

**SIGN BILINGUAL EDUCATION PRACTICE AS A STRATEGY FOR INCLUSION OF
DEAF CHILDREN IN ZIMBABWE**

By

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DECLARATION

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I declare that '**SIGN BILINGUAL EDUCATION PRACTICE AS A STRATEGY FOR INCLUSION OF DEAF CHILDREN IN ZIMBABWE**' is my own original work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.



SIGNATURE

(Mr. P. Sibanda)

November 2017

DATE

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DEDICATION

To my mother Maria Sibanda, wife Grace Sibanda, my late brother Timothy Sibanda and all my sons and daughters.

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ABSTRACT

Literature indicates that inclusion of deaf children in mainstream schools is a complex process and that it has eluded many deaf practitioners and education systems for a very long time. New research is, however, pointing to the potential for sign bilingual education as a viable strategy for improving inclusivity of deaf children in mainstream settings. The purpose of the current study was, therefore, to interrogate how sign bilingual education was used as a strategy for inclusion of deaf children in Zimbabwe. The study was premised on Cummins Linguistic Interdependence theory and adopted the mixed methods paradigm which is informed by the philosophy of pragmatism. The sequential explanatory design was utilized and participants were selected using random sampling for the quantitative phase and purposive sampling for the qualitative phase. Questionnaires, face-to-face and focus group interviews (FGIs) were used to elicit data from participants. These data were presented on SPSS generated graphs and analysed using frequency counts, percentages and inferential statistics based on the analysis of Spearman's Rank Order Correlation Coefficient at 5% level of significance ($p=0.005$). Consequently, qualitative data were presented as summaries and direct quotes and analysed using thematic and content analyses. The results revealed that the conception, hence the practice of sign bilingual was limited and had challenges, but that it had the greatest potential benefits for inclusion of deaf children in mainstream schools in Zimbabwe. On these bases, the study recommended training of teachers and parents as well as staff development of the teachers and school administrators. The study also recommended adoption of best practices such as early exposure, co-teaching, co-enrolment, multi-stakeholder participation, turning special schools into resource centers for sign bilingual education and inclusion and embracing ICT. A further recommendation pointed to review of policy in line with best practices. Ultimately, the study proposed a framework for sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe.

Key Words: Sign bilingual education, sign bilingualism, strategy, inclusion, deaf children, Deaf culture, Sign Language, co-teaching, co-enrolment, bimodal bilingual education, bilingual bicultural education

TABLE OF CONTENTS

DECLARATION	i
DEDICATION.....	ii
ACKNOWLEDGEMENTS.....	iii
ABSTRACT.....	iv
LIST OF ABBREVIATIONS	xii
LIST OF FIGURES AND TABLES	xiv
LIST OF APPENDICES	xv
CHAPTER ONE	1
THE STUDY AND ITS SETTING	1
1.1 INTRODUCTION	1
1.2 BACKGROUND TO THE STUDY.....	1
1.3 STATEMENT OF THE PROBLEM	9
1.4 MOTIVATION FOR THE STUDY	10
1.5 RESEARCH QUESTION	11
1.5.1 Sub-questions.....	12
1.6.1 Aim	12
1.6.2 Objectives.....	12
1.7 SIGNIFICANCE OF THE STUDY	13
1.8 LITERATURE REVIEW	13
1.8.1 Exploring the Conception of Sign Bilingual Education as a Strategy for Inclusion.....	14
1.8.2 Rationale for Sign Bilingual Education as a Strategy for Inclusion.....	15
1.8.3 International Best Practices of Sign Bilingual Education	18
1.8.4 The Theoretical Framework of Sign Bilingual Education as a Strategy for Inclusion.....	20
1.8.5 RESEARCH METHODOLOGY AND DESIGN.....	24
1.8.5.1 The Research Paradigm.....	24

1.8.5.2	Research Design	26
1.8.5.3	Population and Sample	26
1.8.5.4	Instrumentation	27
1.8.5.5	Data Collection Procedures, Presentation and Analysis	27
1.9	VALIDITY, TRUSTWORTHINESS AND RELIABILITY	28
1.10	ETHICAL CONSIDERATIONS	29
1.11	LIMITATIONS OF THE STUDY	29
1.11.1	Strategies for Overcoming the Limitations	30
1.12	DELIMITATIONS OF THE STUDY	31
1.13	DEFINITION OF KEY TERMS	31
1.14	PRELIMINARY CHAPTER OUTLINE	33
1.15	CHAPTER SUMMARY	35
	CHAPTER TWO	36
	FOUNDATIONS AND INTERNATIONAL PERSPECTIVES OF SIGN BILINGUAL	36
	EDUCATION AS A STRATEGY FOR INCLUSION	36
2.1	INTRODUCTION	36
2.2	HISTORY AND EVOLUTION OF SIGN BILINGUAL EDUCATION	36
2.3	CONCEPTUALISATION OF SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION	40
2.4	THE PHILOSOPHY OF SIGN BILINGUALISM/ BILINGUAL-BICULTURALISM	44
2.5	THE ROLE OF SIGN LANGUAGE IN SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION	46
2.6	THE ROLE OF SPEECH IN SIGN BILINGUAL EDUCATION	50
2.7	THE CONTEXT OF THE PATRIMONY OF DEAFNESS IN SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION	51
2.8	THE PHILOSOPHY OF INCLUSION	53
2.8.1	The Context of Sign Bilingual Education within the Philosophy of Inclusion	56

2.9	RATIONALE FOR AND JUSTIFICATION OF SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION	61
2.9.1	Responding to the Child’s individual Needs and Interests	63
2.9.2	Social and Cultural Acceptance.....	64
2.9.3	Language and Communication Development.....	66
2.9.4	Curriculum Accessibility and Responsiveness to the Dynamics in Deaf Pedagogy.....	69
2.9.5	Critical Review of the Rationale for and Justification of Sign Bilingual Education.....	70
2.10	INTERNATIONAL PERSPECTIVES OF SIGN BILINGUAL EDUCATION	72
2.10.1	Sign Bilingual Education in Sweden	73
2.10.2	Sign Bilingual Education in Norway.....	76
2.10.3	Sign Bilingual Education in Denmark	78
2.10.4	Sign Bilingual Education in the United Kingdom (UK).....	79
2.10.5	Sign Bilingual Education in the USA	83
2.10.6	Sign Bilingual Education in Africa.....	86
2.10.6.1	Sign Bilingual Education in West Africa	87
2.10.6.2	Sign Bilingual Education in East Africa	89
2.10.6.3	Sign Bilingual Education in Southern Africa	94
2.11	INTERNATIONAL BEST PRACTICES OF SIGN BILINGUAL EDUCATION.....	102
2.11.1	Embracing Hearing Technologies.....	102
2.11.2	Training of Staff and Parents.....	103
2.11.3	Use of Deaf Teachers and Deaf Adults as Models	105
2.11.4	Use of Mixed and Blended Methods	106
2.11.5	Policy Guidelines that Support Sign Bilinguality	108
2.12	CHALLENGES TO THE PRACTICE OF SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION OF DEAF CHILDREN	109
2.13	CHAPTER SUMMARY	111
	CHAPTER THREE	113

THEORETICAL FRAMEWORK AND METHODS FOR THE PRACTICE OF SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION OF DEAF CHILDREN	113
3.1 INTRODUCTION	113
3.2 CONTEXT OF SIGN BILINGUAL EDUCATION WITHIN THE SOCIAL MODEL OF DISABILITY.....	113
3.3 CONTEXTUALISILING SIGN BILINGUAL EDUCATION WITHIN VYGOTSKY'S SOCIO-CULTURAL THEORY.....	115
3.4 THE CONTEXT OF SIGN BILINGUAL EDUCATION WITHIN CUMMINS'S LINGUISTIC INTERDEPENDENCE THEORY	117
3.4.1 Critique of the Applicability of Cummins's Theory to Sign Bilingual Education.....	121
3.4.2 Challenging the Critique of the Applicability of Cummins's Theory to Sign Bilingual Education	123
3.5 MODELS FOR SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION	125
3.5.1 Additive Sign Bilingual Models.....	126
3.5.1.1 Maintenance Sign Bilingual Education Models.....	127
3.5.1.2 Enrichment, Two-Way or Developmental Sign Bilingual Model (The USA Model).....	128
3.5.1.3 Immersion Sign Bilingual Model (The Canadian Model).....	128
3.5.1.4 Heritage Sign Bilingual Models	129
3.6 ORTHOPEDAGOGICAL APPROACHES TO SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION	130
3.6.1 Language Separation.....	131
3.6.2 Concurrent use of Languages in Sign Bilingual Education	132
3.7 METHODS OF PRACTISING SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION .	134
3.7.1 Code –Switching in Sign Bilingual Education	135
3.7.2 Translanguaging in Sign Bilingual Education.....	140
3.7.3 Sign Language Interpretation.....	144
3.7.3.1 Critiquing the Use of Sign Language Interpretation.....	147
3.7.4 Transliteration in Sign Bilingual Education	150
3.7.5 Sign Language Translation in Sign Bilingual Education	151

3.7.5.1	Critiquing the Use of Sign Language Translation	152
3.7.5.2	ICT Based Sign Language Translation	153
3.8	CHAPTER SUMMARY	155
	CHAPTER FOUR	156
	RESEARCH METHODOLOGY, DESIGN AND DATA COLLECTION	156
4.1	INTRODUCTION	156
4.2	RESEARCH PHILOSOPHY	156
4.2.1	Justification of Pragmatism.....	157
4.2.2	Limitations of Pragmatism	158
4.3	THE RESEARCH PARADIGM	158
4.3.1	Justification of the Mixed Methods Research Paradigm	161
4.3.2	Limitations of the Mixed Methods Research Paradigm.....	162
4.4	THE RESEARCH DESIGN	163
4.4.1	Justification of the Sequential Explanatory Mixed Methods Design	164
4.4.2	Limitations of the Sequential Explanatory Mixed Methods Design.....	164
4.5	POPULATION	165
4.6	SAMPLE	165
4.6.1	Sampling Strategies.....	166
4.7	INSTRUMENTATION	168
4.7.1	Questionnaire	168
4.7.2	Personal Face-to-Face Interview.....	170
4.7.3	Focus Group Interview	171
4.8	PILOT STUDY.....	172
4.9	VALIDITY AND TRUSTWORTHINESS	172
4.10	RELIABILITY.....	174
4.11	DATA COLLECTION PROCEDURES	174

4.12	DATA ANALYSIS METHODS	176
4.13	ETHICAL CONSIDERATIONS	177
4.13.1	Informed Consent	177
4.13.2	Confidentiality and Anonymity	178
4.13.3	Beneficence and Non-maleficence	179
4.14	CHAPTER SUMMARY	179
	RESULTS AND DISCUSSION.....	180
5.1	INTRODUCTION.....	180
5.2	SECTION A: QUANTITATIVE RESULTS	180
5.2.1:	Demographic Data for Teachers (n=100).....	181
5.2.2:	Demographic Data for Administrators (n=29)	183
5.2.3	How is sign bilingual education conceived as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?	185
5.2.4	What methods are used to practice sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?	187
5.2.5	Why is sign bilingual education practised as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?	191
5.2.6	What challenges are faced in practicing sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?	195
5.3	SECTION B: QUALITATIVE RESULTS	198
5.3.1	How is sign bilingual education conceived as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?	198
5.3.2	Which methods are used to practice sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?	200
5.3.3	Why is sign bilingual education practiced as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?	202
5.3.4	What challenges are faced in practicing sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?	203
5.4	INTEGRATED RESULTS.....	207

5.5	CHAPTER SUMMARY	209
	CHAPTER SIX.....	210
	SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	210
6.1	INTRODUCTION	210
6.2	SUMMARY	210
6.3	CONCLUSIONS.....	211
6.4	RECOMMENDATIONS.....	213
6.4.1	Recommendations for Training and Staff Development	214
6.4.2	Recommendations for Practice.....	214
6.4.3	Recommendations for Policy Review.....	215
6.4.4	Recommendation for Further Research	215
6.4.5	Recommendation for a Sign Bilingual Education Framework	216
6.5	LIMITATIONS OF THE STUDY	218
6.6	FINAL REMARKS	220
6.7	CHAPTER SUMMARY	220
	References	221
	Appendices	

LIST OF ABBREVIATIONS

ANPPCAN:	African Network for Prevention and Protection of Child Abuse and Neglect
ASL:	American Sign Language
BDA:	British Deaf Association
BICS:	Basic Interpersonal Communication Skills
BoSL:	Botswana Sign Language
BSL:	British Sign Language
CALP:	Cognitive Academic Language Proficiency
CI:	Cochlear Implant
CRDP:	Convention on the Rights of Persons with Disabilities
CUP:	Common Underlying Proficiency
DHH:	Deaf and Hard of Hearing
DSL:	Danish Sign Language
DTZ:	Deaf Trust Zimbabwe
EFA:	Education for All
FGI:	Focus Group Interview
GSL:	Ghanaian Sign Language
ICT:	Information and Computer Technologies
IDEA:	Individuals with Disabilities Education Improvement Act
KSL:	Kenyan Sign Language
L1:	First Language
L2:	Second Language
MCE:	Manually Coded English
MDRC:	Michigan Disability Rights Coalition
NBT:	Nevada Ballet Theatre
NBTL:	New Break Through to Literacy

NCA:	New Concurrent Approach
NSL:	Norwegian Sign Language
NVPIE:	Nevada Partnership for Inclusive Education
SA:	South Africa
SASL:	South African Sign Language
SBE:	Sign Bilingual Education
Sim-com:	Simultaneous Communication
SPS & SNE:	Schools Psychological Services and Special Needs Education
SPSS:	Statistical Package for Social Sciences
SSE:	Sign Supported English
SSL:	Swedish Sign Language
TC:	Total Communication
UCE:	United College of Education
UK:	United Kingdom
UN:	United Nations
UNDP:	United Nations Development Programme
UNESCO:	United Nations Educational, Scientific and Cultural Organisation
UNGEI:	United Nations Girls' Education Initiative
USA:	United States of America
USL:	Ugandan Sign Language
WFD:	World Federation of the Deaf
ZaSL:	Zambian Sign Language
ZSL:	Zimbabwe Sign Language

LIST OF FIGURES AND TABLES

Figure	Title	Page
4.1	Model of Mixed Methods Research	160
4.2	Model of the Sequential Explanatory Mixed Methods Design	163
5.1	Teachers' Gender and Highest Educational Qualification	180
5.2	Teachers' Experience with Deaf Children and Area of Specialisation	181
5.3	Administrators' Gender and Highest Educational Qualification	182
5.4	Administrators' Experience with Deaf Children and Area of Specialisation	183
5.5	Teachers' Conception of SBE	184
5.6	Administrators' Conception of SBE	185
5.7	Teacher Identified Practices of SBE	186
5.8	Administrator Identified Practices of SBE	187
5.9	Teacher Cited Benefits of SBE	190
5.10	Administrator Cited Benefits of SBE	191
5.11	Deaf Children Cited Benefits of SBE	192
5.12	Teacher Cited Challenges in the Practice of SBE	194
5.13	Administrator Cited Challenges in the Practice of SBE	195
6.1	Sibanda's Framework for the Practice of SBE in Zimbabwe	215

Table	Title	Page
5.1	Themes and Sub-Themes of Sign Bilingual Education as a Strategy for Inclusion in Zimbabwe	199

LIST OF APPENDICES

- A Ethics Clearance Certificate
- B Request for Permission to Conduct Research
- C Acceptance Letter
- D Participant Information Sheet
- E Letter Requesting Adult Participation
- F Cover Letter for a Questionnaire
- G FGI Consent and Confidentiality Agreement Form
- H Confidentiality Agreement by Assistant Researcher
- I Questionnaire for Teachers
- J Questionnaire for School Administrators
- K Personal Interview guide for School Administrators
- L FGI Guide for Teachers
- M Questionnaire for Deaf Children
- N Letter Requesting Parental Consent
- O Letter Requesting Assent from Primary School Learners
- P Letter Requesting Assent from Secondary School Learners
- Q Editing Certificate
- R Reliability Coefficients
- S Test Statistics

CHAPTER ONE

THE STUDY AND ITS SETTING

1.1 INTRODUCTION

The study sought to examine how sign bilingual education is practised as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. The current chapter presents the problem and its context including the background to the study, the statement of the problem, motivation for the study, the main research question and sub-questions as well as the aim and objectives of the study. The chapter also puts forward the significance of the study, brief literature review, theoretical framework, research methodology and design, validity, reliability and trustworthiness of the study, ethical considerations, limitations and delimitations of the study, definition of key terms and a preliminary chapter outline. In emphasising the distinction between deaf with small letter 'd' and Deaf with capital letter 'D', the researcher only uses Deaf with capital letter 'D' in limited cases to refer to the members of the Deaf community or to cultural deafness otherwise deaf with small letter 'd' is used to project the generic view of deafness (Swanwick et al., 2016:2; Tang, 2016:3; Deaf Trust Zimbabwe (DFZ), 2015:2-3; Batterbury, 2012:254). Sign bilingualism, although referring to the philosophy that informs sign bilingual education, is in most literature used interchangeably with sign bilingual education. The following section presents the background to the study.

1.2 BACKGROUND TO THE STUDY

The philosophy of inclusion is enshrined in various international declarations, charters and conventions on children with special needs to which Zimbabwe is a signatory. These include the Convention on the Rights of Persons with Disabilities (2006); the Convention on the Rights of the Child (1989); Standard Rules on the Equalisation of Opportunities for Persons with Disabilities (1993); the Salamanca Report and Framework of Action on Children with Special Needs (1994); Universal Declaration on Human Rights (1948), the Jomtein World Declaration on Education for All (1990), the Dakar Framework for Action on Education For All, the African

Charter on the Rights and Welfare of the Child (1990) and the Incheon Declaration on Inclusive and Equitable Quality Education and Lifelong Learning for All (EFA) (2015) among others. The UNESCO (2005) Guidelines for Inclusion and the United Nations Girls' Education Initiative (2010) are some of the documents, which also add impetus to the call for the philosophy of inclusion on the international arena.

Kusters, De Meuler, Friedner & Emery (2015:16) believe that, for the deaf, real inclusion is only possible when they receive sign bilingual education (SBE) although UNESCO (1994) advises that, because of their unique communication needs, deaf children may be better educated in special schools or resource units. In effect, inclusion of deaf children and responding to their diversity and individual needs is simply the fair, ethical and equitable thing to do (Mastropieri & Scruggs, 2000:23) and the right thing to do (Winzer, 2000:9). In so doing, the World Federation of the Deaf (WFD) (2011:1) has asserted that sign bilingual education is the only way for deaf children to gain equal opportunities and allow them to become full citizens in their own right. This is consistent with the assertion that sign bilingual education has been framed within the inclusion agenda (Swanwick, Hendar, Dammeyer, Kristoffersen, Salter & Simonsen, 2016:294) suggesting that it works as a strategy for inclusion of deaf children. Thus, inclusion has partly contributed to the changing climate towards sign bilingual education (Swanwick, 2010:151).

The foregoing discourses are indicative of the complexity (Adoyo, 2007:5) and diversity (Kusters et al., 2015:16) of inclusion of deaf children in mainstream schools and the need for sign bilingual education thereof (Heslinga & Nevenglosky, 2012:4). For Aunola, Kulerer and Miettinen (2006:7), sign bilingual education will promote better education, self-esteem and equal educational opportunities and equal participation, hence full inclusion for deaf learners. Full inclusion of the deaf can only be realised by addressing the challenges pertaining to cultural and linguistic marginalisation and exclusion (UNESCO, 2005:16, UNESCO, 2009:7) which are inherent in the philosophy of sign bilingualism. To this end, Aunola et al. (2006:7) further suggests that, use of sign bilingual education will strengthen the identity of the deaf and foster their full inclusion in spoken and written language environments. Indeed, sign

bilingual education aims to cultivate an inclusive educational environment in which both deaf and hard of hearing (DHH) and hearing children receive education and access the same curriculum (Tang & Yiu, 2015:2).

Zimbabwe as a signatory to the aforesaid international agreements on inclusive education has responded to the call for inclusion by reforming the education system and expanding inclusive education services (Government of Zimbabwe, 2005:11) and enacting pro-inclusion policies that promote sign bilingual education. Zimbabwe is a developing country with diverse cultures including Deaf culture. At the time of the study, the country was entangled in its worst socioeconomic and political challenges of the time. The country is located in the south-central region of Africa with an estimated population of about 13 million and an agro-based economy (Mutepfa & Chataika, 2007:342). According to these authors the major oral languages in use are English, Shona and Ndebele. In these regards, 90% of deaf children in Zimbabwe are born to hearing parents and as a result of the cultural inclinations of most parents and society, there is denial of Deafness causing delay in the teaching of Sign Language to the deaf children (Deaf Zimbabwe Trust, 2016). The history of Deaf education in Zimbabwe is embedded in segregative missionary special schools for the Deaf (Musengi & Musengi, 135-136; Kadenge & Musengi, 2018:340). However, since the ratification of the Salamanca Statement and Framework for Action, deaf children in Zimbabwe were to be educated together with their hearing peers in mainstream schools using the combination of Sign Language and one or more of the oral languages which include 12 other minority languages in the country (Chimhenga & Sibanda, 2016:948).

Vinga (2016) reports that statistics compiled by Deaf Zimbabwe Trust show that there are 85 964 deaf children in Zimbabwe and over 90% of them are out of school. The Ministry of Primary and Secondary Education (2013) notes that only 2261 deaf children were receiving education in the 115 mainstream schools and 9 special schools that enrol deaf children and therefore use sign bilingual education in Zimbabwe (Vinga, 2018:4). Earlier on Mutepfa and Chataika (2007:343) had estimated that the number of deaf children in school stood at 1634 then. It is suspected that the main barrier causing this scenario is communication since

teacher training institutions do not offer training in Sign Language and the few that offer it do not impact concrete understanding of the language (Vinga, 2016:3). The prevalence of deafness is estimated to vary between 1.9% and 7.5% (Sibanda, 2000:35; Mathers, Smith & Concha, 2003:2) giving an average of 4.7% against a global estimate of between 4.6% and 5.3% (Vinga, 2015:4).

