.
- Avoid idioms and jokes or play on words as these will usually be lost on students with hearing impairment and they will understandably be curious what their peers are laughing at, which make them feel embarrassed.
- Try to structure teaching sessions clearly. Rapid changes of topic will defeat most lip-readers. If you change the topic of conversation, make sure that the student is aware of it. Only 30–40 per cent of all words can actually be seen on the lips. The student will be using contextual



clues relating to the topic whilst making use of any residual hearing he or she might have together with lip-reading to access the message.

- Try to be explicit at all times. When describing diagrams or graphs, etc. do not use 'this', 'that', 'here', 'there' – the support worker, e.g. note-taker, will not know what is meant.
- Allow more time to make communication effective. Note-takers work, by necessity, several seconds behind the speaker. This means that a student with hearing impairment often 'sees' a question start as hearing students hear it end. As a result, it can be very difficult for a student with a hearing impairment to fully participate on an even basis with their hearing peers. A lecturer, when demonstrating experiments, etc., should be aware of this time delay and should allow the student to actually see the activity and grasp it before moving on.
- Where a student consistently struggles to grasp a particular concept, after consulting with an academic tutor, it is advisable for an individual consultation with the lecturer.
- The use of assistive devices in the teaching environment such as FM systems is encouraged, where a lecturer would be required to use a transmitter, sometimes with a lapel microphone.
- The presence of note-takers in the teaching environment should not be opposed.
- Hearing peers should be encouraged to be respectful of the rights and needs of students with hearing impairment such as keeping preferential seats open in the front of the class.
- Group discussions are notoriously difficult for students with hearing impairment as people often speak over one another. The optimum size of a group is between 6 and 10. If a group is bigger than this, it is unlikely that people will be near enough to lip-read, and following contributions to discussions becomes more complicated. If students with hearing impairment are not given the opportunity to locate the speaker, they will miss some or all of the discussion and will therefore either not contribute or be very reluctant to do so for fear of repeating previously voiced comments. Try to control group situations allowing one person to speak at a time (they should raise their hand before speaking) and allow time for contributions from students with hearing impairment. If the student is using a loop system in the venue, please remember that all contributors to the discussion will need to speak into the microphone. Ensure that this is known to the group before the discussion starts.
- Questions and contributions from elsewhere in the room may not be heard, so it is helpful to repeat the question before going on to answer it to facilitate communication.
- If the lecturer plans to show a video in class, he or she should either ensure that the video has subtitles, or the video will have to be summarised before screening. The video summaries should be given to the student at least a week in advance. Alternatively, a transcript of the video should be found online at one of the following free transcript websites:
  - <http://www.dailyscript.com>
  - <http://www.script-o-rama.com/table.shtml>
  - <http://www.simplyscripts.com>

- <http://BestMovieScriptsForFree.com>
- <http://www.MovieScriptSource.com>
- <http://www.SimplyScripts.com>
- <http://www.WeeklyScripts.com>
- <http://www.Twiztv.com/scripts/>

Note: This list is not exhaustive – Google can be used to search for additional websites.

- Changes to time tables means changes to support requirements for students with hearing impairment. It is usually the student's responsibility to book the support they need, e.g. note-takers. Support is booked at the start of each semester for the duration of the semester. If there is to be a room change or cancellation of class (as examples), the student with hearing impairment needs to be informed as early as possible so that he or she can tell the co-ordinator at the disability unit, who can then try to accommodate these changes.

## **6.2 For field trips**

- Special provision may have to be made for students on field trips. A student who copes well with lip-reading in a lecture theatre may be quite unable to manage without further support when on a windy beach or in a noisy factory.
- Be flexible and talk through the possible options and solutions with the student well in advance to avoid problems.
- It may be necessary to liaise with staff members from the disability unit also.

## **6.3 For practicals**

- Try not to stand behind the student when he or she is working – they are not able to watch the work and lip-read the lecturer at the same time.
- When teaching points arise during the session as a result of supervising the work of other students, remember to attract the attention of the student with hearing impairment before speaking.
- Lecturers should make sure during demonstrations the student with hearing impairment can clearly see what they are saying and doing.

## **6.4 For oral assessments**

Also see section 4.2.

- Students with hearing impairment are often required to give oral presentations as part of their course and this should be encouraged, except in exceptional cases where a student's well-being might be adversely affected.

- Generally, their oral presentations should be assessed in a similar manner to their hearing peers taking into account their language level (refer to 4.2). If written assessments are marked for content and context only and not for standard written English/Afrikaans, then the student should not be penalised for any grammatical or spelling errors contained in handouts or slides.
- Some students may not have a clear voice. Their voice may be monotonal and lack expression and the student may feel very embarrassed or lack confidence because of this.
- Depending on the type of hearing impairment the student has, he or she might or might not be able to hear his or her own voice and this may result in a voice that is either too loud or too soft.