The Constitution of Zimbabwe (2013) Amendment Number 20, the Disabled Persons Act (1992) and the Education Amendment Act (2006) nevertheless all call for non-discriminatory education for all. Policies such as Education Secretary's Circular Minute Number P36 of 1990; Education Secretary's Circular Minute Number 2 of 2001; Education Secretary's Circular Minute Number 20 of 2001; Education Director's Circular Minute Number 24 of 2001; the Education Director's Circular Minute Number 7 of 2005 and Education Director's Circular Minute Number 2 of 2010 advocate for inclusive education practices wherein Education Secretary's Circular Minute Number 2 and Education Director's Circular Minute Number 24 both of 2001 directly address issues promoting the use of sign bilingual education as a strategy for inclusion. The Education Amendment Act (2006) Section 12 Subsection 5 actually clearly articulates that Sign Language shall be the priority medium of instruction for the deaf and hard of hearing (DHH) and that both Sign Language and the reading and writing of other official spoken languages shall be taught to the deaf in schools (DZT, 2015:9). However, there is no specific operational framework for practising sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe.

Globally, sign bilingual education has emerged as a relatively new strategy in deaf education (Gregory, 2006; Levesque, Brown & Wigglesworth, 2014; Swanwick, 2016:8) and as a response to failure of monolingual methods to improve the inclusion of deaf children in mainstream classrooms (Svartholm, 2010:158; Humphries, 2013:27; Dammeyer, 2014:110; Tang and Yiu; 2015:1). According to Gregory (2006:7): 'The newness of sign bilingual education means that the aim of research is more likely to be an account of what occurs when sign bilingual education is introduced than a demonstration of outcomes.' Levesque et al. (2014:161) and Swanwick (2016:8) also confirm that research into sign bilingual education

has only recently begun. In addition, Lange et al. (2013:1) articulate that since sign bilingual classes are still at their infancy even in the USA, it is imperative for research to take place in these classrooms and educational settings in order to describe how sign bilingual education is being applied and what the outcomes are for the deaf students. Despite its newness, studies that show statistically significant relationships between sign and oral languages are moving sign bilingual education forward (Ausbrooks, Gentry & Martin, 2014:2), hence the need for the current study.

Just like sign bilingual education, inclusion as a broader social philosophy, which refers to the right to active educational participation and equity through social engagement, is equally a relatively new process whose development is still in progress (Hyde, 2013:5; Kusters et al., 2015:14). Hyde (2013:4) argues that while inclusion is often taken for granted, it is a relatively recent process that is still in progress. For this reason, Hyde et al.'s (2006:416) analysis suggests that sign bilingual education as a strategy forms part of the overall process of inclusion of deaf children in mainstream schools, hence the nexus assumed between the two. Historically, sign bilingual education evolved from Scandinavian/Nordic countries in the 1980s, spread to United Kingdom and the United States in the 1990s and more recently to the rest of the world (Svartholm, 2010;160). Knoors and Marschack (2012:291) point out that for over 25 years, sign bilingual education has been considered an essential educational intervention for the deaf particularly in Europe and the USA. In the Scandinavian countries, where it is well established, sign bilingual education is the dominant strategy for educating deaf children in inclusive classes and has vast influence, but it had not been systematically evaluated (Dammeyer, 2014:110) specifically as a strategy for the inclusion of deaf children.

According to Hsing (2015:2), although sign bilingual education has been supported by theories in Northern Europe, there are still few studies that have been conducted to support its practical execution in inclusive settings. The few that are available often had a small number of participants making generalisability difficult (Lange et al., 2013:2). Levesque et al. (2014:161) and Swanwick (2016:8) confirm that research into sign bilingual education is often in form of small-groups or case studies. These revelations corroborate Cawthon's (2001:214)

earlier assertion that most studies on sign bilingual education are case histories, tracking successes and challenges within a single inclusive classroom. Plaza Pust (2005:1844) also suggests that even in the UK, more research still needs to be conducted in this area of deaf education. For Kermit (2010:161) such research hardly exists. In effect, Kushalnagar, Moreland, Jo Napoli and Rathman (2010:149) also assert that there had been no comprehensive study on sign bilingual education programmes save for that which was being conducted in Europe at the time. The foregoing reports have prompted the current study which seeks to interrogate how sign bilingual education is practised as a strategy for inclusion of deaf children in Zimbabwe. Swanwick (2010:156) points out that practice in sign bilingual education will only develop if it is informed by research that is communicated properly to reflective, critical and questioning practitioners. Similarly, Lange, Lane-Outlaw, Lange and Sherwood (2013:1) articulate that it is imperative for research to take place in sign bilingual classrooms and inclusive educational settings in order to describe how sign bilingual education is being applied and what the outcomes are for the deaf students.

Interestingly, the few studies that have been conducted on sign bilingual education have reported success and better results for deaf children (Kermit, 2010; Marschark, Tang & Knoors, 2014); cognitive benefits (Kushalnagar, Hannay & Hernandez, 2010:271); a strong bilingual advantage in inclusive environments (Lange, Lange-Outlaw; Lange & Sherwood, 2013:271) and social inclusivity (Hona & Kato, 2003:47; Tomasuola, Valeri, Di Renzo, Pasqualetti & Volterra, 2012:24; Hsing, 2013:6, 2015:2). Most of these studies, although sparse and generally inconclusive, have mostly focused on cognitive, academic and literacy outcomes (Swanwick, 2016:21). This has tended to eclipse discussion of wider and more fundamental issues such as inclusivity dimensions of sign bilingual education. However, some studies have suggested its benefits as a strategy for inclusion.

Heslinga and Nevenglosky (2012:2) implore that sign bilingual education aids in generating a positive learning environment, inclusive and interactive for varied learning needs and styles. In one of the studies, Kermit (2010:161) concluded that, in the Scandinavian countries where it started, sign bilingual education has proved beneficial and that deaf students in inclusive

schools in Sweden achieved better results than anywhere in the world due to sign bilingual interventions. Other studies conducted by Hansen (1987), Bergmann (1994), Lewis (1995) Mashie (1995) and Svartholm (2005; 2010) in Scandinavian/Nordic countries confirmed the success of sign bilingual education in those countries to the extent that the number of deaf children attending special schools had decreased to a minimum (Dammeyer, 2014:110).

A study by Marschark, Tang and Knoors (2014) in UK proved that sign bilingual deaf children in inclusive classes who received 240 hours of sign bilingual input showed better inclusivity than deaf children who learnt through a monolingual mode. These researchers found out that one of the benefits of sign bilingual education was social inclusion. There is also evidence that deaf children in sign bilingual programmes in UK develop positive self esteem and a strong sense of identity (Swanwick & Gregory, 2007:5). In an international study conducted in several European countries, Aunola et al. (2006:7) suggested that sign bilingual education promoted inclusion indicators such as better educational participation, self-esteem, equal educational opportunities and adaptability of deaf learners into spoken and written language environments. Further, the study concluded that the use of sign bilingual education in inclusive classes strengthens the identity of deaf children and fosters awareness of both Deaf and hearing cultures. Similarly, in the USA, a study by Kushalnagar et al. (2010:271) on the efficacy of sign bilingual education indicated improved inclusivity among other scholastic variables for deaf learners. Results of a similar study by Tomasuola et al. (2012:24) in Italy confirmed the hypothesis that deaf children in sign bilingual programmes outperformed their peers in oral based programmes on inclusivity dimensions in addition to other educational outcomes. The study also concluded in favour of sign bilingual education with regards to social inclusion. The other advantages of sign bilingual education as a strategy of inclusion have been found to include psychosocial wellbeing resulting, in part, from improved access to the curriculum and increased peer interaction in the classroom (Swanwick, 2016:22).

Another study conducted in Japan by Hona and Kato (2003:47) showed that sign bilingual education offered deaf children equal educational opportunities enjoyed by their hearing peers in inclusive settings, promoted both hearing and deaf cultures and improved

communication and interpersonal skills. Hsing (2015:2) reports that sign bilingual education has also been well executed in inclusive classes in Hong Kong in Asia and research findings from studies by Schick, de Villiers & Hoffmeister (2007:390) in that country found interpersonal benefits when sign bilingual education was used in the inclusion of deaf students. In a study in Hong Kong, Tang and Yiu (2015:1) observed positive outcomes in both 'social and academic integration' when sign bilingual education was used and concluded that sign bilingual education provides lots of opportunities for social and classroom interactions between and among teachers and learners, deaf and hearing alike. A similar study conducted by Hsing (2013:6) in Taiwan, to explore if sign bilingual education plus partial inclusion promoted both deaf and hearing kindergarten children's language and social interaction, reported increased learning speed and social interaction and academic participation. In a more recent study in Taiwan again, Hsing (2015:6) corroborated his earlier findings and concluded that although there were obstacles and challenges such as lack of training of teachers and parents, time constraints, lack of experienced deaf teachers and Sign language interpreters, the benefits of sign bilingual programmes in inclusive settings persisted for both deaf and hearing children. Kermit (2010:161), however, implores that more empirical studies are still required to sustain claims on the utility of sign bilingual education as a strategy for the inclusion of deaf children in ordinary schools. This reflects on challenges which some studies have noted.

In Greece, negative attitudes towards both sign bilingual education and the inclusion of deaf learners in ordinary schools were noted (El-Zraigat & Smadi, 2012:151). Contrary to the scenario in Greece, in Brazil, Dias et al. (2014: 495) found out that, although there were some regressive inclusive policies which provided for Specialised Service Centres for Special Public Education, sign bilingual education was compulsory for the deaf and the government and teachers were committed to it. However, sufficient sign bilingual teaching glossaries and supporting materials were still the main problem for teachers and interpreters in mainstream classrooms where sign bilingual education was used to facilitate inclusion of deaf learners (Dias et al., 2014:496). The paucity of studies on sign bilingual education as a strategy for inclusion of deaf children is worse in Africa (Nyst, 2010:1; Hauland & Allen, 2009:23).

However, the few existing studies in Africa (Reagan, 2008; Batamula, 2009; Magongwa, 2010; Glaser & Van Pletzen, 2012; Mweri, 2014; Kusters, 2014; Mpuang, Mukhopadhyay & Malatsi, 2015) have envisaged beneficial effects of sign bilingual education as a strategy for inclusion but have not evaluated any of the existing programmes.

A study by Musengi and Chireshe (2012:9) implied that sign bilingual education has potential for achieving both social and academic inclusion if well implemented but there is a glaring dearth of research in this area with regards to Zimbabwe. The other studies on the inclusion of the deaf in Zimbabwe (Mafa, 2014; Gudyanga, Wadesango, Hove & Gudyanga, 2014; Hlatywayo, Ncube & Mwale, 2014) have exposed some challenges but have not directly explored how sign bilingual education is practised as a strategy for inclusion. All the researchers in Zimbabwe have avoided or are not aware of the term sign bilingual education. This is one of the major gaps the current study intended to close. The current study departs from the practice of using small case histories and adopts a mixed methods approach involving several mainstream schools in one of Zimbabwe's most populated provinces to directly interrogate how sign bilingual education is practised as a strategy for inclusion of deaf children.

1.3 STATEMENT OF THE PROBLEM

Full inclusion of deaf children into mainstream schools in Zimbabwe has been elusive. One of the major problems has been the use of monolingual approaches. This is despite evidence suggesting the legality and the use of sign bilingual education in these schools. It has also been noted that inclusion of deaf children in mainstream schools in Zimbabwe has been constrained and complicated likely by cultural and linguistic barriers even with the existence of pro-inclusion policies that promote sign bilingual education as a strategy for inclusion. Swanwick (2010:147) admits that deaf education the world over is challenging due to complex linguistic, political and sociocultural issues as well as lack of educational and technical expertise but suggests that sign bilingual education can mitigate these challenges and ambiguities. The limiting factor is that there is no defined operational framework for how sign

bilingual education is used as a strategy for inclusion of deaf children in Zimbabwe. Similarly, the term sign bilingual education as a strategy for inclusion of deaf children in the country has not been popularised by policy makers and researchers alike.

Further, there is dearth of research and literature on sign bilingual education in Zimbabwe. Although no study to the knowledge of the researcher has directly interrogated how sign bilingual education is used as a strategy for inclusion of deaf children, the few case studies on the inclusion of deaf children in mainstream schools in the country have reported social at the expense of academic inclusion (Musengi & Chireshe, 2012: 107), scepticism about use of Sign Language, lack of training of Sign Language interpreters and deaf teachers (Musengi, et al., 2012:16-18; Mutswanga & Mapuranga, 2014:67) and negative attitudes towards the inclusion of deaf children among teachers (Gudyanga, et al. 2014:450). These results imply that a problem does exist concerning the practice of sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe.

1.4 MOTIVATION FOR THE STUDY

A number of factors motivated the researcher to conduct this study. In the mains, the researcher is a qualified teacher of the deaf by profession and has observed over the 16 years of experience that the constraints that characterise the inclusion of deaf children in mainstream schools in Zimbabwe have persisted despite evidence suggesting use of sign bilingual education. Persistent use of practices of monolingual nature such as fingerspelling and simultaneous communication needed scrutiny in order to put sign bilingual education in Zimbabwe into the correct perspective. Meanwhile, no documented study to the knowledge of the researcher has inquired on how sign bilingual education is used as a strategy for inclusion of deaf children in the country. Even in Sweden where it started, Svartholm (2014:3) notes that it has only been after 2000 that sign bilingual education programmes have been evaluated. The other basis for the motivation of the study was the conviction that sign bilingual education as a strategy for inclusion has the potential to improve the situation of

deaf children in mainstream schools and the researcher was keen to find out how this is being done in Zimbabwe.

The researcher was also concerned that, despite evidence suggesting the use of sign bilingual education, there is no definite operational framework in place. The current study would propose such a framework and popularise the use of sign bilingual education as a strategy for inclusion. The researcher felt that the efficacy of sign bilingual education as a strategy for inclusion which has been reported in other parts of the world needed urgent inquiry in Zimbabwe. Consequently, the researcher envisaged that the results of this study would inform policy and best practices in sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe.

The worldwide paucity of literature on sign bilingual education as a strategy for inclusion of deaf children, more so in Zimbabwe provided yet another plausible motivation for the study. As Swanwick (2016:22) puts it, there are very few studies which look at specific areas beyond literacy outcomes and as such literature on sign bilingual education as a strategy for inclusion of deaf learners is scarce. This is worse where non-English languages are involved (Swanwick et al., 2016:9). Conducting this study would, therefore, add to the existing body of literature on sign bilingual education as a strategy for inclusion. The very fact that sign bilingual education is a relatively recent phenomenon in deaf education (Gregory, 2006:7; Levisque et al., 2013:161; Swanwick, 2016:8) and is promising to change the conditions for deaf children in inclusive settings (Lange et al, 2013:2711; Hsing, 2015:2; Tang & Yiu, 2015:1) have added to the motivation for conducting this study. It is apparent that this study is likely to be the first of its kind in Zimbabwe. The successive section presents the main research question which is further broken down into sub-questions.

1.5 RESEARCH QUESTION

How is sign bilingual education practised as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?

1.5.1 Sub-questions

- How is sign bilingual education conceived as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?
- Which methods are used to practise sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?
- Why is sign bilingual education practised as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?
- What challenges are faced in the practice of sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?
- What framework could be proposed for the practice of sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe?

1.6 AIM AND OBJECTIVES OF THE STUDY

1.6.1 Aim

The main aim of this study was to interrogate how sign bilingual education is practised as a strategy for the inclusion of deaf children in mainstream schools in Zimbabwe.

1.6.2 Objectives

In order to achieve the general aim, the study sought to address the following specific objectives:

- Examine how sign bilingual education is conceived as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe.
- Identify the methods used to practise sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe.
- Analyse the benefits of practising sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe.

- Explore the challenges of practising sign bilingual education as a strategy for the inclusion of deaf children in mainstream schools in Zimbabwe.
- Propose a framework for the practice of sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe.

1.7 SIGNIFICANCE OF THE STUDY

There is paucity of research on sign bilingual education as a strategy for inclusion of deaf children within the Zimbabwean context. This study can therefore contribute to the extension of knowledge in this field, not only in Zimbabwe but also in the rest of Sub-Saharan Africa. As a result, the research findings could benefit stakeholders in deaf education and contribute to the improvement of access and participation of deaf children in mainstream schools. The results are also likely to impact positively on teachers' skills in this regard through training, staff and professional development programmes. Further, the knowledge that parents are likely to gain from the results of this study could improve their level of support of their deaf children's education. In this way, parents would gain skills for more meaningful engagement in the full inclusion of their children. Ultimately, the parents of the deaf are likely to gain a more positive social image. In addition, the findings could generate interest among education policy makers and provide baseline data for future nation wide studies. In other words, the study could contribute to scholarship on sign bilingual education as a strategy for inclusion. To ensure that these benefits are realised, the researcher would furnish the Permanent Secretary of Primary and Secondary Education with the results and recommendations of the study through the Bulawayo Provincial Education Director (PED). The researcher would also propose to make presentations at appropriate education fora and to widely publish the results and recommendations of the study.

1.8 LITERATURE REVIEW

Existing literature supports the rationalisation of sign bilingual education as a strategy for inclusion of deaf children. The justification of sign bilingual education as the best option for

meeting the needs of deaf children in inclusive setups is well supported by both research and theory. The related literature is briefly reviewed here in order to guide the research questions, exposit the research problem and align it with appropriate methodology and methods of the study (Walliman, 2009:50, 75).

1.8.1 Exploring the Conception of Sign Bilingual Education as a Strategy for Inclusion

Sign bilingual education, as opposed to monolingual approaches to teaching the deaf, involves the use of both visual/manual language and an aural-oral language in the teaching of deaf students (Mitchner; 2015:51). According to Emmorey, Boristein, Thomson and Gollan (2008) as well as Emmorey and McCulloch (2009) cited by Mitchner (2015:52), sign bilingual education (which the authors refer to as bimodal bilingualism) entails equitable use of both sign and spoken language by means of code blending and code switching. Deaf Australia (2010:1) suggests that the best sign bilingual education model is one in which Sign Language is used for instruction and an oral language for reading and writing, to facilitate inclusivity and general learning conditions for deaf learners. The rationale behind sign bilingual education is that simultaneous exposure to Sign Language (L1) and oral language (L2) and to both the Deaf and hearing cultures will facilitate the inclusion of deaf students into oral learning and social environments (Aunola et al., 2006:7; Heslinga & Nevenglosky, 2012:2; Lange et al., 2013:271). Garate (2012:1) also asserts that one of the key points in justifying sign bilingual education is that early access and exposure to a natural language initiate the language acquisition process required for social inclusion among other dimensions. The Centre for Sign Linguistics and Deaf Studies at the Chinese University of Hong Kong (2013:1) concurs that the increasing number of sign bilingual education programmes the world over attempt to bring sign bilingualism in line with inclusive education.

The Centre for Sign Linguistics and Deaf Studies at the Chinese University of Hong Kong (2013:1) further suggests that the proposal of sign bilingual education as a strategy for inclusion is built on the assumption that Sign Language can partner with spoken language in supporting the communication, cognitive and social psychological development of deaf

children. Gregory (1996:3) noted that deaf children who are exposed to sign bilingual education benefit in terms of wider curriculum accessibility and life-long inclusion into the mainstream of society. In addition, Plaza Pust (2005:1852) documents several studies (Gunther, 1999; Heiling, 1998; Chamberlain & Mayberry, 2000; Hoffmeister, 2000; Padden & Ramsey, 2000; Strong & Prinz, 2000) that have all reported positive results for sign bilingual education.

1.8.2 Rationale for Sign Bilingual Education as a Strategy for Inclusion

The philosophy behind sign bilingual education; that is, sign bilingualism; as a strategy for inclusion, has its roots in a linguistic and cultural minority view of deafness and social model of disability (Swanwick & Gregory, 2006:4). It calls for equality of educational opportunities, recognition of language and cultural plurality and empowerment of deaf children, as well as respect for their rights to access knowledge, skills and experiences that are available to their hearing peers (Kusters et al., 2015:16). In these regards, sign bilingual education has potential to foster inclusion and build social connections (Heslinga & Nevenglosky, 2012:3-4) between the deaf children and hearing people around them. Previous studies (Hona & Kato, 2003; Anoula et al., 2006; Kushalnagar et al., 2010; Kermit, 2010; Svartholm, 2010; Swanwick, 2010 & 2016; Tomasuola et al., 2012; Humphries, 2013; Hsing, 2013 & 2015; Marschark et al., 2014; Dammeyer, 2014; Mitchner, 2015) have proven that sign bilingual education can facilitate the inclusion of deaf learners in mainstream schools. In this context, among the goals of sign bilingual education is to help deaf children acquire Sign Language, master the oral language (reading and writing) of that community, gain the norms of the deaf culture and achieve social inclusion (Hsing, 2015:2). The basic argument for sign bilingual education as a strategy for inclusion is partly explained by the legitimacy of Sign Language and its equality of status to oral language (Swanwick, 2010:149).

Because of its encouraging results in Scandinavia (Dammeyer, 2014:110; Swanwick et al., 2016:4), sign bilingual education as a strategy in deaf education has been adopted by UK, USA and many other countries all over the world (Svartholm, 2010:159). In the UK, the driving

force behind the introduction of sign bilingual education was the need to formalise the growing use of spoken, signed and manually coded languages in response to the divergent individual needs of deaf children in inclusive settings and to articulate more clearly the use of Sign Language in education (Swanwick, 2010:148). Swanwick states that this movement towards sign bilingual education was initially driven by a general dissatisfaction with Total Communication (TC) and its ambiguous interpretation. She argues that TC reduces Sign Language to little more than a prop to help the deaf child to comprehend English.

The main reason for the establishment of sign bilingual education all over the world has been the failure of monolingual methods to meet the needs of the deaf children in mainstream classrooms (Svartholm, 2010:158; Humphries, 2013:27; Dammeyer, 2014:110; Tang and Yiu; 2015:1). In Scandinavian countries where it was first practised in the 1980s, sign bilingual education was a reaction to monolingual methods which had continued to produce disappointing results in spite of developments in hearing aid and cochlea technologies (Svartholm, 2014:1; Dammeyer, 2014; Swanwick 2016:1; Swanwick et al., 2016:4-5). In those countries, as has already been noted, sign bilingual education is well established and is the dominant strategy for educating deaf children (Dammeyer, 2014:110) in inclusive settings. Although there is no standard practice across the countries, some general positive effects on inclusivity of deaf children have been reported (Swanwick et al., 2016:2). Yiu and Tang (2014:6) implore that one benefit of sign bilingual education for deaf children is social interaction. Heslinga and Nevenglosky (2012:4) also concluded that sign bilingual education opens new avenues for communication and advances socialisation for both deaf and hearing children, builds acceptance and a cooperative environment, brings about acceptable motions that add a sense of fun and freedom in the classroom and allows for acceptance of each other's cultures, especially of the deaf culture. For Aunola, Kulerer and Miettinen (2006:7), sign bilingual education will promote better education, self-esteem and equal educational opportunities, hence full inclusion of the deaf learners. The authors further suggest that the use of sign bilingual education will strengthen the identity of the deaf and foster their full inclusion in spoken and written language environments.

The Centre for Sign Linguistics and Deaf Studies at the Chinese University of Hong Kong (2013:2) promulgates that in sign bilingualism, unlike in monolingualism; both languages are linguistically equal in status and complement each other in supporting deaf children's language development, social interaction and access to world knowledge. This interactivity promotes respect for each other's cultures and languages, a practice which facilitates acceptance and hence inclusion. After all, the WFD (2011:1) declares: 'Bilingual education is the only way for deaf children to gain equal opportunities and allow them to become full citizens in their own right.' It deconstructs concepts of discrete routes to the mastery of spoken and sign languages in isolation (Swanwick et al., 2016:7), democratises the education of deaf children by challenging established language constructs and ownership and legitimises inclusion of deaf children in the mainstream of education (Little, 2011:301 - 392).

Borrowing from the WFD (2011) declaration, the Constitution of Zimbabwe (2013) Amendment Number 20, Section 6 recognises Sign Language as one of the 16 official languages of the country. Similarly, Article 24 of the UN Convention on the Rights of Persons with Disabilities (2006:16), which advocates for inclusion, places strong emphasis on the use of native/indigenous languages and culture in the instruction of learners while UNESCO (2009:14) asserts, 'Multilingual approaches in education, in which language is recognised as an integral part of a student's cultural identity, can act as a source of inclusion.' This is despite the fact that some researchers in the past (Mayer & Wells, 1996) have contested the use of sign bilingual education, arguing that since Sign Language and oral language do not share the same mode of production, the notion of transfer between the two languages cannot directly apply (Swanwick, 2009:155). In any case, according to Plaza Pust and Lopez (2008) in Swanwick (2010:155), the debate about language transfer is far from being resolved and thus calls for further interrogation.

One other main rationale for sign bilingual education as a strategy for inclusion is that children generally gain access to school activities best only through a language modality that they understand best (Svartholm, 2010:165). In other words, deaf children can only achieve inclusion when sign bilingual education is used. Therefore, sign bilingual education could be

the most effective strategy for achieving inclusion of the deaf since it is the best option for their education so far (Brown, 2009:1). UNESCO (1994:3) in paragraph two believes that regular (mainstream) schools with an inclusive orientation are the most effective in meeting the unique needs of children with disabilities.

In Zimbabwe, inclusion of deaf children in mainstream schools has continued to be a cause for concern among deaf educators and researchers. Musengi et al. (2012:1) report that, some mainstream teachers of the deaf in Zimbabwe often use spoken language when teaching the deaf because they are sceptical of sign bilingualism. Meanwhile, Musengi and Chireshe (2012:110) conducted a case study and found out that inclusion of the deaf children using sign bilingual education practices faced challenges such as lack of appropriate resources, poor sign language skills among mainstream teachers of the deaf and large class size. Further challenges that have been noted in the inclusion of deaf children in Zimbabwe include negative attitudes among stakeholders (Mafa, 2012:20; Chireshe, 2013:223; Mutswanga & Mapuranga, 2014:59), lack of skilled sign language instructors (Mutswanga & Mapuranga, 2014:59) and Sign Language interpreters (Musengi and Chireshe (2012:07) and lack of support from education supervisors (Mafa, 2012:14). In another study, Deaf Trust Zimbabwe (2016) concluded that communication was a real barrier to learning and inclusion of deaf children in mainstream schools in Zimbabwe as there was little understanding of Deafness coupled with negative attitudes toward the Deaf children. Additionally, despite policy frameworks directing that Sign Language be taught as a subject in mainstream schools, the study discovered that this was not practised. The current study therefore interrogates the practice of sign bilingual education as a strategy for the inclusion of deaf children in mainstream schools in Zimbabwe.

1.8.3 International Best Practices of Sign Bilingual Education

Previously in Nordic countries, sign bilingual education was restricted to special schools for the deaf but today it is the dominant model for educating deaf and hard of hearing children in mainstream schools (Dammeyer, 2014:110). Sign bilingual education is now provided as a right to deaf children in mainstream schools particularly in Sweden and the degree of hearing

loss is not a factor in the child's legal right to education through sign bilingualism (Hyde et al., 2006:418; Swanwick et al., 2016:3). Hult and Compton (2012:607) note that in Sweden, Sign Language is predominantly used as the subject of instruction for the deaf and this has facilitated the use of sign bilingualism in the whole educational domain to facilitate interpersonal communication between the deaf and the hearing in the schools. This change of practice coincided with the introduction of Sign Language as a subject where even hearing children are taught about Sign Language linguistics, Deaf culture and Deaf history (Dammeyer, 2014:110; Swanwick et al., 2016:4) to facilitate inclusivity. Plaza Pust (2005:1846) insinuates that one secret behind the success of sign bilingual education in Nordic countries particularly in Sweden, is its early introduction. Exposing deaf children to sign bilingual education early positively impact on communication and social emotional development which contribute to social inclusion (Swanwick et al., 2016:22).

In Norway, special schools were transformed into resource centres in 1992. These resource centres according to Hyde et al. (2006:418) arrange courses and offer guidance and counselling to regular school teachers and hearing parents of deaf children in order to facilitate sign bilingual education. Hearing parents of deaf children are entitled to 40 weeks of training in sign bilingual education practice with free transport and accommodation and compensation for lost wages (Pritchard, 2005:1; Hyde et al., 2006:418; Swanwick & Gregory, 2007:25; Swanwick et al., 2016:3). In the USA, most of the deaf children are now educated in mainstream schools and training teachers for sign bilingual education is no longer experimental but a legal option that colleges and universities can offer under regularised standards and accreditation and a teacher of the deaf would ideally be fluent in both sign and oral language, be Deaf or if not Deaf very well acculturated in the Deaf culture (Humphries, 2013:20).

A similar trend exists in the UK where, since 1998, a policy document entitled '*Sign Bilingualism: A Model*' which was developed and published by Pickersgill and Gregory and revised in 2007 has been used as a policy reference for sign bilingual practice (Pickersgill & Gregory, 2007:5; Swanwick, 2010:150). The document identifies curriculum access, planned

use of language, language support for both hearing and deaf children, individualised programming, assessment and monitoring of needs, appropriate staffing, parental involvement and an ethos which recognises both hearing and deaf cultures and is deaf aware as pillars for successful sign bilingual education.

In Hong Kong, sign bilingual education is established through collaborative teaching between a regular teacher and a Deaf individual who can sign (Tang & Yiu, 2015:2). These authors report that, to ensure sign bilingual development of deaf and hard of hearing children, speech therapists, backed up by Sign Language training, conduct speech and language therapy in groups and individually on a regular basis. Similarly, in Brazil, sign bilingual education is developed by involving Sign Language interpreters and teachers from different areas of knowledge who are aware of the linguistic uniqueness of deaf students (Lodi, 2013:54). Internationally, there is also a developing interest in the use of technology in sign bilingual education contexts (Swanwick, 2016:22). For example, in Norway, sign bilingual education is regarded as a form of post-operative intervention and follow-up offered to children with cochlear implants (Humphries; 2013:20).

1.8.4 The Theoretical Framework of Sign Bilingual Education as a Strategy for Inclusion

From a disability political point of view of social inclusion, sign bilingual education as a strategy for inclusion generally sits within a social model of deafness (Swanwick, 2010:154). In this respect, sign bilingual education as a strategy for inclusion emphasises the valuing of deafness and Sign Language, self-identity and self-esteem of the deaf children and recognises the unique and distinctive features of the Deaf culture (Gregory, 2005:18). Kusters et al. (2015:9) suggest that sign bilingual education is in tune with the wider humanitarian and democratic goals of social diversity, social inclusion, equity and social justice. According to WFD (2011:1) sign bilingual education for deaf children is a human rights issue and, therefore, indispensable. In these regards, the contextualisation of sign bilingual education within inclusion discourses can also be connected to the social model of disability. The Michigan Disability Rights Coalition (MDRC) (2014:1) states that the social model is premised on a civil

rights philosophy and views disability as a consequence of environmental and social barriers to full participation and inclusion. Swanwick (2010:154) further elucidates that, “A social model of deafness validates the linguistic and cultural choices of deaf people, celebrating this diversity and accommodating difference.” In this regard, sign bilingual education is intricately embedded in the philosophy of inclusion.

Similarly, Vygotsky (1983) locates sign bilingual education as a strategy for inclusion within his historico-cultural theory which derives from the following interconnected principles of the social and physical aspects of deafness, acknowledgement of the role of Sign Language and the recognition of the equality of status between sign and oral languages (Zaitseva et al., 1999:10). Vygotsky (1983:217) also asserts that sign bilingualism is unavoidable for the inclusion of the deaf. In apparent agreement with Vygotsky (1983), Batterbury, Ladd and Gulliver (2007:2908) state that deaf people define themselves as a culturo-linguistic people with their own ontological frames of reference to explain their existence as a global geographical community. Thus, in the context of sign bilingualism, deaf people are seen not only as individuals but also as collectivities that need to be recognised as culturo-linguistic minorities requiring legal protection akin to other linguistic and cultural minorities (Kusters et al., 2015:9). In other words, sign bilingual education as a strategy for inclusion represents a significant paradigm shift from the traditional deficit model of deaf education practices to a socio-cultural view of deaf children (Humpries, 2013:7). While Swanwick (2010:154) also concurs with Vygotsky on the issue of premising sign bilingual education as a strategy for inclusion within socio-cultural models, she argues that regarding deafness from a cultural point of view does not, however, imply that professionals in Deaf education should ignore the potential effects of physiological deafness on the individual.

In terms of language and social inclusion frameworks, sign bilingual education is also premised on Cummins’ (1979; 1981; 2000; 2006) Linguistic Interdependence Theory which proposes that competence in a second language is a function of proficiency in one’s first language (Freel, Clark, Anderson, Gilbert, Musyoka & Hanser, 2011:19). Cumming (1981:29) theorises,

“To the extent that instruction in first language (L1) is effective in achieving proficiency in L1, transfer of this proficiency to second language L2 can occur, provided that there is an adequate input of L2 and one is motivated to learn L2.” Put in another way, the rationalisation of sign bilingual education is premised on the Linguistic Interdependence Principle, which proposes that a common underlying proficiency across languages will allow positive transfer from L1 to L2 to occur if there is adequate exposure to L2 and motivation to learn it (Cummins, 2006:5). Mayer and Leigh (2010) in Knoors and Marschark (2012:292) agree that for effective linguistic transfer to occur, the child needs to have a good input of L2 and needs to be motivated to learn it. In addition, Humphries (2013:12) reports that research reveals an underlying proficiency link between sign and oral languages. For this reason, Cummins’ Linguistic Interdependence Theory is at times termed the Theory of Common Underlying Proficiency (CUP). Cummins (2006:6) found out that crossing the threshold in development of a first language aids in the acquisition of a second.

Research studies conducted at the University of California in the 1990s (Blumenthal-Kelly, 1995; Mather, 1990; Padden, 1991; Padden & Ramsey, 1998), all concluded in favour of the linkages between Sign Language and spoken language justifying the use of sign bilingual education as a strategy for inclusion of the deaf (Humphries, 2013:12). As a result, according to Swanwick (2016:10), a model of sign bilingual education thus began to emerge in the 1980s which envisaged Sign Language as the L1, or dominant language and a basis from which to develop literacy skills (reading and writing) in spoken language (L2). Svartholm (2010:160) argues that as the sign bilingual education model became increasingly articulated especially in Scandinavia, the USA and the UK. The author adds that, at the same time, Cummins’ Linguistic Interdependence theory became the accepted theoretical basis upon which to speculate about the role of Sign Language in supporting literacy development and the inclusion of the deaf in mainstream settings.

Debate has previously ensued problematising the sign bilingual model in that some scholars felt that since Sign Language had no precise written form then, deaf children have no prior

experience of the use of the oral modality rendering the transfer between the two languages impracticable in that deaf children are not able to approach the learning of language as an ordinary L2 or L1 experience (Swanwick, 2016:10). Earlier on Mayer and Wells (1996:104) in Mayer and Leigh (2010:181) described this as a double discontinuity but Giambo and Szecsi (2015:57) maintains that there is evidence that the two languages depend on one another and influence each other. Hermans, Ormel and Knoors (2010:194) suggest that while it is possible to facilitate written language being the second language (L2) using Sign Language being the first language (L1), CUP would only apply to conceptual knowledge, meta-cognitive and meta-linguistic processes and not necessarily to the transfer of vocabulary and grammar. This position was later corroborated by Mayer and Wells (1996) in Moffat-Feldman (2015:2) arguing that it is not accurate to claim that the linguistic interdependence model stands true for the case when L1 is a well established Sign language and L2 is a spoken language, since the deaf may lack exposure to oral language based signs and thus the conditions do not match the conditions laid out in the Linguistic Interdependence model. However, Hermans et al. (2010:2) further posit that the foregoing reservations about the transfer between sign and oral languages do not suggest that such a transfer cannot occur as evidence points to the fact that deaf children of deaf parents perform better than deaf children of hearing parents linguistically, academically and socially even in inclusive settings. Such evidence points to the possibility of the inter-modal transfer between sign and spoken languages.

In any case, the argument that transfer cannot take place between dissimilar language modalities is based on a narrow view of linguistic transfer and of routes to literacy development and not on empirical evidence (Swanwick, 2016:10). Tang and Yiu (2015:3) suggest that there is growing evidence of positive interaction between sign and spoken languages at all levels and indeed that transfer can take place across and between two or more dissimilar languages. Thus, the criticism of the CUP informing sign bilingual education has been fiercely challenged to the extent that it holds little substance in contemporary discourses. The debate is, however, a clear demonstration of the dynamic and robust nature of sign bilingual education and its potential for facilitating inclusion of deaf children in

mainstream schools. Garate (2012:2) concludes that knowledge, experiences and proficiencies developed in one language can be accessed to support the development of the other language regardless of modality. This has important implications for sign bilingual education as a strategy for inclusion of the deaf into the hearing mainstream of society (Kusters et al., 2015:16).

1.8.5 RESEARCH METHODOLOGY AND DESIGN

This section briefly presents the philosophical paradigm, the research approach and the research design that informed the study. Techniques and procedures for data collection and analysis are also outlined. Salient details of the research methodology are presented in chapter four.

1.8.5.1 The Research Paradigm

This study, while it has some features of exploratory research, is largely descriptive and explanatory and will, therefore, utilise the mixed methods research paradigm, which is grounded in the philosophy of pragmatism. Pragmatism, according to Creswell (2012:534), entails use of procedures that work for a particular research problem under study using multiple methods. For Morgan (2007) cited in Creswell, Klassen, Plano Clark and Smith (2011:4), 'A pragmatic perspective draws on employing what works using diverse approaches, giving primacy to the importance of the research problem and question and valuing both objective and subjective knowledge.' According to Creswell (2009:10), pragmatism derives from the work of Peirce, James, Mead and Dewey and arises out of actions, situations and consequences rather than antecedent conditions such as in post-positivism. In the study, the actions will relate to what is happening at present and what should be done for sign bilingual education to prosper as a strategy for inclusion of deaf children in Zimbabwe. The situation will constitute current conditions of inclusion of deaf children in the mainstream schools and the consequences will entail the quality of observable outcomes of inclusive education for the deaf children when sign bilingual education is used. Being largely descriptive, this study will

be used to provide specific details of the situation of sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe and explain the relationships of factors pertaining to its practice. Mixed methods are a relatively new procedure for collecting, analysing and mixing both quantitative and qualitative methods in a single study or a series of studies to understand a research problem (Creswell, 2012:535). Creswell argues that the basic assumption for using mixed methods research is that it provides a better understanding of the research problem and question than either method by itself. For Neuman (2011:38) descriptive and exploratory research blend together in practice and descriptive research can be used to generate policy.

The mixed methods research paradigm involves a combination or integration of qualitative and quantitative data in a research study (Creswell, 2014:14). In other words, the mixed methods research paradigm utilises the strengths of both qualitative and quantitative research in a complementary fashion. Creswell (2009:14) posits that mixed methods emerged as a strategy for neutralising biases inherent in single methods and triangulating data sources in order to seek convergence in integrating quantitative and qualitative methods. As early as 1946, Merton and Kendall saw that social scientists were abandoning the spurious choice between qualitative and quantitative methods in favour of combining both to 'make use of the most valuable features of each' (Cohen, Manion & Morrison, 2007:47).

The researcher therefore chose the mixed methods research paradigm because it provides flexibility in responding to the questions of 'what' works for sign bilingual education and 'how' sign bilingual education is practised as a strategy for inclusion of deaf children in Zimbabwe. Onwuegbuzie and Leech (2004:770) argue that mixed methods research enables more flexible and holistic investigation and helps researchers to develop frameworks, validate findings and construct appropriate indices. Mixed methods research also enables collection of multiple sets of data using different research methods, epistemologies and approaches in such a way that the resultant mixture or combination has multiple and complementary strengths and non-overlapping weaknesses (Imran & Yusoff, 2015:390). In addition, the researcher chose mixed methods research since it was apparent that this study would generate both

quantitative and qualitative data (Creswell, 2012:535). Combining the two types of data would help the researcher to achieve more authentic findings and to develop a framework for future best practices in sign bilingual education as a strategy for inclusion in Zimbabwe. In effect, one important rationale for using the mixed methods paradigm is that it enhances the interpretation of significant findings in educational evaluations (Onwuegbuzie & Leech, 2004:771).

1.8.5.2 Research Design

The sequential explanatory research design which is also known as a two-phase model (Creswell, 2012:542) will be utilised for this study. Creswell (2014:15) conceptualises the sequential explanatory research design as one in which the researcher first conducts quantitative research, analyses the results and then builds on the results to explain them in more detail with qualitative research in order to provide a comprehensive analysis of the research problem. Both quantitative and qualitative data are collected sequentially then compared, and the information is integrated during the interpretation of the results (Creswell, 2009:14; Creswell et al, 2011:8). For this study, the sequential explanatory research design will enable the researcher to elaborate and refine quantitative findings through an in-depth qualitative exploration in order to gain further insight (Creswell, 2012:543) of how sign bilingual education is a strategy for inclusion of deaf children in Zimbabwe. Triangulating the two sources and types of data will most likely enable the researcher to achieve trustworthiness and confirmability of results and to draw the most fundamental conclusions with more efficiency and confidence (Gunawan, 2015:11; Yeasmin & Rahman, 2012:154).

1.8.5.3 Population and Sample

Considering that deaf children are a minority group and hence have a highly finite population, the target population of this study included all teachers in mainstream schools that use sign bilingual education in Bulawayo Metropolitan Province of Zimbabwe, all the deaf children in these schools and all the administrators of these schools. Altogether there are 115 mainstream schools that enrol deaf children in Zimbabwe (Vinga, 2016:3) of which 12 of them

are in Bulawayo. These mainstream schools use some sign bilingual strategies and have resource units for the deaf and hence should be staffed with at least one specialist teacher of the deaf. All the 12 schools that use sign bilingual education in the Bulawayo Metropolitan Province formed the target population. Ten of the schools were randomly sampled for the study. A sample of 100 teachers comprising specialist and mainstream teachers, 30 school administrators and 30 deaf children from the Bulawayo Metropolitan Province of Zimbabwe participated in the study. In all, the study had 160 participants chosen using simple random sampling for the quantitative phase of the study and purposive sampling for the qualitative phase.

1.8.5.4 Instrumentation

This study utilised a semi-structured questionnaire and focus group interview (FGI) for teachers and a questionnaire and personal face-to-face semi-structured interviews with school administrators and deaf children. Use of such multiple measures for collecting data is called triangulation of measure which provided a more accurate picture (Neuman, 2011:164) of how sign bilingual education is practised as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe.

1.8.5.5 Data Collection Procedures, Presentation and Analysis

The schools were accessed by first seeking permission from the Ministry of Primary and Secondary Education using the Ethics Clearance Certificate issued by the UNISA College of Education Ethics Review Committee and then making appointments through the Heads of individual schools. Quantitative data were collected and analysed ahead of qualitative data and then the two sets of data were merged. On one hand, quantitative data were collected using the questionnaires, coded, summarised into tabular and graphical presentations and analysed using descriptive and inferential statistics generated via the Statistical Package for Social Sciences (SPSS). On the other hand, theme identification, text and content analyses and thick descriptions were used to analyse qualitative data collected by means of the interviews. Ultimately qualitative data analysis was used to explain, refine and extend the general picture

(Creswell, 2012:542) of how sign bilingual education is practised as a strategy for the inclusion of deaf children in Zimbabwe as provided by the quantitative results.

1.9 VALIDITY, TRUSTWORTHINESS AND RELIABILITY

Internal validity was assured through reasonable spacing of timelines between collection of quantitative data and that of qualitative data and across the schools. This was done to guard against historical and maturational threats to validity (Taylor & Asmundson, 2007:24-25; Benge, Onwuegbuzie & Robins, 2012:19). Random selection of participants would minimise bias. External validity was assured through careful generalisations which were limited to similar cases of stakeholders in sign bilingual education and by using a relatively and technically large and representative sample (Creswell et al., 2011:166). In addition, content validity was achieved by means of equitable selection of indicators of sign bilingual education as a strategy of inclusion in constructing the instruments (Newman, Lim & Pineda, 2011:1-2). Appropriate instruments were used for each segment of the sample with keen regard for the literacy levels and communication modes of the participants while construct validity was assured through clear articulation of the constructs (Cohen et al., 2007:138) involved in sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe.

For qualitative data, triangulation, thick descriptions, self-reflection, persistent observation and member checking were used to guarantee both validity and trustworthiness (Neuman, 2011:457; Cresswell et al., 2011:192). To establish reliability of quantitative data, Spearman Brown's split-half method was used to ensure internal consistency (Cohen et al., 2007:147) of the questionnaire. A pilot study was also conducted to establish the reliability of both the questionnaires and the interview/topic guides. In so doing, subjectivity and the halo effect was minimised as much as possible. The halo effect was further mitigated through guaranteeing of confidentiality while subjectivity was counteracted by means of ensuring anonymity of data sources and through honest reporting.