## **6.5 For written assessments**

The overall aim is to make assessments equitable for students with hearing impairment. This, however, does not mean lowering the standard expected from these students. The work of the student should still be marked according to the specified assessment criteria and the piece of work should still reflect the cognitive skills and critical thinking expected of all undergraduate students.

The adoption, however, of more innovative assessment strategies may assist to reveal the actual intellectual ability rather than recourse to the more traditional 'essay' type questions and end-of-term/semester examinations, which serve to highlight the linguistic disability and which often accompanies the students' hearing impairment.

Students with hearing impairment are often eligible for additional arrangements during assessment/examination periods. These arrangements may include:

### **6.5.1 Timed examinations**

- Extra reading time (usually 10 to 15 minutes per hour).
- Individual examination/assessment strategy designed specifically to meet the needs of the student whilst maintaining academic standards (as explained above).
- The use of a separate venue to facilitate the abovementioned.
- Modified examination/assessment paper written in a language more appropriate to the student's needs. Refer to 4.3 above. Alternatively, the lecturer could ensure that the paper is written in plain English/Afrikaans.
- Long essay-type examination questions could be replaced by shorter answer questions.

## **6.6 For students on work/industry or professional placement**

- Staff members from the disability unit should work closely with students with hearing impairment, faculty placement staff and placement providers (employer) to ensure that a student's placement experience is both beneficial and positive.
- The placement provider (employer) should be sensitised to the needs of the student and should make every effort to reasonably accommodate him or her. There may be a need in the work environment for communication support, equipment solutions and/or sensitisation training for staff.
- The university does, however, have a responsibility to try to ensure that no student is placed in an environment where he or she is likely to experience discrimination.

## **7. PROFESSIONAL STAFF DEVELOPMENT AND TRAINING**

Orientation and continuing education of direct (e.g. lecturers) and support staff (e.g. disability unit) serving students with hearing impairment is necessary to ensure successful educational experiences for these students in higher education and to stay abreast of the latest developments. This training could include topics such as:

- instructional strategies;
- communication methodologies;
- amplification needs;
- assistive technologies; and
- assessment.

## **8. LEARNING SUPPORT FRAMEWORK FOR STUDENTS WITH HEARING IMPAIRMENT IN HIGHER EDUCATION**

One of the main aims of my PhD research study entitled 'Investigating teaching and learning support for students with hearing impairment at a university in the Western Cape' was to develop an academic learning support framework for these students which could be implemented at higher education institutions. Using my personal experience with supporting learners with hearing impairment, the findings and recommendations from this study, the review of the literature regarding best practice for supporting students with hearing impairment in higher education as well as Bronfenbrenner's bio-ecological systems theory, I conceptualised the learning support framework depicted in Figure 10.

The student with hearing impairment is most important and is therefore placed in the central position. At the top of the framework, one should note the potential factors that impact on the language, communication and learning outcomes of the students such as type and degree of

hearing impairment, as well as age of onset. Their communication choice, namely the aural/oral method is also important as it impacts on their self-identity. Surrounding the student with hearing impairment (in the centre) are six significant areas of interaction at university in which the communication needs of the students should be considered, with the necessary accommodations being implemented. These six areas are: teaching and learning, practicals, assessment, residence accommodation, field trips and external placement.

On the outskirts of these six areas, the role of the disability unit is indicated, supporting both the student, the academics as well as liaising with the centre for academic development and companies (or other external role players) with regard to placement or employment. The role of the disability unit to ensure that registration and orientation are fully accessible is also indicated. Other areas of importance are also shown, such as the need for government and university funding, the supportive role that faculties need to play, the importance of a conducive social environment and an accessible physical environment. Paramount is the university culture and commitment towards making the environment inclusive and accessible for all. Finally, the role of communication technologies is indicated, such as the provision of electronic note-takers and induction loop systems.

The aim of this learning support framework is the provision of a holistic approach to meeting the communication and other accessibility needs of students with hearing impairment, within the university and other educational environments. It is hoped that this framework will assist staff from the disability unit, lecturers, university management and other role players to improve the academic support for students with hearing impairment, hopefully leading to less barriers being experienced, a reduced need for personal (and other) coping strategies, as well as improved overall educational outcomes.