1.10 ETHICAL CONSIDERATIONS

Firstly, the researcher sought and obtained an Ethics Clearance Certificate from the UNISA College of Education Ethics Review Committee. In all cases, the researcher practised honest reporting, which Walliman (2009:336) says is essential to engender a level of trust and credibility in the development of knowledge. Additionally, the researcher endeavoured to avoid anything that would suggest some level of plagiarism in the research report. In dealing with deaf children, patronising, stereotyping, demeaning, discriminatory and prejudicial tendencies or language was avoided at all costs in order to prevent harming them. Their Deaf culture, their pride and their rights were respected throughout the study while consent was sought from their parents and their assent was also solicited. Access to schools was sought through the Ministry of Primary and Secondary Education, while informed consent was sought from each individual participant, in which case all the participants were not coerced to take part. Anonymous reporting and confidential treatment of data was done to protect the participants' rights to privacy (Cohen et al., 2007:64).

1.11 LIMITATIONS OF THE STUDY

The first obvious limitation of this study was the smaller sample than could ideally have been used had there been more time and resources. The study sample was generated from one out of the 10 provinces of Zimbabwe. A more ideal sample could have been obtained from all the 10 provinces, although some of the provinces have very few schools that provide sign bilingual education. Since this is a mixed methods research, more time could be needed to deal with the multiplicity of data sources. This could cause further resource constraints for the researcher. Creswell et al. (2011:8) stress that mixed methods research requires extensive time and resources to carry out the multiple steps involved. More time was also needed for rigorous quantitative analysis and persuasive qualitative procedures that show the development of themes for each case and for cross-case comparison (Creswell, 2012:543). Some teachers and administrators felt that they were overburdened by having to complete the questionnaire and at the same time take part in the interview.

Similarly, the use of the open-ended questionnaire could have restricted the participants from providing some other important data. The paucity of literature on the practice of sign bilingual education in Africa in general and in Zimbabwe in particular posed another limitation and was quite frustrating. The other limitation is that the results generated from the qualitative dimension of the study may be difficult to replicate (Wiersman, 2000:211; Everest, 2014:6) in future studies. In addition, sequential explanatory designs have their natural challenges relating to determining the aspects of quantitative results that would need follow up, selecting the participants for engagement in the qualitative phase, deciding on the questions to ask in the follow up and complexity of obtaining adequate samples for analyses as well as for employing a consistent unit analysis (Creswell, 2012:543).

1.11.1 Strategies for Overcoming the Limitations

Triangulation and multiple sources of data were used to ensure in-depth analyses and corroboration of data in order to avoid biases associated with smaller samples (Silverman, 2006:90; 2010:63). Follow-up face-to-face and focus group interviews were used to authenticate questionnaire responses. This action also mitigated the issue of replication of results. To deal with the issue of paucity of literature, the researcher consulted a wide range of sources and used international literature on sign bilingual education to transcend issues to the current study. Meanwhile, purposive sampling was used to ensure that all the stakeholders in the practice of sign bilingual education as a strategy for inclusion of deaf children were sufficiently represented. To mitigate the possibility of low morale among the participants, the researcher took time to build rapport with the participants and to explain the importance of the study.

The rapport between the researcher and participants acted as a catalyst against the halo effect or interviewer bias. In some cases, the researcher left behind the questionnaire but put definite appointments for their collection to achieve a near 100% return rate. By assuring participants that their responses would be treated with strict confidentiality, the researcher gained the participants' trust to provide authentic responses. This minimised the possibility

of conflicting results. To mitigate the limitations of selecting adequate participants and of ensuring consistent unit analysis, the researcher conducted interviews to the point of data saturation (Fusch & Ness, 2015:1411) and used a uniform interview guide for similar stakeholders.

1.12 DELIMITATIONS OF THE STUDY

The study was conducted in mainstream schools that use sign bilingual education in the Bulawayo Metropolitan Province of Zimbabwe. Only teachers of the deaf, school administrators and deaf children themselves participated in the study.

1.13 DEFINITION OF KEY TERMS

The key terms are defined in the context of the study.

1.13.1 Sign bilingual Education

According to Kermit (2010:159) sign bilingual education is an approach to the education of deaf children which presupposes simultaneous acquisition of Sign Language and an oral language. Thus, sign bilingual education entails the relative use of Sign Language and a spoken language, where Sign Language is used as a medium of instruction and the spoken language is used for reading and writing (Swanwick, 2010:148; Freel et al., 2011:18). More broadly, Swanwick (2016:2) conceives sign bilingual education as use of two or more modalities and two or more languages of which at least one is Sign Language. It is premised on the assumption that the first language for the deaf is Sign Language (Svartholm, 2014:3). For Honna and Kato (2003: 46) sign bilingual education, as an educational strategy, is the use of Sign Language (of a particular country) as the first language (L1) of the deaf and a spoken language (of that country) as the second language (L2). Similarly, Tang (2016:3) sees sign bilingualism as acquisition of both a sign language (L1) and a spoken language (L2) either simultaneously or sequentially, depending on the timing of linguistic exposure to the two languages. The essential features of sign bilingual education are that each language is recognised as distinct and used differently yet equitably (Swanwick, 2010:148) and the

recognition of the equality of hearing and deaf cultures (Nussbaum, Scott & Simms, 2012:16; Hsing, 2015:2). In the context of this study, sign bilingual education refers to an educational arrangement where deaf children in inclusive setups in Zimbabwe are taught using both Sign Language and one or more of the official spoken languages ordinarily used in the home and/or school, and in which the languages are given equal recognition and status.

1.13.2 Inclusion

Inclusion is a process of addressing and responding to the diversity of needs of all learners through increasing participation in learning, cultures and communities and reducing exclusion within and from education (United Nations Girls Education Initiative (UNGEI), 2010:6). According to Hyde (2013:5) inclusion which is founded on human rights principles, refers to the right to active participation and achieving equity through engagement in all aspects of daily life. Inclusion is thus a set of processes concerned with removing barriers to presence, participation and progress in the teaching and learning of all children (Samkange, 2013:954). It involves changes and modifications in content, approaches, structures and strategies, within a common vision which covers all children of the appropriate age range and a conviction that it is the responsibility of the regular school system to educate all children within an accessible, safe, secure and child-friendly learning environment, where diversity is acknowledged and responded to and every effort is made to reduce barriers to participation and learning (UNESCO, 2005:13; 2008:3; 2009:8; Kusters et al., 2015:19). For Abu Shaira (2013:2375), inclusion represents the participation of all students in a supportive education environment in which appropriate educational services and forms of social support are available. According to the Nevada Partnership for Inclusive Education (2016:1), inclusion is an educational approach and philosophy that provides all students with community membership and greater opportunities for academic and social participation and achievement. It is about ensuring that every student feels welcome because their individual needs are valued and met and entails that deaf children attend the nearest school in the neighbourhood and which they would have attended had they not been deaf (UNESCO, 1994 in Sagahutu & Struthers, 2014:150; Republic of Namibia, 2013:6). Specific to this study, an educationally specific definition of inclusion as inclusive education is adopted. Thus, inclusive

education entails the use of sign bilingual education to facilitate and promote equitable learning conditions, language access and cultural diversity within the mainstream school system where all children, deaf or not, are valued the same and benefit from equitable participation in the overall education process (Walton, 2017:1-2; Kusters et al., 2015:25).

1.13.3 Deaf Children

Deaf children can be defined either clinically or culturally. According to the Federal Disability Definitions Title 34, Part 300 Section 300.8 (2000:2) a deaf child is clinically one who has a hearing impairment that is so severe that she or he cannot process linguistic information through hearing. Thus, a deaf child is one with hearing impairment who, despite having a rich cultural and Sign Language heritage, is excluded from the mainstream of education and cultural reproduction by perpetuation of the phonocentric worldview or unilateral use of speech (Dias et al., 2014:492; Svartholm, 2014:3). From this medical point of view, deaf children are those children who are characterised by total loss of the hearing sense (Dias et al., 2014:492). In the cultural framing of deafness, Deaf children are conceptualised as those whose identity is guided and based on the visual-spatial language and framed on the collective linguistic and cultural patrimony of deafness (Batterbury, 2012: 256; Kusters et al, 2015:9). This study predominantly adopts the cultural and generic definition in which deaf children include those who are deaf and those who are hard of hearing (DHH) but being conscious of the clinical framing depending on particular contexts.

1.14 PRELIMINARY CHAPTER OUTLINE

This section provides the outline of the six chapters of this research report.

Chapter One: The Problem and Its Context

This chapter articulates the background to the study and emphasises the central issues and events that motivated the study. The problem statement is expressed and research questions proffered. The chapter also briefly reviews literature, pursues the context of the problem and

locates the study within a relevant theoretical framework. It is in this chapter that the key terms of the study are defined and the general tone and structure of the study is projected.

Chapter Two: Foundations and International Perspectives of Sign Bilingual Education as a Strategy for Inclusion

Literature related to the emergence and justification of sign bilingual education is reviewed in this chapter. The philosophical foundations of sign bilingual education are examined and the evolution of sign bilingual education as it is conceptualised and practised in various countries is articulated. The chapter illuminates sign bilingual education as a new and emerging strategy for the inclusion of deaf children, articulates best international practices and examines existing challenges.

Chapter Three: The Theoretical Framework and Practice of Sign Bilingual Education as a Strategy for Inclusion

This chapter is a continuation of the literature review but deals with the theoretical underpinnings of sign bilingual education as a strategy for inclusion. It explores and examines the various theories and models that inform the study. The chapter derives methods of practising sign bilingual education as a strategy for the inclusion of deaf children in mainstream schools from the proposed theories and models.

Chapter Four: Research Methodology, Design and Data Collection

In Chapter Four, the research philosophy and paradigm on which the study is framed and the design used in the collection and analysis of data are proposed and justified. The chapter explicates the research design, techniques and procedures to be used in selecting participants and in collecting, presenting and analysing valid and reliable data. It explains the ethical measures that guided the study and generally presents the methodological frames of the study.

Chapter Five: Results and Discussion

In this chapter data collected are summarised, presented in tables, graphs and descriptive summaries and analysed using SPSS and thick descriptions. From the analyses, the major findings are drawn and discussed in interpolation with previous similar studies as a way of building on the existing knowledge bank on how sign bilingual education is a strategy for inclusion of deaf children in Zimbabwe.

Chapter Six: Summary, Conclusions, Recommendations and Limitations of the Study

Conclusions are drawn from the major findings and recommendations on how sign bilingual education can be best practised as a strategy for inclusion of deaf children in Zimbabwe are proffered in this chapter. An operational framework is proposed and further research on sign bilingual education is motivated. Those factors beyond the researcher's control, which might have clouded the study, are also highlighted.

1.15 CHAPTER SUMMARY

This chapter provided the general framework upon which the study is premised. The chapter set the tone of the study by articulating the background to the study and by conceiving the research problem and the motivation behind the study. The chapter situated sign bilingual education within Vygotsky's (1983) historico-cultural theory and Cummins' (1979; 1981) Linguistic Interdependence theory both of which are informed by the social model of disability. The operational framework of the study and the methodologies and methods were explained. In addition, a brief review of literature was undertaken and strategies and procedures for the whole process of the research were articulated. The successive chapter reviews literature on foundations and international perspectives of sign bilingual education.

CHAPTER TWO

FOUNDATIONS AND INTERNATIONAL PERSPECTIVES OF SIGN BILINGUAL

EDUCATION AS A STRATEGY FOR INCLUSION

2.1 INTRODUCTION

While the previous chapter provided a framework for the study, this chapter explores the conceptions, foundations, the underlying philosophy and the international perspectives of the relatively new and emerging sign bilingual education strategy for educating deaf children in inclusive settings. The chapter rationalises and justifies sign bilingual education as a strategy for inclusion and locates it within the appreciative aspects of the patrimony of Deafness and inclusion discourses. It examines the roles of both sign and oral languages in these regards. Literature in this chapter indicates that sign bilingual education was developed in Scandinavia and then evolved to the UK and the USA (Svartholm, 2010:159; Kermit, 2010:158; Dammeyer, 2014:110; Swanwick et al., 2016:3) and then to the rest of the world. This thesis attempts to also transcend these developments to Africa, with special interest in Zimbabwe in order to interrogate the extent to which sign bilingual education is a strategy for the inclusion of deaf children into mainstream schools in the country. Ultimately, the chapter derives best international practices in sign bilingual education and reflects on the challenges currently facing sign bilingual education in those countries that have established such programmes.

2.2 HISTORY AND EVOLUTION OF SIGN BILINGUAL EDUCATION

Historically, Sign Language was not recognised as a complete, functional and legitimate language and as such there could be no talk of sign bilingual education. The earlier conception about Sign Language was that it is a crude mimic and gestural system bound to the concrete and limited with respect to abstraction, humour and subtleties such as figures of speech which enrich expressions (Battison, 2016:5). In Russia, Vygotsky (1983), although he later

accepted that Sign Language is the natural language of deaf people, considered it a primitive impoverished and limited language that never aspired to abstract concepts and ideas (Vygotsky, 1983:78). Meanwhile, Stalin (1950:40), through his works on *Marxism and Questions of Linguistics*, asserted that deaf people were without language and, therefore, abnormal and that their manual language was not even a surrogate language. In the USA, it was not until the 1960s that Stokoe (1960) proved that Sign Language is a complete language which just like oral languages, has its own syntax, grammar, morphology and phonology; that it was recognised as a formal language, a tool for thinking, problem solving and social interaction (Tomanszewski, 2001:68; Cummins, 2006:2). This led scholars to rethink strategies for educating deaf learners such as sign bilingual education. In this context, the growing awareness of the full linguistic status of Sign Language through the 1970s led to the introduction of sign bilingual education in the 1980s (Mayer, 2009 in Rudner et al., 2015:8).

Mayer and Leigh (2010:175) confirm that sign bilingual education emerged more than two decades ago as a function of the legitimisation of Sign Language as a medium of instruction for the deaf. In the same vein, Garate (2014:38) points out that sign bilingual education advocates for the development of natural Sign Language and the majority spoken/written language. This new thinking on deaf education paralleled the emergence of an equally relatively new but broader philosophy of inclusion (Kusters et al., 2015:14; Hyde, 2013:4). From 1950 to about 1970, owing to the dominance of the behaviourist school, teachers believed that exposing deaf students to both speech and signing would help them develop English language skills from imitation of adult models as they regarded them as 'hearing impaired' people who required medical treatment and as charitable cases (Kusters et al., 2015:8). Lange, Lane-Outlaw, Lange and Sherwood (2013:1) report that it was during the same period when American Sign Language (ASL), for instance, was recognised as the natural and native language of the deaf. In the 1970s, educators of the deaf began to use signs more extensively within the context of total communication (TC), a philosophy which emphasised the use of all available means of communication with the deaf which included auditory and speech training, speech reading, finger spelling, writing, iconics and signing (Humphries,

2013:16). Total communication was, however, later discredited for its ambiguity and its practice of reducing Sign language to little more than a prop to help the deaf child comprehend oral English (Swanwick, 2010:148).

Between 1970 and 1980, Chomsky's (1965) theory of transformational grammar took the centre stage and teachers of the deaf began to see language as having different levels of structure and meaning but still relegated Sign Language to an auxiliary language for the deaf. These initial attempts resulted in the adoption of second language methods such as transformation and substitution drills which taught English in isolation from Sign Language (Humphries, 2013:13). This perpetuated the emergence and use of artificial signed systems for developing reading and writing skills among deaf students, particularly in the USA and the UK. The use of artificial signed systems, which is still widespread today, continued unabated until the 1980s and 1990s when bilingual-bicultural or sign bilingual programmes and emergent literacy approaches to teaching deaf students began to gain recognition more so in Scandinavia, the UK and the USA as a reaction to the failure of oral only methods (Swanwick, 2016:1; Lange et al., 2013:1; Kushalnagar et al., 2011:7; Mayer & Leigh, 2010:176).

Tang (2016:3) writes that back in the 1980s sign bilingualism was introduced in schools in Scandinavia, the USA, the UK and Australia and that it has since spread to other countries in Asia. Mayer and Leigh (2010:176) earlier on observed that, following the establishment of first sign bilingual programmes in the early 1980s, implementation was realised internationally in countries such as USA, Canada, New Zealand, Australia, the Netherlands and South Africa. Thus, although roundly debated and critiqued, the sign bilingual movement enjoyed a period of creativity and growth during the 1980s and 1990s in these countries (Swanwick et al., 2016:292). However, Lange et al. (2013:1) argue that, as early as the 1970s, a number of research papers and presentations in the USA (Erting, 1978; Kannapell, 1974; Stokoe, 1975; Woodward, 1978) already encouraged the exploitation and use of sign bilingualism. Tang (2016:2) concurs that, back in the 1960s and 1970s when sign linguistics emerged as a sub discipline of linguistics; deaf schools that first endorsed Sign Language

became the cradle of the initial development of sign bilingualism. Even then it was not until the late 1980s and early 1990s that schools in the Scandinavian/Nordic countries, the UK and the USA began to implement sign bilingual education in inclusive classes (Hsing, 2015:2; Swanwick, 2010:147) and researchers intensified investigations on the feasibility of using two languages with varying modalities to teach the deaf (Lange et al., 2013:1).

Swanwick (2016:1) also suggests that sign bilingual education is a relatively new strategy in deaf pedagogy which evolved in earnest in Sweden and later spread to Norway and Denmark and then to USA in the 1980s and UK in the 1990s. In other countries such as Brazil, sign bilingual education evolved as an effort towards the democratisation of the education of the deaf (Lodi, 2013:51). Today sign bilingual education programmes for the deaf are springing up all over the world (Kushalnagar, Mathur, Moreland, Jo Napoli, Osterling, Padden & Rathmann, 2012:7). Clearly the impetus behind sign bilingual education was the poor educational performances of the deaf (Swanwick, 2010:149; Cawthon, 2001: 213) and the observation that deaf children of deaf parents outperformed deaf children of hearing parents in academic achievement even in inclusive classrooms (Strong & Prinz, 1997; Hoffmeister, 2000; Padden & Ramsey, 2000 cited in Hermans et al., 2008:2). This is evocative of the need to interrogate how sign bilingual education can be used as a strategy for inclusion.

Since the Scandinavian countries, particularly Sweden, were the first to implement sign bilingual education, they have since become models for sign bilingual education practice in the world (Svartholm, 2010:160). Swanwick (2010:149) confirms that sign bilingual education programmes in Scandinavian/Nordic countries inspired other countries to follow suit. The goal of sign bilingual education programmes in the Nordic countries was for deaf children to become actively bilingual, with Sign Language successfully taught as their primary language and spoken language as their first foreign language (Bergman, 1994 & Mahshie, 1995 in Honna & Kato, 2003:48). The recognition and practice of sign bilingual education is spreading all over the world today but is still at experimental stages in the majority of cases and Plaza Pust (2005:1842) is emphatic that the emergence of sign bilingual education has marked a tremendous change in the theoretical frame and the history of deaf pedagogy particularly in

light of inclusive education and from the international perspective. Thus a detailed conceptualisation of sign bilingual education as a strategy for the inclusion of the deaf is critical in this context.

2.3 CONCEPTUALISATION OF SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION

Sign bilingual education which is also referred to as bilingual-bicultural, bimodal-bilingual, bi-bi education, deaf bilingual education, bilingual education for the deaf or alternatively sign bilingualism (Plaza Pust, 2005:1842; Hermans, Knoors, Ormel & Verhoeven, 2008:2; Tang, 2016:3) is a particular type of bilingual education where one of the two languages in use is Sign Language (Swanwick, 2016:3). In many cases sign bilingual education is referred to as bilingual education for the deaf or just bilingualism or even cross modal bilingualism. In the USA, it is at times prefixed as ASL/English (American Sign Language/English) and in the UK as BSL/English (British Sign Language) education (Svartholm, 2010:159; Mouny et al., 2013:333; Crume, 2013:2). According to Honna and Kato (2003:46), sign bilingual education presupposes use of Sign Language as the first language of the deaf and as the primary language for accessing oral language (reading and writing).

Tang (2016:3) implores that sign bilingualism (sign bilingual education) was originally associated with educating DHH students in deaf school settings via Sign Language to promote spoken language literacy. Sign bilingual education, therefore, presupposes and emphasises Sign Language on the premise that Sign Language is the most natural and accessible for the deaf (Enns & Herman, 2011:362). Garate (2014:38) concurs that sign bilingual education advocates for the development of the natural Sign Languages and the majority spoken/written language. The central theme in sign bilingual education is that both sign and oral languages are used and given equal status (Kermit, 2010:159; Knoors & Marschark, 2012:297). Thus, sign bilingual education or sign bilingualism entails acquisition of Sign Language as the first language for the deaf, recognition of the Deaf culture and mastery of the spoken language (through reading and writing) as the second language (Hsing, 2015:2).

Sign bilingual education is thus also characterised by a shared respect for each other's cultures and recognition of the central role of deaf adults (Swanwick & Gregory, 2007:7). For Swanwick (2010:148), sign bilingual education is an approach to the education of the deaf children in which two or more languages are used of which at least one is Sign Language and in which the Deaf culture is accepted and recognised.

Similarly, Mitchner (2015:52) defines sign bilingual education as using two languages in two modes, both visual and auditory that is, a Sign Language and a spoken language. More precisely, sign bilingual education is the strategy for educating deaf children in which both the Sign Language of the Deaf community and spoken/written language of the hearing community are used with Sign Language being the main medium of instruction and oral language being used for reading and writing (Nussbaum et al., 2012:14-15; Laird, 2003:2). Sign bilingual education differs from oral bilingual education in that it utilises both the aural-oral and the manual or visual modalities. On this aspect, Humphries (2013:8) elucidates that sign bilingual education is not only a bilingual proposition but a bimodal one as well. Swanwick (2010:148) emphasises that while the relative use of the two language modalities varies in different models of sign bilingual education, the essential feature is that each of the languages is recognised as distinct and is used differently. According to Hsing (2015:1), the central defining feature of sign bilingual education is the beneficial interaction of sign and visual languages and cultures and even of speech and hearing in richer inclusive and learning environments for both deaf and hearing young children. In these regards, sign bilingual education may also be defined as simultaneous production of two languages by means of code-blending or code-switching (Emmorey, Borstein, Thompson & Gollan, 2008; Emmorey & McCullough, 2009 in Mitchner 2015:2) to facilitate teaching and learning among both the deaf and hearing children.

In sign bilingual education arrangements, Sign Language for the particular country, for example American Sign Language (ASL) in USA, British Sign Language (BSL) in UK, South African Sign Language (SASL) in SA or Zimbabwe Sign Language (ZSL) in Zimbabwe, is used as

a medium for scaffolding the teaching of a written language (Glaser & Van Pletzen, 2012:4). This mixing of sign and spoken language in sign bilingual education is a language contact phenomenon and as such, a natural part of daily interaction even where Sign Language is the shared and fluent language for all (Swanwick, 2016:7). However, Humphries (2013:16) argues that sign bilingualism does not mean being able to use speech but being able to manipulate the majority oral language through reading and writing while being able to fluently use Sign Language for other instructional purposes.

Svartholm (2014:3) explains that sign bilingual education is, therefore, based on the assumption that deaf children do have Sign Language as their first language which acts as the base for teaching the society's spoken language in written form, and not speech, since written language is visually accessible but speech is not. However, speech is not totally excluded from the sign bilingual education matrix but is considered as a complement to Sign Language and written language and looked upon principally as a way of practising already existing knowledge of the spoken language (Svartholm, 2014:3). In some contexts, according to Humphries (2013:16), sign bilingual education is conceived as acceptance and inclusion of all the other oral languages brought to the classroom by the children as long as Sign Language remains the language of instruction and children are not segregated according to native language or communication practices. The major emphasis of sign bilingual education is that deaf children use both the minority language (Sign Language) and the majority language (in reading or written form) such that Sign Language remains the primary while spoken language is the second language (Garate, 2014:38).

Further, Garate (2012:3) conceives sign bilingual education as an educational approach which aims at developing social and academic proficiencies in both sign language and oral language. The author goes on to explain that sign bilingual education involves the incorporation of knowledge pedagogy and methodologies from bilingual strategies and treats oral language as a second language (L2) while stressing the importance of both sign and oral languages in the inclusive education of deaf children. Sign bilingual education thus thrives on the equitable

development of receptive and expressive abilities in both oral and manual modalities. According to DEAFVOC (2010:2) sign bilingual education is a strategy of deaf education which utilises competence in Sign Language functioning as a basis on which deaf students can build up proficiency in writing and other oral language, cognitive and social skills.

Sign bilingual education is not restricted to one sign and one spoken language only but can involve multiple such languages. Swanwick (2016:25) predicts that sign bilingual education in future is likely to involve more than one spoken and written language and that it would also entail numerous ways of combining sign, spoken and written language for different purposes. In Swanwick's (2010:148) conception, sign bilingual education involves a need to formalise the growing use of spoken, signed and manually coded languages in response to individual needs of deaf children and to articulate more clearly the use of Sign Language in education. In this alternative conceptualisation, Mayer and Leigh (2010:176) see the possibility of variously using cued speech and natural signed systems to access the majority spoken language, of course without the temptation of falling back to oralism.

Ultimately, Plaza Pust (2014:23) views sign bilingual education as an integrated set of language resources rather than as sets of skills in two separate languages. In the context of this study, sign bilingual education refers to an educational strategy where deaf children in inclusive setups in Zimbabwe are taught using Zimbabwe Sign Language (ZSL) for instruction and English, Ndebele, Shona or any other indigenous oral language used in the home and school for reading and writing. In this arrangement, ZSL and the oral languages will be given equal recognition and status. From the foregoing definitions, it is evident that sign bilingual education is informed by the philosophy of sign bilingualism or bicultural bilingualism or in Mitchner's (2015:52) and Swanwick's (2016:3) terminology bimodal-bilingualism. Plaza Pust (2014:25) insinuates that within this philosophical context, sign bilingual education in mainstream schools aims at ensuring access to the mainstream curriculum and inclusion of deaf students into the (hearing) community by recognising their cultural, social and educational needs.

2.4 THE PHILOSOPHY OF SIGN BILINGUALISM/ BILINGUAL-BICULTURALISM

The philosophy of sign bilingualism further derives from the broader domain of bilingualism. According to Pickersgill and Gregory (1998:2), sign bilingualism is more than an approach to teaching or language development. Instead, it is a worldview which challenges attitudes and assumptions underpinning deaf education and requires certain structural and organisational changes to schools and services. Part of the literature uses the terms sign bilingual education and sign bilingualism interchangeably but the correct position is that sign bilingualism is a more generalised philosophical term imbedded in the principles of inclusion and which incorporates specific policies and practices relating to language use. Swanwick (2010:152) asserts that sign bilingualism is a more nebulous term than sign bilingual education but explains that, in the policy framework for sign bilingual education in the UK, the term sign bilingualism is used without a clear differentiation from sign bilingual education, an indication of the newness of the concept. Higgins and Lieberman (2016:11) frame sign bilingualism as a philosophy with roots in the linguistic and cultural minority view of deafness and in the social model of disability. According to Humphries (2013:13), the interest of Deaf people as bilinguals is typified by Francois Grosjean's (1992; 2001; 2010) works which described bilingualism of Deaf people not only as the use of two or more signed languages but as 'a form of minority language bilingualism.' In this regard, sign bilingualism is based on the political recognition of equality of opportunity, value for societal diversity, cultural pluralism, empowerment, inclusivity and access to linguistic potential (Kusters et al., 2015:19).

Taking from Svartholm (2010:160), Mayer and Leigh (2010), Kusters et al. (2015:15-22), Swánwick (2010:150-152; 2016:7) and Tang (2016:3) sign bilingualism as a philosophy is premised on the following tenets:

- Equality of opportunity regardless of language, ethnicity, race, gender and disability.
- Equality of status of both Sign Language and spoken languages.
- Equality of partnership/membership between hearing and deaf students in the educational process.

- Recognition of diversity in society and the value of linguistic and cultural plurality of society.
- Recognition of the language and culture of the Deaf people.
- The goal of the removal of oppression and the empowerment of deaf people.
- Recognition that deaf children have the same potential for language and learning as hearing children and the right to access to the knowledge, skills and experiences available to hearing children in an appropriate and relevant curriculum.

Tang (2016:3) also adds that in the current order of sign bilingualism, the use of assistive technology is given more prominence than what traditional sign bilingualism offered in the past. To sum up, Mayer and Leigh (2010:176) insinuates that common to all sign bilingual education programmes is a heightened valuing of the language and culture of the Deaf, a focus on equality of educational opportunity, empowerment of the Deaf people and the recognition that deaf children have the same potential for language and learning as their peers in mainstream classrooms. These tenets of sign bilingualism or bimodal-bicultural bilingualism thus bear resemblance to those of the philosophy of inclusion. Odssey (2012:16) insinuates that sign bilingual education reflects the importance of including the language accessibility needs as well as the cultural and identity needs of deaf learners.

The conceptualisation of sign bilingual education, therefore, begins with the recognition of the multi-linguistic and multicultural nature of the population of deaf and hard of hearing children (Humphries, 2013:17). Mouny, Pucci and Harmon (2013:334) also concur that sign bilingualism recognises social identities in both languages and provides the deaf students opportunities to see themselves and their hearing peers as equal citizens in a linguistically and culturally diverse society. This makes sign bilingual education a critical potential strategy for the inclusion of deaf children. Sign bilingualism is, therefore, a philosophy which calls for the formalisation of the Deaf culture as a minority culture and Sign Language as a minority language which deserves equitable recognition within a pluralistic inclusive mainstream school (Kusters et al., 2015:8). Hogan-Brun (2009); Reagan (2010) and Swanwick (2010a) cited in Hult and Compton (2012:602) all assert that sign bilingualism embraces the centrality of

Sign Language in providing deaf students with opportunities to develop both Sign Language and the dominant oral languages of a society.

2.5 THE ROLE OF SIGN LANGUAGE IN SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION

Since Sign Language is the native language for the deaf, it plays a central role in the sign bilingual education matrix. Zaitseva et al. (1999:9) confirm that the recognition of Sign Language as a complete language is a powerful argument in favour of sign bilingual education. This is because, according to Emmorey (2002) cited in Swanwick (2016:6), research has demonstrated that Sign Language as a natural language fulfils the same linguistic, social and cognitive functions as oral language does in the sign bilingual setup. Vygotsky (1983), who initially had a negative attitude towards Sign Language, later concluded that Sign Language is a complex language with its own syntax, a very richly developed language fully capable of expressing abstract concepts including ideas, thoughts and facts of socio-political nature (Zaitseva, et al., 1999:11). This was way even before Stokoe (1960) made the same expressions in America. Vygotsky (1966b:95) viewed Sign Language as a genuine language with all the richness of function of such a language and discoursed that it is not only a means of interpersonal communication among deaf people but also a means of inner thought and cognitive processing. In the mains, Sign Language is a fully fledged indigenous or native language for the deaf which marks them as a linguistic minority, with cultural and group rights commensurate with those of oral minority language communities (Klaudia, 2013:342; Trovato, 2013:404; Batterbury, 2012:256; Leeson; 2006:7). This designates Sign Language as a cultural tool which deaf students in sign bilingual education use to express their needs and ideas. The role of Sign Language in sign bilingual education as a strategy for inclusion, therefore, revolves around facilitation of meaningful interaction, maintenance of cultural heritages, development of a positive self and social identity as well as educational accessibility (Dias et al., 2014:492; Brown, 2009:7).

In these regards, Svartholm (2014:70) implies that for the deaf children in sign bilingual education, Sign Language enables participation in dialogue and negotiation of meaning. Additionally, Wilbur (2000) in Swanwick (2016:16) reports that there is some consensus in the literature regarding the importance of Sign Language for providing early fluency in a language and developing the background and conceptual knowledge needed as a foundation for sign bilingualism. As such, deaf children who do not have full access to Sign Language frequently experience language deprivation which may compromise their language development, academic achievement and social inclusion (Kuntze, 1998; Kushalnagar et al., 2010; Mayberry, 1993; 2007; Mayberry & Eichen, 1991; Mayberry, Lock & Kazmi, 2002 all quoted by Mitchner, 2015:51). Contrary to earlier speculations that Sign Language may interfere with oral language acquisition, Davidson, Lillo-Martin and Pichler (2013:238) conclude that natural Sign Language does not harm but may mitigate negative effects of early auditory deprivation for spoken language development. Kermit (2010:64) also concurs that spoken language alone is not ethical for deaf children as they may risk double loss, since for one they maybe unnecessarily delayed in their lingual development. This is because deaf children in sign bilingual programmes use Sign Language to engage themselves in classroom learning and social interactions (Tang & Yiu, 2015:10).

Swanwick (2016:10) further emphasises that in sign bilingual education, Sign Language plays the role of mother tongue (L1) or dominant language. It then acts as a basis from which to develop literacy hence communication skills in spoken language (L2). In this context, the acquisition of Sign Language has proved to be effective in assisting the deaf children develop a solid language foundation for future academic learning and literacy skills development (The Centre for Sign Linguistics and Deaf Studies at the Chinese University of Hong Kong, 2013:3), hence social inclusion. In addition, Hermans, Knoors, Ormel & Verhoeven (2008:9) earlier found out that children with better Sign Language skills do read better and children who read better have enhanced Sign Language skills and social integration.

Sign Language is, therefore, used as the bridge for deaf children to develop reading skills and written spoken language (Higgins & Lieberman, 2016:13). Schonstrom (2010) in Rudner et al. (2015:10) corroborates this position by citing a Swedish study which demonstrated a positive correlation between Swedish and Swedish Sign Language (SSL) skills. The authors interpreted this as indicating that a well-developed Sign Language is important for the facilitation of successful bilingualism of deaf individuals. Chamberlain and Mayberry (2000) as well as Padden and Ramsey (2000) in Knoors and Marschark (2012:293) also present a strong argument that, if sign bilingual education per se has not been demonstrated to improve educational outcomes, then it has been shown that there is a positive correlation between Sign Language skills and reading proficiency for deaf children. This argument reinforces the facilitative role of Sign Language in sign bilingual education.

Related to its facilitative role, Sign Language also plays the role of providing an interactive interface with oral language. The Swedish Language Act (2009:299) cited in Swanwick, Hender, Dammeyer, Kristoffersen, Salter and Simonsen (2016:6), for instance, provides that, when Sign Language is given the same status as the majority language in sign bilingual education, it gives opportunities for cross language activities for both deaf and hearing pupils. In these regards, Sign Language allows for conceptually matched teaching input and the use of language comparison and analysis (Swanwick, 2016:6). This ultimately leads to better understanding and meaningful inclusion. WFD (2016:5) declares that Sign Language within a sign bilingual matrix enables deaf children to learn the surrounding spoken and written language and hence promote full access to the child's mental health development.

At a broader level, Sign Language plays the role of creating access to education and culture and overall development of the deaf children. Similarly, the issue of educational access through Sign Language is based on the premise that Sign Language is the natural language for the deaf and in sign bilingual education it is used as the main medium of instruction (Klaudia, 2013:341; Swanwick, 2010:148; Freel et al., 2011:18). In effect, Article 24 (2b) and 3c of the United Nations (2006) Convention on the Rights of Persons with Disabilities is equivocal that all deaf children should receive education through Sign Language because it is their right

(Mitchner, 2015:53). On this note, Leeson (2006:7) observes that the exclusion of signed languages from deaf education in many countries seems to be one of the most restrictive moves in limiting educational access for deaf children for who access to spoken language is very limited or completely inaccessible.

According to Dammeyer (2014:110), in Sweden where sign bilingual education is well established, deaf students use Sign Language to access and fully participate at all levels including tertiary education. For Stevens (2005:4), a deaf Belgian parliamentarian, deaf people cannot survive without Sign Language since they cannot access education and effectively communicate or participate in society without it. In agreement, Skutnabb-Kangas (2003:3) argues that since Sign Language is the native tongue for the deaf, using oralism in the education of deaf children is linguistic genocide as it practices subtractive teaching by withholding Sign Language which is the most accessible language for the deaf. It provides access to the mainstream curriculum (Yin, 2015:2; Swanwick, 2016:2) and to the hearing environment that characterises the mainstream school (Kermit, 2010:157).

Thus, the other role of Sign Language in sign bilingual education is to enable deaf children to naturally adapt to the curriculum content and to interact more meaningfully with their peers and teachers (Heslinga, 2012:7&8). Higgins and Lieberman (2016:13) add that Sign Language also enables deaf children to gain social competence within inclusive sign bilingual settings. Sign Language thus plays the role of providing access to the socio-cultural sphere for the deaf. Similarly, Mweri (2014:3) believes that Sign Language is a natural means of interpersonal communication among deaf people and as a result, it is the natural means of acquiring social experience and, therefore, an objective reality for the deaf and for the education systems particularly for sign bilingual programmes. In a way, Sign Language performs similar roles for the deaf as spoken language for the hearing. It facilitates communication, conveys social interactions and expresses cultural identity for the deaf children (South African National Deaf Association, 2016:2). In sum, Sign Language in sign bilingual education is a valued and irreplaceable tool necessary for the development of literacy skills hence social interaction,

academic participation and inclusion (Ausbrooks et al., 2014:2). However, knowledge, acquisition and development of the majority oral language are also significant in these regards.

2.6 THE ROLE OF SPEECH IN SIGN BILINGUAL EDUCATION

Svartholm (2014:3) contends that the concept of L2 in sign bilingualism is presumed to be mainly the written language form of the society's language, not speech, simply because written language is visually accessible to the deaf but speech is not. However, Hermans et al. (2008) in Swanwick (2016:12) emphasise that the role of speech, specifically phonological awareness, should not be overlooked in relation to the reading development of deaf children who use sign bilingualism. Earlier on, Kushalnagar et al. (2012:5) declared that there are important benefits for a deaf child to be exposed to speech. They noted a positive correlation between phonological awareness and educational achievement and ability to function communicatively, even to a minimal extent, in a hearing environment leading to social acceptance and inclusivity.

Hermans et al. (2008) and Holzinger and Fellingner (2014) cited in Swanwick (2016:12) all agree that emerging empirical evidence aimed at the lexical and grammatical levels and pointing to the possibility of transfer between sign and spoken languages suggest the important role of speech in sign bilingualism. After all, due to the emergence of hearing technologies, such as cochlear implants (CIs), speech has become more accessible to deaf children, although there still remains the question as to the extent to which it will be accessible and achievable for all of the deaf children (Mayer & Leigh, 2010:183). Kushalnagar et al. (2012:5) concur that when the child is benefitting from the use of a hearing aid or CI, speech can aid the child's sign bilingual education developmental plan. However, the authors are quick to advise that this should not be exercised to the exclusion of Sign Language.

In the same vein, Tang and Yiu (2015:1) argue that since spoken and sign languages are given equal status in sign bilingual education, it follows that both languages have important roles to play in their own individual rights. Thus, the role of speech in sign bilingual education for the deaf is to compliment Sign Language and written language and not to aid the learning of the language as such (Svartholm, 2014:3). It is looked upon principally as a way of practising already existing knowledge about language. For Tang (2016:10), the facility of using speech to communicate in a sign bilingual context also creates a new capacity for the deaf children to code-switch or code-blend when interacting with either deaf or hearing people in the mainstream environment.

2.7 THE CONTEXT OF THE PATRIMONY OF DEAFNESS IN SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION

The analysis of the centrality of Sign Language to the philosophy of sign bilingualism is reflective of a link between the politics of the collective patrimony of Deafness and sign bilingual education as a strategy for inclusion of deaf children in mainstream schools. Sign language is the central theme that defines the collective nature of Deaf people and is key to the practice of sign bilingual education. It is thus pivotal in the conceptualization of Deaf community, Deaf culture, Deafhood and Deaf Gain which are all implicit in sign bilingualism. Lane, Hoffmeister and Bahan (1996), Padden and Humphries (1988) in Batterbury (2012:256), concur that a close analysis of Deaf communities highlights their collective linguistic and cultural patrimony. Central to this patrimony is Sign Language which becomes the defining attribute of Deaf culture.

The concept of Deaf culture is also pillared on Deaf enterprise, collective consciousness and community actualization (Ladd, 2003:27). Wrigley (1996:115) believes that by recasting the meaning of Deafness in positive terms, by reclaiming the authority of directly lived experiences, Deaf people the world over are making clear political claims to selves and collective determination. This collective determination is expressed through Deafhood

consciousness and by using Sign Language as an interactive, cultural, educational and liberating tool to achieve a Deaf identity (Hyde et al., 2006:416). Sign bilingual education, therefore, provides this opportunity and is evocative of the central perspectives of the patrimony of deafness (Humphries, 2013:9). For this reason, sign bilingualism is widely accepted by the Deaf communities since it is regarded as the medium for ensuring group and individual rights to education for the deaf children (Kusters, 2015:22). In effect, sign bilingual education creates an environment which values Sign Language, deafhood and deaf culture (Swanwick, 2016:2).

In other words, Deafhood is a consciousness concept that involves the process and reconstruction of Deaf traditions related to becoming and maintaining Deaf identity (Faber, 2015:12; Leigh, 2009:19) while at the time participating and belonging to the wider society. The term Deafhood also encompasses the collective beliefs, values, a sense of normality, pride and confidence that Deaf people today aspire for and continuously articulate via Sign Language discourses and political expressions (Hauser et al., 2010:487; Young & Hunt, 2011:1). Therefore, in educational settings sign bilingual education provides an opportunity for such expressions and at the same time enables the Deaf children to maintain their national citizenship through inclusion. According to WFD (2011:1), sign bilingual education is the only way for deaf children to gain equal opportunities and allow them to become full citizens in their own rights. The Federation is, however, conscious that in order to function in society it is also essential for deaf children to become proficient in the majority oral language of that country.

Within the same discourse on Sign Language and sign bilingual education, a new concept of Deaf Gain has emerged to enable scholars in Deafhood to summarize the appreciative attitudes toward Deaf people who use Sign Language (Bauman & Murray, 2014:263). The authors define Deaf Gain as a reframing of 'deaf' as a form of sensory and cognitive diversity that has the potential to contribute to the greater good of humanity. The gains are framed within cognitive, creative and cultural diversity which is pinned on Sign Language as a new

language in a family, mainstream school or social experience. This suggests that sign bilingual education, as a strategy for inclusion, also benefits hearing parents, teachers and children to interact with the deaf world. Baum and Murray (2014:263) elucidate that Deaf Gain is conceptualized along the same semantic concepts of 'benefit', 'contribute' and 'ahead'. For Batterbury (2012:256) Deaf Gain requires greater levels of social inclusion through language access, sign bilingual education, and promotion of the deaf children's linguistic patrimony thereby enabling a process of regeneration of the Deaf community and Deaf culture. Such an ideological shift expresses Sign Language in a positive manner and as a tool for progressive development which is achievable through sign bilingual education experience. According to Krausneker (2015:422), with the advent of sign bilingualism, maintaining devaluating, audistic or stereotyping ideologies with regards to Sign Language will in the end be more of an effort than seeing, understanding and appreciating Deaf Gain. In these circumstances, sign bilingual education appears to be one educational strategy in the history of deaf education which has appealed to the patrimony of Deafness while at the same time offering access to mainstream through the process of inclusion.

2.8 THE PHILOSOPHY OF INCLUSION

Inclusion entails accommodating all children with diverse needs and cultures within the mainstream of the education system. In educational settings inclusion is particularly conceived as inclusive education. Hyde (2013:7 & 9) posits that inclusion is often described as the outcome of a process of providing for social and personal learning needs and participation of all students including those with special needs. By definition, inclusive education is an educational approach and philosophy that provides all students with community membership and greater opportunities for social achievement (Nevada Partnership for Inclusive Education, 2016:2). Inclusive education is, therefore, a process of addressing and responding to the diversity of needs of all learners through increasing participation in learning, cultures and communities and reducing exclusion within and from education (Republic of Namibia, 2013:6; Bagga-Gupta, 2007:5). Unlike, integration, inclusive education is concerned with strategies of transforming educational systems and environments to become responsive to the diverse

student population such as those who use Sign Language and other communicative expressions that occur in different cultures (Heslinga, 2012:3).

In this way, inclusive education is a system that thrives to promote the improvement of educational and social frameworks to cope with new trends in educational structure (such as sign bilingual education) in order to achieve quality education for all (UNESCO, 2005:16) within regular schools. UNESCO (1994:3) in the Salamanca Statement and Framework for Action on Special Needs Education promulgates that, regular schools with this inclusive orientation are the most effective means of combating discriminatory attitudes, creating, welcoming communities building an inclusive society and achieving education for all.” For the deaf, sign bilingual education creates these opportunities. Thus, inclusive education can also be viewed as a process of strengthening the capacity of the education system to reach out to all learners (UNESCO, 2009:9) while at the same time leaving open the possibility of personal choices and options for special assistance and facilities for those in need (UNESCO, 2005:15).