# LEARNING SUPPORT FRAMEWORK FOR STUDENTS WITH HEARING IMPAIRMENT AT UNIVERSITY

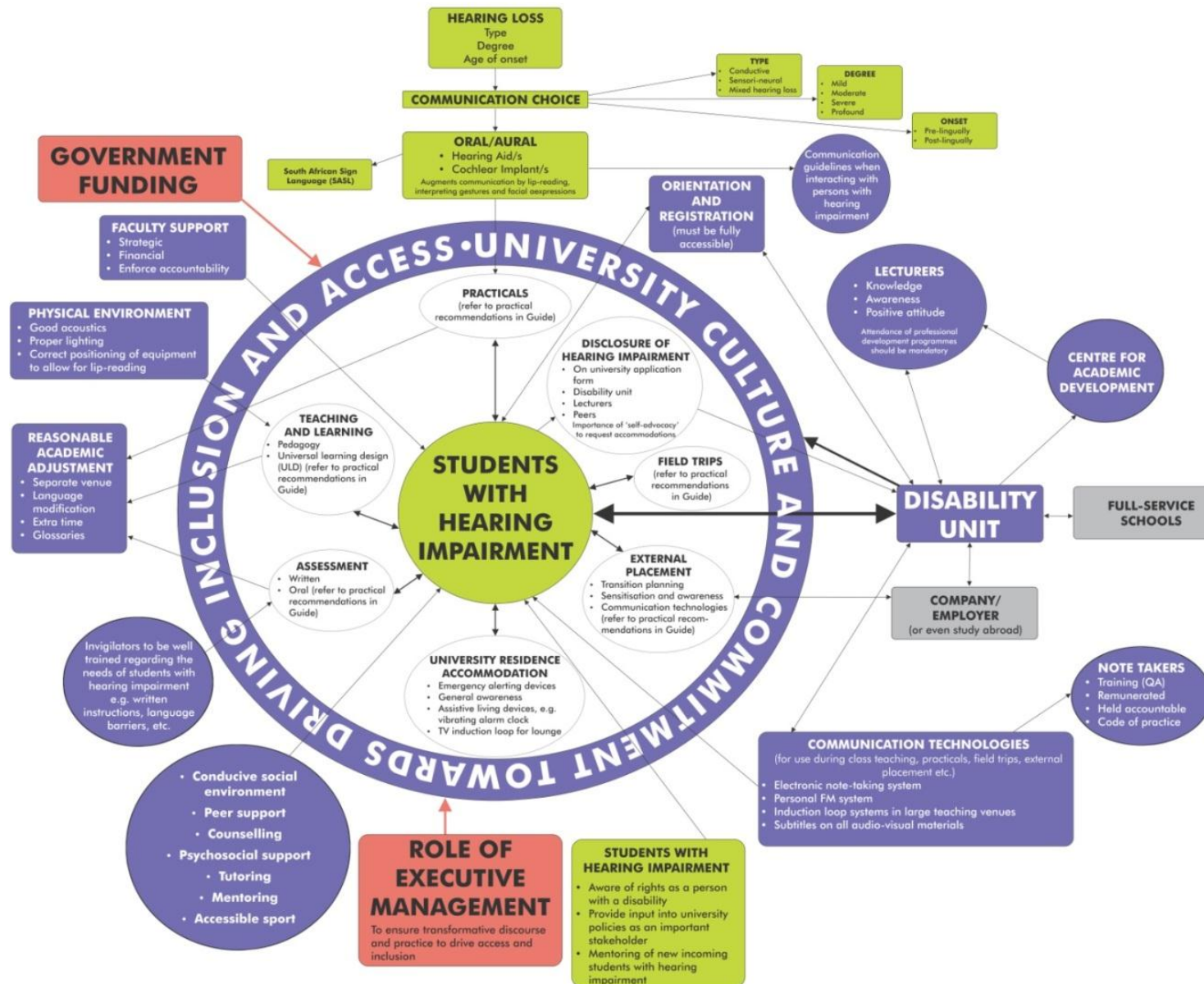


Figure 10: Learning support framework for students with hearing impairment in higher education

## 9. CONCLUSION

Every young South African, irrespective of race, gender, culture, creed or disability has the right to pursue a study career in higher education. With the increasing access to university for students with hearing impairments, lecturers are faced with new and unique challenges in attempting to 'level the academic playing field'. The needs of students with hearing impairment vary considerably, depending on factors such as type of hearing impairment, severity of hearing impairment, age of onset and use of assistive devices and other communication aids. What is imperative is that they receive equal access to information and communication – the same as their hearing peers. This guide has attempted to contextualise inclusive education, explain hearing impairment and related technologies, and most importantly to provide teaching strategies to facilitate communication in accessible learning environments.

### NOTE:

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1. Guidelines for working with deaf students in the teaching environment. Sheffield Hallam University (SHU: Disabled Student Support, n.d.) (permission received electronically 9 July 2012).
2. Teaching strategies to use with deaf students: advice for lecturers in higher education. University of Central Lancashire (UCLAN, n.d.) (permission received electronically 9 July 2012).

Furthermore, heads of disability units, other support personnel, academics and administrators at universities are encouraged to make use of the self-assessment tool: "Deaf students in higher education – How inclusive are you?" available online from:

[http://www.staffs.ac.uk/assets/Deaf%20Students%20in%20Higher%20Education%20How%20Inclusive%20Are%20You-RNID\\_tcm44-33425.pdf](http://www.staffs.ac.uk/assets/Deaf%20Students%20in%20Higher%20Education%20How%20Inclusive%20Are%20You-RNID_tcm44-33425.pdf) .