Further, inclusive education involves adopting a broader vision of Education For All (EFA) by addressing the wide spectrum of educational needs of a diverse student population (UNESCO, 2005:11). Ultimately, this would lead to the achievement of Millennium Development Goal Number 2 on universal primary education set forth by UNDP (2000) which was replaced by Sustainable Development Goal Number 4 on quality education (UNDP, 2015:7) and of late the Incheon Declaration on Inclusive and Equitable Quality Education and Lifelong Learning for All (2015). The UNESCO World Declaration on Education for All (2005) together with the Dakar Framework for Action (2000) view inclusive education as a proactive means of achieving educational equity and of identifying and resolving barriers to access to educational opportunities of which for deaf children this may be possible through sign bilingual education. UNGEI (2010:6) implores that, at the core of inclusive education is the human right to education as promulgated in the United Nations (1948) Universal Declaration of Human Rights. Similarly, sign bilingual education is a rights and policy issue since becoming bilingual is a right for the deaf (Svartholm, 2014:3). For this reason, inclusive education features

prominently in the United Nations (1989) Convention on the Rights of the Child and in the United Nations (2006) Convention on the Rights of Persons with Disabilities (CRDP). Article 3C of the CRDP emphasises full and effective participation and inclusion of persons with disabilities in society.

In these regards, the implementation of inclusive education is founded on a set of right based principles of access to quality education, content and process and to equality in conjunction with practical ideas and strategies (such as sign bilingual education for the deaf) to guide the transition towards policies addressing inclusion in education (Kusters et al., 2015:18; UNESCO, 2005:11). Meanwhile, Article 24 of the CRDP (2006) calls for reasonable accommodations, individual support measures, universal design and accessibility as the basis for inclusion. Sign bilingual education as a rights and policy issue for the deaf similarly affords social (Humphries, 2013:18), linguistic and cultural (Hyde et al., 2006:416; Swanwick, 2016:2) access to the educational environment.

Just like inclusive education, sign bilingual education holds pluralistic goals which affirm individual and group language rights for the deaf (Roberts, 1995:371). The United Nations (1989) Convention on the Rights of the Child, Article 23 actually stipulates that, children with disabilities should have effective access to and receive education in a manner conducive to the child achieving the fullest possible social integration and individual development, including his/her culture and spiritual development. Salient to this provision, UNESCO (1994:8) in paragraph 21 of the Salamanca Statement and Framework for Action on Special Needs Education recognises the importance of Sign Language as the medium of communication among the deaf. UNESCO further emphasises that educational policies should, therefore, ensure that all deaf children have access to education in their national Sign Language, and for deaf children this is possible through sign bilingual education. From the fore going, there is a way in which sign bilingual education can be contextualised within the inclusive education framework as is demonstrated in the following section.

2.8.1 The Context of Sign Bilingual Education within the Philosophy of Inclusion

Sign bilingual education, is a new strategy aimed at improving the learning conditions and inclusivity of deaf children in mainstream schools. This is done by increasing participation and inclusion of deaf children through the use of Sign Language (Yiu, 2015:1). Equally new, inclusion is a philosophical vision which when framed within deaf education discourses is conceived as inclusive education, a process of responding to the diversity of needs of learners by increasing participation in learning (UNESCO, 2005:13; Hyde, 2013:4). This is achieved through the use of educational strategies that respond to the diverse learning styles of a diverse population of students (Nevada Partnership for Inclusive Education, 2016:3). Mayer and Leigh (2010:175) argue that the advent of new born hearing screening in conjunction with advances in amplification technology, for instance, and the move towards inclusive education have had profound impact on opting for sign bilingual education as a preferred option of educating the deaf these days. This shift to inclusive education for the deaf has resulted in more and more DHH students receiving their education in mainstream schools via sign bilingual education (Tang, 2016:5).

Swanwick (2010:148) suggests that sign bilingual education emerged as a response to the increasing recognition of deaf children's diverse language and cultural backgrounds and was seen as a strength and not a hindrance in the learning and inclusion of deaf children in mainstream schools. In addition, Kusters et al. (2015:14) note that the spread of the concept of inclusion has been another recent phenomenon in the academic and policy contexts of issues relating to the diversity of children with disabilities. It is thus not by mere coincidence that the emergence of sign bilingual education has paralleled the movement towards inclusive education. Instead, it is because the two are intricately related particularly by that they are both issues of human rights and policy and they both aim to respond to the diversity of student needs (Lodi, 2013:60; Hyde, 2013:5).

Kusters et al. (2015:25) argue that, for effective inclusion of deaf children, there is a need for a broader definition of inclusion as social inclusion. This is because the authors believe that

social inclusion promotes sign bilingual education and that it ensures both individual and collective rights. Consequently, The Chinese University of Hong Kong (2013:6) contends that deaf children whether in special or inclusive school settings have a right to sign bilingual education. In effect, sign bilingual education is meant to enable deaf learners to participate in mainstream educational processes, mainstream and Deaf communities (Bagga-Gupta, 2010:262; Svartholm, 2010:157). For that matter, Tang (2016:3) declares that sign bilingual education can be established in regular school settings within the general rubrics of inclusive education for the deaf.

It is from these foregoing analyses that the WFD (2011:2) frames inclusion for the deaf as a means of giving them the opportunity to achieve full potential without encountering barriers. Sign bilingual education has potential to address these barriers which are often social, linguistic and cultural related (Tang & Yiu, 2015:4). WFD (2013:2), therefore, endorses sign bilingual education as the only means by which deaf children in inclusive settings could gain equal opportunities to learning and social interaction. Further, just like inclusive education, sign bilingual education does not encourage segregation of children according to communication, linguistic and/or cultural orientation. Humphries (2013:18) elaborates that sign bilingual education, just like inclusive education, requires collapsing of categorisation of learners and enlargement of the community of learners who interact with each other rather than segregating them to create small groups of socially and culturally isolated deaf children. As such, in sign bilingual education, the child is the main focus of the educational processes in that sign bilingual education reflects on the language accessibility needs as well as cultural and identity needs of deaf learners (Nussbaum et al., 2012:16).

In other words, the conceptualisation of inclusive education makes sign bilingual education a relevant strategy for facilitating the inclusivity of deaf children within mainstream schools (Swanwick et al., 2016:294). In Batterbury's (2012:256) view, greater levels of social inclusion of the deaf require language access, sign bilingual education and promotion of the linguistic patrimony of the deaf. According to UNESCO (2005:15), four elements feature prominently in

the conceptualisation of inclusion. These elements bear resemblance to the tenets of sign bilingual education. The first element is that inclusion is a process. This, according to UNESCO (2009:8), implies that inclusion is a never ending search for better strategies for responding to diversity and for learning about and from difference as a stimulus for fostering learning and social integration. Inclusion calls for tolerance and accommodation of diverse groups of children with varying identities and cultural differences (Singh, 2016:3229; Hwang & Evans, 2011:138).

Thus, the tolerance and accommodation of deaf children in a mainstream school system can be realised through the use of sign bilingual education since it recognises the need for the use of Sign Language as their native language and the Deaf culture as central to their socialisation (Skelton & Valentine, 2003:456). Sign bilingual education is founded on the belief of plurality of cultures and linguistic abilities (Mouny et al., 2014:334) as the bases for inclusion of the deaf children. In this context, sign bilingual education is not synonymous to Special Education but is a process of using the native Sign Language and the majority language of a country as a way of responding to the diversity of learners in inclusive settings (Kusters et al., 2015:18) and therefore as a strategy for achieving inclusion.

Tang (2016:5) argues that sign bilingual education is in tune with the philosophy of inclusion, creates opportunities for ample, dual naturalistic input to trigger early bilingual acquisition of not only the DHH students but of hearing students and teachers as well. In this arrangement, Sign Language holds a clear status and functions as the language of instruction for the deaf and a tool for communicating with peers and teachers and for accessing the oral based curriculum (Swanwick, 2010:148; Freil et al., 2011:18). This reflects on sign bilingual education as part of the process of inclusion of deaf children into mainstream school, since sign bilingual inclusive programmes have been found to be beneficial for both hearing and deaf children (Hsing, 2015:6). It is for these reasons that an increasing number of programmes in the world attempt to bring sign bilingual education in line with inclusive education (Centre for Sign Linguistics and Deaf Studies at the Chinese University of Hong Kong, 2013:1).

The second element in the conceptualisation of inclusion which contextualises sign bilingualism is the concern for identification and removal of barriers. According to UNESCO (2005:15) inclusion involves collecting, collating and evaluating information from a wide range of sources in order to reform policies and practices based on evidence. This would stimulate creative ways of responding to diversity and of reducing barriers to participation and learning (UNESCO, 2009:3). For the deaf children, the major barrier to participation and learning is use of monolingual strategies and one creative way of countering this barrier is use of sign bilingual education as a strategy for inclusion (Hsing, 2015:6). Hyde et al. (2006:424) implore that the isolated use of oral language and Sign Language in the mainstream school creates barriers to shared communication, socialisation, cooperative learning and building of relationships. Instead, sign bilingual education breaks these barriers and therefore guarantees inclusivity by exposing both hearing and deaf children to both languages (Tang, 2016:7). Meanwhile, Swanwick et al. (2016:1) agree that sign bilingual education as a current preferred strategy for the inclusion of deaf children is a new model situated within a global view of language culture that recognises deaf children's multimodal and multilingual resources. Such framing of sign bilingual education can be viewed as a way of reducing linguistic and cultural barriers experienced by deaf children in mainstream schools (Republic of Namibia, 2013:6) as proposed in the philosophy of inclusion.

The third element in the conceptualisation of inclusion is concerned with the presence, participation and achievement of all students. In this context, inclusive education ensures that all children have a place to learn within the regular school and are enabled to enjoy quality experiences that reflect on positive outcomes across the curriculum (UNESCO, 2005:15). Singh (2016:3224) adds that inclusion ensures that all children have greater opportunities for academic and social achievement. In these regards, several scholars (Plaza Pust, 2005:1843; Swanwick, 2010:1487; 2016:3; Mitchner, 2015:15; Kermit, 2010:161; Butterbury, 2012:256; Honna & Kato, 2003:41; Hsing; 2015:1) have reported that sign bilingual education has

similarly emerged as a response to monolingual practices which tended to discriminate against deaf children in mainstream settings.

For Jaffe (2007:225), when inclusion is used, the schools become micro ecologies of linguistic, social, political and pedagogical practices. In response, sign bilingual education gives deaf children an opportunity to learn both sign and oral language, hence grants them access to these ecologies and to the mainstream curriculum (Swanwick, 2016:3). In the same vein, Knoors and Marshark (2012:292) see inclusive education as a social desire and necessity for deaf children to eventually integrate into the larger society. From this analysis, sign bilingual education can be safely contextualised within inclusive education practices. Related to the third element that contextualises sign bilingual education within the inclusive education framework, the fourth element emphasises groups of learners (for example the deaf) who may be at risk of marginalisation, exclusion and or under achievement. Accordingly, UNESCO (2005:16) upholds that the moral responsibility of schools and other education stakeholders is to ensure that 'at risk' children (including the deaf) are carefully monitored and that steps are taken 'to ensure their presence, participation and achievement in the education system.' Consequent to this, Humphries (2013:17) believes that sign bilingual education is the only existing 'educational schemata' which is most compatible and which ensures that inclusion of the deaf in mainstream schools is effective. In addition, sign bilingual education is the specific, most tolerant strategy for achieving inclusion of deaf children in mainstream schools (Kusters et al., 2015:19).

Meanwhile, according to Mastropieri and Scruggs (2000:23), inclusion is, therefore, simply the fairest, ethical and equitable thing to do, and for Winzer (2000:9) it is just the right thing to do. For the deaf children, they must be exposed to sign bilingual education (Swanwick, 2016:2) which affords them opportunities to learn both Sign Language and the majority oral language (reading and writing) (Honna & Kato, 2003:46; Adoyo, 2007:4; Humphries, 2013:13) in order to enable their inclusion in the mainstream school. This is because sign bilingual education in inclusive contexts is one way of comprehensively encompassing the needs of

deaf students psychosocially, communicatively and culturally from the use of Sign Language in regular classes (Hyde, et al. 2006:424). Therefore, this systematic context of sign bilingual education reflects on its potential as a strategy for inclusion. The following section consequently examines the rationale and justification for sign bilingual education as a strategy for inclusion.

2.9 RATIONALE FOR AND JUSTIFICATION OF SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION

As has already been mentioned elsewhere in this thesis, the major impetus for the emergence of sign bilingual education has been the need to respond to poor results and the exclusive nature of aural-oral only methods (Svartholm, 2010:159; Swanwick, 2016:1; Mitchner, 2015:51-52). New research (Svartholm, 2010:172; Hult & Compton, 2012:616; Swanwick, 2010:153; Mayer & Leigh, 2010:176; Humphries, 2013:26; Menken & Solorza, 2014:117, Yiu, 2015:2&5; Tang & Yiu, 2015:4; Hsing, 2015:5; Swanwick, 2016:2; Tang, 2016:3) has actually found a strong case for sign bilingual education as a strategy for academic and social development and hence for inclusion. For Dammeyer (2014:110) the change to sign bilingual approaches was made because of the discouraging results from educating deaf pupils only by speech with a focus on training phonological skills.

Tang (2016:3) emphasises that sign bilingual education traditionally stemmed from the concern for developing a linguistic and cultural model of deafness using the premise that Sign Language is the first language for the deaf and hence sign bilingual education had to be devised to legitimise the use of Sign Language in inclusive deaf education settings. Kermit (2010:154) also adds that the main political argument for sign bilingual education is based on the historic notion of the poor outcomes of speech and aural-oral only rehabilitation before the emergence of cochlear implants. Sign bilingual education as a strategy for inclusion gives deaf children new opportunities to be exposed to Sign Language since they cannot use spoken language with ease (Kushalnagar et al., 2010:149). The authors conclude that the rationale

for sign bilingual education draws on principles of bilingual and multilingual communication from around the world and that sign bilingual education is superior to monolingual education. To this effect, Garate (2014:37) reports that new evidence is constantly being presented showing that dual linguistic exposure enabled by sign bilingual education can result in mental flexibility, creative thinking and communication advantages for deaf children. Kermit (2010:154) and Knoors and Marschark (2012:292) also explain that sign bilingual education is not a political or philosophical issue but a means of providing deaf children with the best possible opportunities for educational and personal success.

When the discouraging results of oralism persisted, despite the development of better hearing aids and advanced cochlear technology in line with extensive technical developments since the 1950s, the need for the call for sign bilingual education arose (Svartholm, 2010:160). According to Swanwick, Hender, Dammeyer, Kristoffersen, Salter and Simonsen (2016:2), sign bilingual education was then introduced with the goal of ensuring early language acquisition, equal access to the curriculum, successful inclusion of deaf children into the mainstream school and integration into the wider community. The authors also assert that sign bilingual education, therefore, has implications for practice and professional development of a more plural view of language, learning and deafness that situates deaf children's multimodal and multilingual development within a contemporary view of inclusive bilingualism. In other words, the general rationale for sign bilingual education was the need to respond to the needs of children with diverse language and cultural needs within inclusive settings (Giambo & Szecsi, 2015:56). Consequently, Swanwick (2016b:1) feels that the changing climate of deaf education propelled the cause for bilingual education. In sum, the linguistic needs of a deaf child call for language exposure in both oral and manual modalities hence sign bilingual education shows more promise and is the wave for the future (Kushalnagar et al., 2010:148 & 149).

The rationalisation of sign bilingual education is also based on the notion that it is a flexible option for deaf children to develop cognitively (Giambo & Szecsi, 2015:56) and to practise

their linguistic and cultural right within inclusive settings (Humphries, 2013:14). Sign bilingual education is in effect a multi-sensory approach which has the potential to effectively support the overall development of deaf and hard of hearing children (Nussbaum et al., 2012:14). Leeson (2006:8) observes that in many countries the introduction of sign bilingual education has co-occurred with societal change in attitude towards the status of Sign Language and the emergence and appreciation of the philosophy of inclusion. This is because the rationale for sign bilingual education, according to Kushalnagar et al. (2012:7), draws on principles of bilingual and multilingual communication from around the world. Even at its infancy, sign bilingual education was seen as an unavoidable and highly productive path of language development and education in the deaf child (Vygotsky, 1983:217). Specifically, sign bilingual education is justified on the basis that it has potential to cater for individual needs and interests of the deaf children, enable social and cultural acceptance, improve language and communication development, and facilitate curriculum accessibility and responding to the changing dynamics of deaf pedagogy.

2.9.1 Responding to the Child's individual Needs and Interests

Sign bilingual education aims to serve the best interests of the deaf child. Kermit (2010:159) maintains that recognising the deaf child as bilingual and making a strong effort to provide him/her with sign bilingual education may be a good way to secure the best interests of the child. For Leeson (2006:165), sign bilingual education is flexible and can be adapted into an individually oriented approach and has a theoretical potential to promote the individual needs and interests of the child and thus improve his/her inclusion into the mainstream school. In the same context, a study by Knoors and Marschark (2012:299) concluded that sign bilingual education has merit and is one that should be considered for deaf students in mainstream schools and particularly those of hearing parents. The results of the study supported the efficacy of sign bilingual as an effective individualised instructional delivery model which promotes language development and inclusivity.

2.9.2 Social and Cultural Acceptance

Related to the ability of sign bilingual education to enable teachers to cater for individual needs of deaf children, it also creates flexibility of social interactions and development of cultural identity. The flexibility enjoyed by deaf students in sign bilingual education setups does not only enable academic performance but also linguistic, cultural and social development. In a study, Hsing (2015:3) found out that parents of hearing children accepted sign bilingual education and that the deaf children enjoyed it because of its social and cultural flexibility. Sign bilingual education also provides the best possible opportunities for the deaf children to achieve social inclusion, educational access and personal success further justifying the logic of locating it within the context of inclusion (Swanwick et al., 2016:294; Knoors & Marschark, 2012:292).

According to Skolverket (2002:14), sign bilingual education creates conditions to share experiences, views, knowledge and skills among the deaf and hearing within a flexible and more inclusive classroom environment. It allows for acceptance of the deaf children and at the same time influences the deaf children to regard their deaf peers as equals. Gregory (2006:3) posits that sign bilingual education encourages the involvement of the deaf as well as the hearing and the recognition of both the Deaf and hearing cultures. Yiu and Tang (2014) cited in Yiu (2015:4) studied the social acceptance between the deaf and hearing children in sign bilingual programmes and concluded that sign bilingual education facilitates positive peer acceptance, healthier peer interaction in the classroom and positive attitudes toward others and toward self. In the same vein, Humphries (2013:19) also believes that sign bilingual education optimises cultural interchanges between the deaf and the hearing thereby facilitating social interaction. In addition, the author emphasises that sign bilingual education enables robust and frequent peer interactions which enhance social development, social learning and inclusivity. This is corroborated by Schick et al. (2006) in Tang (2016:5) who articulate that, without sign bilingual education, DHH children have very little chance for participating in classroom discussions and social interactions.

A number of studies on sign bilingual education cited by Swanwick et al. (2016:2) have also reported improved identity and psychosocial well-being (Bagga-Gupta, 2000; Dammeyer, 2010) due to early development of language and communication (Lewis, 1995; Mahshie, 1995; Smith, Gregory & Wells, 1997) and improved peer interaction in the classroom (Kristoffersen & Simonsen, 2012, 2014). Similarly, Bat-Chava (2000) and Hintermair (2008), both cited in Mitchner (2015:52), concur that sign bilingual education facilitates participation in both the Deaf and the hearing cultures which in turn promotes positive psychological skills which are critical for the inclusion of deaf children. Quite importantly, sign bilingual education maintains the cultural identity of deaf children (Nausbaum et al., 2012:16). In these regards, WFD (2016:3) believes that sign bilingual education promotes accessibility to all spheres of social, economic, cultural, political and civil life and enables full access to quality education. This has made sign bilingual education a preferred and popular educational strategy for inclusion even among Deaf communities (WFD, 2011:1).

As a result of the foregoing arguments, Humphries (2013:17) declares that sign bilingual education is the only existing educational schemata with which schooling in Sign Language seems compatible and, therefore, appealing strongly to the Deaf peoples themselves. As such, WFD (2013:1) endorses sign bilingual education as a key factor in fulfilling the human rights of deaf people and believes is the best and most intelligent strategy for the Deaf people because of its most natural way of educating deaf children. In the absence of sign bilingual education, WFD (2013:2) prefers that deaf children be educated in special schools for the deaf where teachers are fluent in Sign Language. This would, however, be at variance with the spirit of inclusion. Freil, Anderson, Clark, Gilbert, Musyoka and Hauser (2011:18) argue that in contrast to the deficit model which uses strategies developed for hearing children alone to teach deaf children, sign bilingual education has been suggested as the most appropriate strategy for teaching deaf individuals in inclusive schools. This is because it recognises deaf persons as a cultural group with a complete language of their own (Higgins & Lieberman, 2016:9; Klaudia, 2013:342; Swanwick, 2010:149; Trovato, 2013:402) but at the same time exposing them to the majority culture of the surrounding community (Svartholm, 2014:7 &

8). In essence, according to Humphries (2013:14), the diversity of linguistic and cultural heritages that characterise inclusive classrooms today adds to the justification of the paradigm shift from special education pedagogy to a sign bilingual pedagogy for deaf children. On the whole, Yiu (2015:2) notes that sign bilingual education also leads to the development of a sense of true membership in class, improved deaf-hearing interactions and on-task engagement.

2.9.3 Language and Communication Development

With regards to language, literature is replete with studies that have recorded encouraging results suggesting the efficacy of sign bilingual education in bridging the communication gaps that act as barriers to the inclusion of deaf children into mainstream schools. Yiu (2015:2) believes that sign bilingual education is a promising and valuable option for effectively lowering communication barriers possessed in regular classrooms. For Hult and Compton (2012:616) sign bilingual education makes the mainstream settings robust domains for language development. Knoors and Marschark (2012:299) concur that sign bilingual education offers deaf children the opportunity for continuous exposure to language and reduces the possibility of communication being compromised and learning and inclusive opportunities being missed. It promotes direct communication between the deaf and hearing children and their teachers (Kirchner, 2014 in Yiu, 2015:2) within inclusive settings. This, the deaf children do not do by learning to speak the oral language but by learning the literacy skills of reading and writing (Mweri, 2014:5) and then using Sign Language for scaffolding these literacy skills (Glaser & Van Pletzen, 2012:4) and gaining access to the hearing environment. Thus sign bilingual education mutually encourages the development of both languages and leads to improved social and academic interchanges in the mainstream classroom (WFD, 2016:5). Accordingly, sign bilingualism is an advantage to both deaf and hearing children since exposure to Sign Language does not hinder the development of spoken language but instead has demonstrated cognitive, social and scholastic advantages for both (Kushalnagar et al., 2010:148).

Mitchner (2015:52) reports that by using multiple linguistic measures in a longitudinal study, Rinaldi and Caselli (2014) confirmed that sign bilingual education offered opportunities for Sign Language to support the acquisition of spoken/written language thereby facilitating communication among the deaf and hearing. Meanwhile, Hyde and Punch (2011) in Mitchner (2015:52) point out that sign bilingual education enables access to both languages which allows learners to have communication options during social and academic interactions leading to successful inclusion. In effect, sign bilingual education affords the deaf child with the added benefit of adapting to both signing and non-signing peer groups with greater ease (Kushalnagar et al., 2012:7). This, according to the authors, can result in better overall socio-emotional and behavioural development. Humphries (2013:13) further justifies sign bilingual education pedagogies on the basis that deaf children may not have been exposed to a visual language at home and may not have had sufficient access to a spoken language after all. According to Mitchell and Karchmer (2004) in Higgins and Liberman (2016:12), this is because about 95% of the deaf children are born to hearing parents meaning that these children may not have had access to Sign Language while the 5% deaf children of deaf parents may have lacked exposure to spoken language. Similarly, Knoors and Marschark (2012:295) believe that deaf children of deaf parents may also have insufficient Sign Language to profit from oral only or Sign Language only didactical strategies.

Sign bilingual education, therefore, becomes the most likely flexible strategy which could offer these children equitable opportunities for acquiring communication skills within inclusive classroom environments. For that matter, Gregory (2006:1) elucidates that sign bilingualism is based on the idea that, as deaf children can potentially easily acquire Sign Language and may have difficulty accessing spoken languages, they should be given the opportunity to develop Sign Language and the majority spoken language to enable them to communicate in inclusive settings.

There is also another strong argument that sign bilingual education offers a natural environment for both deaf and hearing children to exercise linguistic freedom in inclusive settings. Swanwick et al. (2016:2) argue that, naturally many deaf children switch between sign and spoken languages in their everyday lives by engaging in trans-languaging in which they mix and switch between modalities. Thus deaf children's alternate and blended use of sign and spoken language is a normal component of bimodal-bilingual communication in natural inclusive contexts which can be resonated through sign bilingual education in inclusive education setups. In other words, sign bilingual education offers a natural opportunity for both hearing and deaf children to develop strong social ties within the mainstream school. Humphries (2013:18) confirms that deaf people interact on a daily basis with the Sign Language used in their community as well as with the spoken language used by hearing people among whom they are embedded in their everyday life.

In this context, the justification of sign bilingual education is also premised on the realisation that deaf children come from homes, communities and school environments where both a sign and spoken language are likely to be meaningfully present (Humphries, 2013:13). Studies supporting the naturalistic reality of sign bilingual education (Klatter-Folmer et al., 2006; Krausneker, 2008; Rinaldi & Caselli, 2009) report that the most advanced use of language in terms of lexical richness and syntactical complexity were realised when sign and speech were used in a sign bilingual education arrangement (Swanwick, 2016:8). Plaza-Pust (2014:45) sees this bimodal use of languages as a separate but interconnected language system. Other studies conducted in Brazil and the Netherlands (Klatter-Folmer et al., 2006; Lichtig et al., 2011) reveal the extent to which the sign bilingual utterances of deaf children in sign bilingual education programmes can provide the most efficient means of producing linguistic complexity and communicative richness necessary for inclusion of the deaf into the hearing communities and mainstream schools.

2.9.4 Curriculum Accessibility and Responsiveness to the Dynamics in Deaf Pedagogy

The afore-said linguistic opportunities further suggest the potential of sign bilingual education to offer access to the curriculum. Gregory (2006:1) postulates that sign bilingual education facilitates personal and social development and enables deaf children to access the mainstream curriculum. In effect, sign bilingual education, according to Kirchner (2014) cited in Yiu (2015:2), offers equal access to the regular school curriculum through team teaching between a regular teacher and a specialist teacher of the deaf. Tang (2016:7) concurs that sign bilingual education in a regular school setting supports both DHH and hearing students to access the same regular curriculum. Studies by Bagga-Gupta (2000) and Dammeyer (2010) reported elsewhere in this thesis also noted improved curriculum access (Swanwick et al., 2016:2). This accessibility to the curriculum is also diametrically related to the changing climate in deaf pedagogy.

Swanwick (2016:2) argues that the rationale for sign bilingual education can, therefore, be premised on the changing climate of deaf education in which deaf children's learning contexts are changing as a function of accessibility to curriculum provisions which is afforded (or not) by new and developing hearing technologies, deaf pedagogies and the dynamic philosophy of inclusion. The author explains that sign bilingual education gives deaf children the opportunity to learn Sign Language and spoken/written languages thereby granting them access to the curriculum in the language most accessible to them. Mayer and Leigh (2010) in Swanwick (2016b:1) implore that hearing technologies, such as digital hearing aids and cochlear implants have dynamically changed the language and communication profiles of deaf children. Contrary to speculations that hearing technologies could restore hearing there is now an added and more urgent need for sign bilingual education as a result. Further, research suggests that increasing numbers of educational programmes are moving towards sign bilingual education as the major vehicle for curriculum access and attainment of inclusion (Nussbaum et al., 2021:16).

From these analyses, Mitchner (2015:52) concludes from evidence generated from studies by Mitchner, Nussbaum and Scott (2012), Jimenez, Pino and Herruzo (2009), Preisler, Tvingstedt and Alstrom (2002) and Yoshinaga- Itano (2006) that sign bilingual education also promotes a multisensory approach that is additive rather than subtractive, in that it facilitates and enhances bilingual development in both languages. Kermit (2010:157) also sees sign bilingual education as a post-operative support strategy for implanted children to access the mainstream curriculum within a hearing environment. Without sign bilingual education, deaf students will only experience physical access to the inclusive environment, but not effective curricular access, leading to an illusion of inclusion (Russell & Winston, 2014:103). For these reasons, Lange et al. (2013:1) confirm that, in addition to the recent research by Kushalnagar, Hannay & Hernandez (2010), additional studies have found cognitive benefits of sign bilingual education leading to improved academic performance among deaf children. A study by Lange et al. (2013:11) confirmed that with time deaf students educated through sign bilingual education outperformed the comparison group which was primarily comprised of hearing students. Of note is the finding of the study that suggests that students in the sign bilingual education programme appeared to break through the often discussed plateau where the academic growth of deaf students of hearing parents is stymied resulting in stagnant growth.

2.9.5 Critical Review of the Rationale for and Justification of Sign Bilingual Education

Despite the popularity of sign bilingual education in deaf pedagogy today, some studies have questioned its efficacy. Foremost, according to Leeson (2006:164), sign bilingual education has not been scientifically documented as being the end-all solution, but only as an approach which recognises spoken and Sign Languages equally to aid learning, language development and social interaction. Swanwick et al. (2016:21) note that the central criticism of sign bilingual education is that research has not systematically demonstrated that it is a more successful approach than any other, especially in terms of academic attainment. Mayer and Leigh (2010:177) claim that at present there are no empirical results to support the assumption that children in sign bilingual education programmes become as proficient in either language or literacy as their hearing peers.

Similarly, while sign bilingual education may have a strong theoretical foundation and is intuitively appealing, there is so far not enough evidence to actually make claims about its effects (Marschark & Spencer, 2009: 93). Rydberg, Gellerstedt & Danermark (2009:1465) also found out in a study that, deaf individuals in Sweden still lagged significantly behind their hearing peers despite having received all their education bilingually. However, it has not been established whether these poor outcomes were a direct result of the failure of sign bilingual education per se or were due to lack of Sign Language proficiency among the more than 95% of deaf children of hearing parents (Higgins & Liberman, 2016:12) or of inappropriate instructional methods. After all, many sign bilingual education programmes have failed not because of theoretical inefficacies but 'because many schools that implemented self-declared programmes did so with personnel who had little or no training at all in sign bilingual pedagogy' (Knoors & Marschark 2012: 295).

Therefore, many of the perceived shortcomings of sign bilingual education are not to do with its lack of efficacy but with failed implementation strategies and paucity of research. These arguments rest on the tension between the theoretical frameworks, the assumptions underlying sign bilingual education and the reality of deaf learners' context (Mayer & Leigh, 2010:177). For instance, the studies of the outcomes of sign bilingual education are sparse and generally inconclusive even in settings where sign bilingual education is well-established (Swanwick et al., 2016:21). Hendar (2009) in Knoors and Marschark (2012:295) further argue that even the available national studies in Sweden tend to demonstrate limited educational advantages and do not suggest that sign bilingual education does close the progress gap between the deaf and hearing children. In contrast, Swanwick (2010:154) asserts that such doubts are very much based on an impairment view of deafness, which is in stark contrast to the tenets sign bilingual education as a strategy for inclusion. A study by Davidson et al. (2013:10) showed that there were in effect no evidences of disadvantage for children educated using the sign bilingual education model.

Swanwick et al. (2016:21) also emphasise that after all, sign bilingual education was never established with the goal of being a more successful approach than any other but was developed as an educational response to the language and learning needs of deaf children for whom spoken language approaches are not sufficiently inclusive. Knoors and Marschark (2012:297) admit that indeed when the implementation of sign bilingual education began it was never meant to be an evidence based practice, but a strategic one. Thus the studies that have tried to discredit sign bilingual education are futile in that they were premised on uninformed bases. Moreover, Swanwick et al. (2016:21) are concerned that most of the studies of sign bilingual education have concentrated on academic outcomes and tended to eclipse the discussion of the wider and more fundamental linguistic, cognitive and social-emotional hence inclusion outcomes. Despite the isolated criticism of and doubts about sign bilingual education, it has been implemented and found to be generating encouraging results in many parts of the world. In effect there is very limited dissenting literature against sign bilingual education for deaf children.

2.10 INTERNATIONAL PERSPECTIVES OF SIGN BILINGUAL EDUCATION

It is clear from the foregoing review that sign bilingual education is a relatively new concept in deaf pedagogy the world over. Some of the countries that have embraced sign bilingual education as a strategy for inclusion of deaf learners are the Scandinavian countries (Sweden, Norway, and Denmark), other European countries (such as UK, Canada, Spain and Germany) and the USA. Initially, sign bilingual education was used in special schools for the deaf in the Nordic countries (Swanwick, et al., 2016:4) but it has become the dominant model in mainstream schools involving both hearing and deaf children (Dammeyer, 2014:110). The current practice is also that deaf children are exposed to sign bilingual education early because research has demonstrated that this early exposure positively impacts on communication and social emotional development which promotes successful inclusion (Plaza Pust, 2005:1846; Dammeyer, 2014:111; Swanwick, 2016:22).

Some studies have also been recently reported in Japan (Honna & Kato, 2003); Brazil (Lodi, 2013; Dias et al., 2014) and Hong Kong (Hsing, 2015; Tang & Yiu, 2015). In Africa, potential progress has been noted (Allen, 2008:21) in Kenya and Uganda as well as in South Africa and Zimbabwe. Despite the widespread acceptability of sign bilingual education, it would appear from literature that its efficacy as a strategy for inclusion has not been adequately researched. Swanwick (2016b:1), while admitting that there is research on sign bilingual education in Europe, complains that it is not intense. However, according to Kushalnagar et al. (2012:7), similar studies to those few which have been conducted in Europe are used to advance the cause for sign bilingual education in other countries.

2.10.1 Sign Bilingual Education in Sweden

Sign bilingual education, as has already been highlighted, was first established in the Scandinavian countries starting with Sweden. Hsing (2015:2) confirms that sign bilingual programmes were first begun by Ahlgeen (1994) in Sweden in 1983 while Dammeyer (2014:110) concurs that Sweden was the first country to give Sign Language the status of a language and to introduce sign bilingual education programmes. SSL was officially recognised as the native language of the Deaf as early as 1981 (Bjorklund, Bjorklund & Sjöholm, 2013:6) making sign bilingual education a legitimate practice in the country. Svartholm (2010:159) asserts that the decision by the Swedish Parliament to officialise the use of SSL made Sweden the first country in the world to accord Sign Language the status of a formal language and to adopt sign bilingual education. Sign bilingual education was firmly established as the national policy in deaf education in Sweden through a new curriculum which enshrined sign bilingual education as a right for deaf learners (Rudner et al., 2015:9). When the country officially asserted the need for sign bilingual education, Sign Language was established as the first language (L1) and as a medium of instruction for the deaf while Swedish oral language was designated as the second language (L2) (Hult & Compton, 2012:607). This according to Svartholm (2010:159) was reflected in the first sign bilingual curriculum which was introduced in special schools in 1983.

Some of the changes that characterised the new curriculum included designating Sign Language as an independent language and teaching both hearing and deaf children Sign Language linguistics, Deaf culture and Deaf history (Dammeyer, 2014:110). With the introduction of Swedish Sign Language as a subject for hearing learners, sign bilingual education is to date increasingly being used in mainstream schools with deaf and hearing children (Swanwick et al., 2016:4). Thus, deaf children in mainstream schools in Sweden are given the right to education through sign bilingual education (Hyde et al., 2006:418; Swanwick et al., 2016:3). Special schools were previously framed as a legal and most ideal placement option for deaf students in Sweden but in recent years there has been a massive migration to mainstream school sign bilingual education (Tang & Yiu, 2015:1). As a result, the number of deaf children in special schools has dwindled in favour of inclusive mainstream school sign bilingual programmes (Rudner et al., 2015:9). In effect, to date there are six special and eight mainstream schools in which sign bilingual education is offered in Sweden (Swanwick et al., 2016:6). In this new order, the role of special schools is to provide expert knowledge in order to promote sign bilingualism in inclusive settings (Rudner et al., 2015:9).

There is a constellation of policy documents that guide the education of the deaf in Sweden. These include the Education Act (SFS, 2010:800) which replaced (SFS, 1985:1100) the Ordinance for Special Schools (SFS, 1995:401), the 2011 Curriculum for Compulsory School, Pre-School and Leisure Time (Lgr11), the 1994 Curriculum for Non-Compulsory School System (Lpf94), the 1998 Curriculum for Pre-School (Lpfo98) and the national syllabi (Hult & Campton, 2012:603). The policies designate Swedish, English and SSL as compulsory languages since being bilingual for deaf children in the country is a right (Svartholm, 2014:36). Skolverket (2002:12) declares that education of the deaf both in special and inclusive schools is characterised by the fact that both Swedish language and Sign Language are used in parallel fashion in different functions and reinforce each other as tools for communication and learning with SSL being the language of instruction and Swedish oral language used primarily for reading and writing.

Although the special schools are set forth explicitly in policy as ideal for deaf students, other placement possibilities including the mainstream classrooms are also available (Svartholm, 2010:168). The author reports that, to ensure inclusion, Sign Language is offered as a subject for both deaf and hearing children and although this arrangement is not aimed at competency in SSL for the hearing children in particular, it offers opportunities for cross-language activities which ensure that both deaf and hearing children benefit from sign bilingual education in inclusive settings. Svartholm (2010:160) further reveals that, in 1994 the provisions for sign bilingual education curriculum were intensified such that the schools for the deaf were given a mandate to ensure that all deaf and hard of hearing students were sign bilingual by the time they completed school. In addition, a government appointed commission presented a report in 2008 (SOU, 2006,54) which embraced proposals as to a secured use of SSL within education and training, support for parents of the deaf and for deaf immigrants, the right to interpretation, training of interpreters, enhancement of access to deaf culture and to media as means of facilitating sign bilingual education.

In higher grades, attention is paid to the development of critical awareness of the potential impact of Sign Language interpretation on social interaction hence the inclusion of deaf students in spoken language and speech environments (Hult & Compton, 2012:611). Kaplan and Baldauf (1997: 126) earlier concluded that Sign Language interpretation in schools in Sweden is framed as a communicative resource to be cultivated for broader use in society. Even the special school syllabi include specific sections that address the practice of Sign Language interpretation (Skolverket, 2010:29-32) in order to enhance sign bilingual competence. On the whole, Rydberg et al. (2009:318) declares that sign bilingual education has proved beneficial and that deaf students in Sweden have achieved better results than anywhere in the world although no present day study has been presented to sustain the claim. The other interesting dimension to sign bilingual education as a strategy for inclusion of the deaf in Sweden is the learning of English, which is, among other uses seen as a *Lingua Franca* using acquired skills from Swedish and SSL (Svartholm, 2014:7).

2.10.2 Sign Bilingual Education in Norway

In Norway, the Norwegian Association of the Deaf had repeatedly argued for recognition of NSL as an official language through legislation (Bergh, 2004 in Swanwick & Gregory, 2007:26) in order to pave way for sign bilingual education. The Norwegian Archive, Library and Museum Authority (2004) also presented a report concluding in favour of a law recognising NSL as an official language in order to ensure sign bilingualism for the deaf. Kermit (2010:159) observes that sign bilingual education in Norway does not comply with the Deaf people's radical notion that knowing only Sign Language would suffice all the needs of the deaf child because of its emphasis on Sign Language as merely a means to promote the end of acquiring spoken language. This notion is, however, contrary to the provisions of the Norwegian Education Act (1998) (S. 2-6, Act of Education) which gives deaf students who have acquired NSL as their first language the right to sign bilingual education.

Kermit (2010:157) further implores that since 1998; the Norwegian Education Act (Section 2, 6th paragraph) has asserted deaf children's legal rights to sign bilingual education while Pritchard (2005:1) earlier on confirmed that the National Curriculum for a 10-year compulsory education (KUF, 1996) introduced four new syllabi for the deaf children in the sign bilingual education programme in Norway. The syllabi include NSL as the first language, spoken Norwegian for deaf pupils, English for deaf pupils and Drama and Rhythmic for deaf pupils (Hyde et al., 2006:418) all aimed at facilitating sign bilinguality among the deaf learners. British Sign Language (BSL) was also introduced into the primary school syllabus as an optional course. Special schools in Norway have been designated as sign bilingual education resource centres providing support to regular schools (Marschark, Knoors & Dammeyer, 2014:294). These authors note that, during the period 1970-1990, several state special schools in Norway were closed to pave way for inclusion and sign bilingual education. The remaining 20 special schools were in 1992 transformed into Regional Resource Centres (Swanwick & Gregory, 2007:25). The main objective for the Resource Centres is to provide support services to local schools and municipalities and to offer guidance and counselling to parents and teachers (Hyde, Ohna & Hjulstadt, 2006:418; Swanwick et al., 2016:3).

In terms of school placement options, parents are free to choose to have their deaf children placed in local mainstream schools, in ordinary classrooms or special units or in special schools (Hyde et al., 2006:418). If the child is placed in a mainstream school, then the school becomes legally obliged to provide staffs that are fluent in NSL. Unlike in Sweden, sign bilingual education programmes in Norway were originally intended for inclusive setups and came into effect in the 1990s (Berge & Ytterhus, 2015:1). Interestingly, this occurred at the time when the country also spearheaded policies which emphasised inclusion as an overall value for compulsory education (Swanwick & Gregory, 2007:25). Marschark et al. (2014:299), point out that, just like in Sweden, the concept of sign bilingual education as a legal right and individual entitlement for the deaf children in Norway was also driven by legislative changes and curriculum transformations that called for the full engagement of the parents of the deaf. These researchers further elaborate that every deaf child in a local school in Norway is entitled to sign bilingual education and that this right is accompanied by the introduction of a national separate sign bilingual curriculum for the deaf students alone. However, the sign bilingual curriculum for the deaf has many parallels to the regular school curriculum and the learning goals are the same (Pritchard, 2015:2).

In addition to the extended sign bilingual education curriculum and in order to ensure that regular school teachers and parents of the deaf children are competent in NSL and fully appreciate sign bilingual education, the government of Norway has put in place Sign Language proficiency programmes (Swanwick and Gregory, 2007:25). Accordingly, teachers of the deaf graduating from these programmes should demonstrate Sign Language competency at the level equivalent to one and half year's full time study. Hearing parents of the deaf are also entitled to a 40-week government funded training in NSL during the first 16 years of the child's life (Pritchard, 2005:1; Hyde et al., 2006:48; Swanwick & Gregory, 2007:25). Full coverage of tuition, travel and accommodation is paid for by government. For deaf pupils who are educated in mainstream schools, short-term attendance at the regional Resource Centres is accorded to ensure Sign Language fluency and enculturation of the Deaf culture (Swanwick & Gregory, 2007:25). Just like in Sweden, the rationale for the use of sign language interpreters

in Norwegian schools is to accommodate the new pedagogical practice of sign bilingual education in inclusive classrooms (Berge & Ytterhus, 2015:1).

2.10.3 Sign Bilingual Education in Denmark

Marschark et al. (2014:3) note that the changes that occurred in Sweden and Norway in the early 1980s percolated to Denmark resulting in legislative reforms in 1991 that made access to Danish Sign Language (DSL) and sign bilingual education in schools a legal entitlement. According to Dammeyer (2014:110), a few years after Sweden accorded Sign Language an official language status, Denmark together with Norway also established that the dominant model for deaf education was to emphasise a bicultural (deaf and hearing) and bilingual (sign and oral) within the inclusive education agenda. This meant that DSL was to be used for all teaching and instruction as well as communication while, spoken Dutch was to be used for writing and was to be taught as a second language in mainstream schools (Leeson, 2006:10; Dammeyer, 2014:110). The Ministry of Education (1991) in Denmark mandates that DSL be an independent subject in the curriculum in which students learn about Sign Language linguistics, Deaf culture and Deaf history.

As a way of ensuring full implementation of sign bilingual education and as far as possible, in Denmark, it is a requirement that each sign bilingual class be staffed with at least one Deaf teacher (Swanwick and Gregory, 2007:24). These authors further explain that Sign Language has remained a basal language in sign bilingual education programmes in Denmark in the few remaining schools for the Deaf. Marschark et al. (2014:10) contend that while teachers of the deaf in the country often take extra courses in audiology, literacy, general special education and audio-verbal therapy, there are no formal educational requirements for them. However, Vestberg (1999) in Leeson (2006:9) refutes this contention insisting that all teachers of the Deaf in Denmark must complete a qualifying course in DSL while Dammeyer (2014:110) confirms that all teachers of deaf children in sign bilingual classes are trained to become skilled Sign Language users.

The growing number of students with cochlear implants (CIs) in Denmark has influenced and increased demand for sign bilingual education in mainstream schools. To this end, Percy-Smith et al. (2012) cited by Dammeyer (2014:110) assert that owing to the introduction of CIs for all congenitally deaf students over the last decade, the number of students attending special schools for the deaf in the country has decreased to a minimum and that most deaf students are now mainstreamed. According to Marschark et al. (2014:5), there are only three special schools for the Deaf that are still operational in Denmark. These are the special schools in which many of the students in attendance have additional or complex needs; otherwise the majority of deaf children, particularly those with CIs are educated in mainstream schools today.

2.10.4 Sign Bilingual Education in the United Kingdom (UK)

The developments in deaf education which obtained and later shaped sign bilingual education in Scandinavia inspired UK to follow suite in the 1990s. Swanwick et al. (2016:292-293) chronicle how the Scandinavian (Nordic) countries pioneered sign bilingual education and how their efforts later shaped the provision of deaf education in mainstream schools in the UK. Swanwick (2010:149) also suggests that the development of sign bilingual education in the UK was largely motivated by the developments in the Nordic countries. In the UK, Sign Language was recognised as an official language only in 2003. This recognition effectively endorsed the significant role played by sign bilingualism in the education and inclusion of deaf children. Plaza Pust (2005:1842) posits that, in recognising the relevance of British Sign Language (BSL) in the education of the deaf marked a turning point in deaf pedagogy in the UK towards sign bilingual education in mainstream schools.

Although the development of sign bilingual education in the UK was sporadic and not on a national scale like in the Nordic countries, it was geared toward inclusion in mainstream schools (Swanwick et al., 2016:299; Stone, 2010:44; Swanwick, 2010:147). According to

Swanwick (2010:147), by the 1970s general awareness of BSL was increasing and its status was explored and accepted as the basis for the implementation and practice of sign bilingual education in inclusive classes. However, it was not until the late 1980s that professionals began to talk about sign bilingual education, that is, education of deaf children involving BSL and spoken English (Swanwick, 2016:1). This was coupled with the growing recognition for the need to include children of diverse language and cultural backgrounds into mainstream classrooms to place BSL at par with English (Moffatt-Feldman, 2015:3). Swanwick (2010:149) further explains that placing Sign Language at par with spoken language heralded the recognition of the potential of sign bilingualism and language diversity of deaf children as well as the need for this to be addressed within the educational context in the UK. Sign bilingual education approaches in the UK encourage the integration of deaf children into the mainstream schools and emphasise self-esteem, valuing of deafness and Sign Language and recognition of the unique and distinctive Deaf culture (Gregory, 2006:2).

Earlier efforts at the establishment of sign bilingual education programmes in the UK included the Swan (1985) Report into Education of Ethnic Minority Children and the collaboration of parents and professionals into a study group which later became known as Language of Sign as an Educational Resource (LASER) (Swanwick et al., 2016:295; Swanwick, 2010:150). According to Moffatt-Feldman (2015:1), the goals of sign bilingual education, in the UK are to enable deaf children become linguistically competent, access the wider-curriculum, develop good literacy skills, develop a positive sense of identity hence achieve maximal inclusion into the mainstream schools. Unfortunately, like in many other countries, there are very few Deaf teachers who can spearhead this initiative (Batterbury, 2012: 265).

The real change towards sign bilingual education in the UK was in effect facilitated by the works of Pickersgill which were later corroborated by Llwellyn-Jones (1987) and discharged by Miranda Pickersgill and Susan Gregory (1998). According to Moffatt-Feldman (2015:2), sign bilingual education entered mainstream education in UK when Pickersgill and Gregory (1998) published their sign bilingual model through their publication of the policy framework entitled

'Sign Bilingualism: A Model'. Swanwick (2010:152) explains that the document which was later revised in 2007 presented a model of sign bilingual education practice which was intended to provide a guide for the most effective way of incorporating BSL into educational policies and practices. The publication of the document was in itself a statement of the growing interest in sign bilingualism in the UK and the increasing recognition of its central place in the education of deaf children and been used as a policy reference for the practice of sign bilingual education in UK (Swanwick et al., 2016:295). According to these researchers, the publication provided a definition, philosophy and principles of policy and practice of sign bilingual education for the first time throughout the UK.

The resultant model set out a clear view of a sign bilingual educational philosophy which has become the cornerstone of the provision of sign bilingual education in UK to date. Moffatt-Feldman (2015:3) further observes that the model can conveniently be broken down into language and communication, curriculum and assessment, staffing, parents and community aspects making it a perfect blue-print for sign bilingual education in the UK. Whilst Pickersgill and Gregory's (1998) original sign bilingual education model did lay out the idea for educating deaf pupils using sign bilingual education within mainstream schools, its implementation was challenging. Some of the challenges included the changing communication needs for deaf children and the fast advancing technology (which include cochlear implantation) and the conception of deafness in these regards (Swanwick, 2010:154). The realisation of these challenges necessitated the updated 2007 model which responded by taking into account what was happening on the ground and even recognising some earlier efforts such as the continued use of Sign Supported English (SSE) in its effort to respond to the new ways of conceptualising sign bilingual education as a strategy for inclusion of deaf children in the UK (Mayer & Leigh, 2010:182).

Swanwick and Gregory (2007:5) elucidates that the changes that actually needed to be recognised within the updated model included greater research into BSL linguistics, greater recognition of BSL, greater acceptance of the use of BSL within the sign bilingual education

matrix, evidence suggesting improved attainments by the deaf children using Sign Language in school and the increasing the number of deaf children using cochlear implants. At the time the University of Leeds established a Teacher of the Deaf programme to train and support teachers to work in sign bilingual settings (Swanwick et al. 2016:295). Hefferman (2011) cited in Batterbury (2013:257) reports that with the emergence of sign bilingual education as a strategy of inclusion, the situation in UK was such that four of the twenty-eight remaining Deaf schools then had been threatened by closure while the remaining ones have had to enter into partnerships with mainstream schools in order to remain relevant. On the same note, Gregory (2006:1) report that, in 1989, even Leeds Service for Deaf, Derby and the Longwill schools for the Deaf in Birmingham have had to adopt the sign bilingual education policy. In the same year, 1989 (which Gregory (2006) refers to as the watershed year in deaf education in UK) the first Local Education Authority also adopted a sign bilingual policy and at the same time the first child received a cochlear implant

All the foregoing efforts ultimately led to the acceptability of sign bilingual education as an educational concept which was first implemented in Leeds (Knight, 1997; Jansma, Knoors & Baker, 1997; Gregory, Smith & Wells, 1997 cited in Swanwick 2010:151). This has resulted in educational placement of deaf children in UK oscillating from Deaf school to mainstream provision as provided for by the 1981 Education Act (Batterbury, 2013:257) but with the majority of deaf children attending mainstream school. By then more than 80% of deaf children in UK were educated using sign bilingual education in mainstream schools (Swanwick et al., 2016:299). Stone (2010:44) earlier on confirmed that many deaf children in UK had been mainstreamed by then. Swanwick et al. (2016:293) implore that, for these reasons, the need for sign bilingual education in the UK was predicted in light of the global inclusion context and fast-moving developments in cochlear technology. Coincidentally, half the population of profoundly deaf children entering school then in the UK had a cochlear implant and the number was increasing (Swanwick & Gregory, 2007:25). Cochlear technology was aimed at increasing access to inclusive education and broadening sign bilingual education for the deaf children in the country (Swanwick, 2016b:1). It is from this perspective that Swanwick

(2006) cited in Moffatt-Feldman (2015:3) proposed that Pickergill and Gregory's (1989) model needed updating to match the changing attitudes towards sign bilingual education and the increasing use of cochlear technology. Around about the same time, the developments in sign bilingual education as a strategy for inclusion in Scandinavia and the UK were being echoed in the USA.

2.10.5 Sign Bilingual Education in the USA

Like it has already been mentioned, sign bilingual education in the USA was not implemented until the late 1980s and the early 1990s. Lange et al. (2013:1) point out that sign bilingual classrooms in the USA are still in their infancy with oldest programmes only dating back to the late 1980s and early 1990s. The authors also assert that it is imperative for research to be conducted to investigate outcomes when sign bilingual education is used-hence the need for the current study albeit in Zimbabwe. The evolution and emergence of sign bilingual education in the USA was, like in other countries, largely influenced by the failure of oralist methods to facilitate positive outcomes such as academic performance and inclusivity of deaf children in mainstream schools. Swanwick (2016:1) believes that sign bilingual education in the USA developed as a response to concerns about deaf children's attainments when oralist methods were used and to research demonstrating that Sign Language is a naturally evolving rule governed language (Stokoe, 1960; Klima & Bellugi, 1979; Kyle & Woll, 1985).

Previously, Deaf education in USA was exclusively oralist in nature and where signing was allowed, it had largely been Signed Exact English (SEE) and not ASL. According to (Swanwick 2016:14) Simultaneous Communication (SimCom) has been the preferred didactical strategy in mainstream schools prior to the introduction of sign bilingual education but failed to achieve the desired outcomes. Hult and Compton (2012:609) report that prior to the enactment of the Individuals with Disabilities Education Improvement Act (IDEA) (2004), deaf students in USA were educated primarily in schools for the Deaf. With the passage of IDEA, many deaf children were then moved to inclusive settings where oral methods were used.

According to Nieto (2009:63), the popular case of Brown versus the Board of Education of Topeka, in which the Supreme Court again declared that enforced segregation of schools inherently promoted inequality, fuelled the recognition of ASL and served as a litmus test for the legitimisation of sign bilingual education in the USA. In addition, the Civic Movements of the 1960s and 1970s helped to intensify the efforts leading to the promulgation of Bilingual Education Act (1974) which up to date has been considered the most important law in recognising linguistic minority rights, hence sign bilingualism in the history of USA. Although the status of ASL in education is addressed only latently (Hult & Compton, 2012:609), Sign Language has now come to be identified as a native language and mother tongue for the deaf students and as equal in status as English, a situation which has added impetus for the demand of sign bilingual education.

Sign bilingual education in the USA, like in Sweden, is mostly sustained through the use of Sign Language interpreters. Sign Language interpretation within sign bilingual arrangement in the USA is linked to the development of a linguistic repertoire that facilitates social interaction. It is framed as a communicative resource to be cultivated in school for broader societal inclusion and in terms of related services rather than on developing communicative skills related to using an interpreter as part of a sign bilingual education repertoire (Hult & Compton, 2012:611). Reagan (2010:161) posits that explicit attention is paid to the role that Sign Language interpretation plays in how deaf students access educational services, but the major focus is on its role as a compensatory tool for accessing the dominant hearing classroom environments.

Although US policy does not clearly codify the development of sign bilingualism among deaf children in mainstream schools, it does provide for it in IDEA (2004). IDEA (2004) specifies that, in the case of a child who is deaf, the child's language and communication needs, opportunities for direct instruction in the child's language and communication mode should be taken into consideration. Commenting on the gaps in sign bilingual education policy, Ball (2006:45) argues that it is evident that competing discourses exist within the U.S. policy texts

regarding where deaf students should be placed and how they should be taught, thus creating 'gaps and spaces' that individuals can use to come up with emerging strategies such as sign bilingual education.

In apparent recognition of sign bilingual education, the University of California San Diego developed and field-tested a teacher training programme which incorporated cultural practices from the Deaf community. According to Humphries (2013:7), the programme represented part of the paradigm shift from the deaf education pedagogy which was based on a deficit model to a socio-cultural view which was meant to support sign bilingualism. This has created a new discourse in deaf education in USA which contradicts the traditional explanations of how deaf children learn effectively paving way for sign bilingual education (Mayer & Leigh, 2010:176; Hsing, 2016:3). Studies by Baker and Battison (1980); Bellugi, Klima and Siple (1975); Coye, Humphries and Martin (1978); Padden and Markowicz (1976); Siple (1978) and Supalla and Newport (1978) all cited by Humphries (2013:9) concur that this new discourse, which technically advocated for sign bilingual education comprised a vibrant American Deaf culture and opened up a new narrative of Sign Language and Deaf cultures around the world. Hult and Compton (2012:612) contend that, unlike in Sweden where sign bilingual education is still prominent in the schools for the Deaf, in the USA it is located within inclusive setups and serves as a catalyst for the least restrictive environment. As a result, least 80% of the deaf children attend mainstream schools (Marschark, Sapere, Convertino & Seewagen, 2005:38) and the number of sign bilingual education programmes have been increasing since their emergence in the 1980s (Nussbaum et al, 2012:16; Freel et al., 2011:18).

In order to accomplish the sign bilingual education initiative, teachers of the deaf in the USA are capacitated to meet the requirements of the challenging task of teaching deaf children in mainstream schools. A teacher of the deaf in the USA must ideally be fluent in both sign and oral language, Deaf or if not Deaf, very well acculturated in Deaf culture (Humphries, 2013:20). For instance, the programme at the University of California San Diego was meant to ensure that teachers of the deaf were credentialed in order to handle sign bilingual teaching.

Nowadays training of teachers for the deaf in sign bilingual practice in USA is no longer experimental but an option that universities and colleges can offer under regularised standards and accreditation (Humphries, 2013:7).

The increasing demand for sign bilingual education in the USA have like in Scandinavia and the UK co-occurred with widespread developments in cochlear technology (Mayer & Leigh, 2010:175). According to these authors, the relationship between sign bilingual education and cochlear technology in the USA is as controversial as that prevailing in the UK. This is evident in that Deaf communities in the USA were initially opposed to cochlear implants fearing that they may interrupt ASL development and eradicate Deaf culture (Gregory, 2006:2). Meanwhile, like in the UK, there have been some scepticism about the use of cochlear implants in inclusive sign bilingual contexts yet there is evidence suggesting that Deaf children with cochlear implants are likely to benefit from being educated through sign bilingual education (Mitchner, 2015:52). Such findings have encouraged African countries to adopt sign bilingual education despite that it has hardly been well established.

2.10.6 Sign Bilingual Education in Africa

Unlike in Europe and America, practice of sign bilingual education in Africa is not clearly defined, hence the necessity for this study. Nyst (2010:1) admits that this is because little is known about the sign languages used on the African continent and points out that studies pertaining such topics as sign bilingual education are very rare and for a number of countries information is completely lacking. In effect, according to Allen (2008:20), the only countries that may claim to offer sign bilingual education in Africa are Uganda and Kenya. A typical feature in Africa is the co-existence of American Sign Language (ASL) and a local Sign Language, a situation which often leads to more confusion. This is at variance with UNESCO's (1994:18) provision which in paragraph 21 of the Salamanca Statement and Framework for Action on Special Needs Education recognises the importance of Sign Language as the medium of communication among the deaf and mandates that it should be recognised and

provision made to ensure that all deaf persons have access to education in their national Sign Language.

The World Federation of the Deaf (WFD) (2015:3) cites paucity of national legislation and policy, lack of official recognition of national Sign Languages, dearth of research, lack of expertise and the medical view of deafness as some of the barriers to the practice of sign bilingual education in Africa. Mainstream teachers in Africa lack specialised skills for including deaf children and there is general lack of access to appropriate communication support such as Sign Language interpretation (Tesni, 2014:4). As a result, according to DeafNET (2016:5), many deaf people are often excluded from learning due to the dominance of oralism in schools. This observation suggests the need for increased research and popularisation of sign bilingual education in Africa.

2.10.6.1 Sign Bilingual Education in West Africa

Nyst (2010:5) identifies the multilingual nature of the communities and diversity of oral language tone in West Africa as some of the factors that have complicated the implementation of sign bilingual education as a strategy for inclusion. For these and other reasons teachers of the deaf in Sub-Saharan Africa in general as earlier indicated cannot sign and do not view Sign Language as a complete language (Kiyaga & Moores, 2009:149) making the implementation of sign bilingual education difficult. However, Kiyaga and Tesni (2011:10) insinuate that there are indications of improved opportunities for sign bilingual education in some African countries. According to Nyst (2010:3), the Deaf America Reverend Andrew Foster (1927-1987), who nevertheless advocated for Total Communication (TC) and used American Sign Language, is the legend for Deaf education in West Africa. The author argues that, although the manual method has been pre-dominant over the oralist method because of the complexities of choice of oral language due to diverse tone variation in West Africa, the oralist approach in educational settings has always been predominant. It can, however, be extrapolated from this analysis that deaf education in West Africa is firmly established in

special schools for the deaf and that the conception and practice of sign bilingual education is not clear.

Ghana

Kusters (2014:139) reports that at least in Ghana, sign bilingualism is highly valued. Kusters (2014:146) further reveals that GSL which is based on ASL is the one used in schools but in conjunction with Signed English (Signs arranged in English language word order). Teachers of the deaf are trained at the teacher training college established by Andrew Foster in the 1970s (Ajavon, 2006:2). However, Kusters (2014:146) reports that despite the training, hearing teachers in Ghana still use Signed English more than GSL in the sign bilingual programmes but the deaf students in the programmes prefer GSL for full academic and social discussions. For Obosu, Opoku-Asare and Deku (2016:20), lesson delivery in the classrooms occurs mainly through discussions and explanations using GSL in which teachers are seldom fluent. The authors explain that their study revealed that even though Sign Language is used as a mode of communication, English is the main medium of instruction.

Nigeria

Meanwhile, according to Abiodun-Ekus and Edwards (2014:3) deaf, children in Nigeria are educated in either special or mainstream schools. Ajavon (2006:3) claims that educational and social inclusion is practised in the mainstream schools but admits that services for the deaf in these schools still remain inadequate. The author says that during the earlier period of deaf education in Nigeria, teachers of the deaf were sent to a teacher training college which was established by Andrew Foster in the 1970s in Ghana but many training facilities for teachers of the deaf now exist in many colleges in the country. However, information from the Nigerian People and Language Detail Profile (2013:1) shows that most teachers of the deaf do not know or understand Nigerian Sign Language making the practice of sign bilingual education problematic. The schools follow the oral method of attempting to teach deaf

children to speak and lip-read the English spoken language. Avajon (2006:1) earlier on reported that simultaneous communication (sim-com), and not sign bilingual education, is widely used for the deaf students. Here spoken English supported with signs drawn from ASL is used together with the ASL fingerspelling alphabet. Not even the children's home signs are recognised in this arrangement. The author notes that this is highly problematic for deaf children.

2.10.6.2 Sign Bilingual Education in East Africa

While the situation is better than that of West Africa, in East Africa, not much is documented about sign bilingual education serve for some literature on Kenya, Uganda and a bit on Tanzania.

Burundi

In Burundi, sign bilingual education for deaf children is wholly inadequate, since only a few deaf children can be accommodated in the only two primary schools for the deaf (Disability Development Partners, 2011:31). A small number of the deaf children attend informal classes where they learn Sign Language and basic literacy and numeracy while the majority has no opportunities at all. In effect, over 3 000 deaf children in Burundi are out of school but for those in school, their education situation is simply an unbelievable and unfortunate one (Aurora Deaf Aid Africa, 2016:3). According to Disability Development Partners (2011:19), the situation is exacerbated by the fact that, there is no standard Sign Language at the moment nor is there a standard for it.

Tanzania

Education for the deaf in Tanzania is mostly offered by private schools that prefer oralism at the expense of sign bilingual education (Childreach Tanzania, 2016:2). There are approximately seven schools for the deaf and fourteen resource units that are attached to

mainstream primary schools which can hardly accommodate all the children and as a result many deaf children in Tanzania are not attending school (Batamula, 2009:9). This, according to the author, is due to lack of Sign Language knowledge among mainstream teachers and hearing peers. Therefore, deaf children have problems accessing education in these mainstream environments (Childreach Tanzania, 2016:2). Batamula (2009:9) further reports that while Tanzania Sign Language (TSL) is an official language, there is no clear policy on sign bilingual education in the country. Schools follow their own set of policies and decide on the teaching pedagogy which is usually oralism (Kiyaga and Moores, 2003:21). However, Batamula (2009:13) implores that there are some schools that follow a more sign bilingual approach where they use Tanzania Sign Language (TSL) to teach written Swahili and English. The author is, however, quick to point out that the schools still spend a lot of energy on spoken language and oracy.

Kenya

In Kenya, Adoyo (2002:83) concludes in contrast to Allen's (2008:21) earlier assertion that there is significant practice of sign bilingual education. The author argues that deaf education in the country has not shown significant improvement in recent decades as was anticipated and attributes poor educational practices and retrogressive inclusion of the deaf in the schools in the country to teachers' lack of competence in Sign Language. There are both primary and secondary schools that teach deaf children but Kenyan Sign Language (KSL) has not been fully accepted as a medium of instruction although the new constitution of Kenya recognizes it as such (Kiyaga and Tesni, 2011:17). These sentiments are also echoed by Adoyo (2007:3) who insists that the use of KSL in mainstream schools has largely been ignored and there is a continued insistence on the use of the oral method which puts emphasis on teaching deaf children to speak. The author notes that as a result, the education of the deaf in Kenya is a good example of how the right to education of deaf children has been violated and thus contravenes the UN (1948) Universal Declaration of Human Rights.

Adoyo (2002:84) argues that sign bilingual education still has to be realized in Kenya as many schools are still stuck on Simultaneous Communication (SimCom) in which teachers still fail to represent spoken language accurately due to linguistic modality differences between manual and oral languages. However, the Gachathi Commission (1976) on language policy in Kenya recommended that the language used in a school catchment area (L_1 in other words) should be the medium of instruction in lower primary school (Std1 – 3) and that the language should be taught as a compulsory school subject both at primary and secondary level. Unfortunately, the language policy does not seem to recognise KSL as one such language (Mweri, 2014:6, Adoyo, 2012:89). The policy is vague and was formulated with the hearing in mind (Mweri, 2014:6).

Besides lack of clarity of policy on sign bilingual education, Mweri (2014:4) also decries the quality of teachers posted to teach deaf children. Most of them are indeed professionally trained teachers but they lack the linguistic knowhow to use KSL as a medium of instruction in sign bilingual education. Dearth of interpreter services in schools has worsened the situation which is also characterized by exclusion of sign bilingual strategies from policy (Kiyaga and Tesni, 2011:17). For Adoyo (2012:90), the root cause of this problem is the fact that training colleges such as Kenya Institute of Special Education and the universities which offer Special Education do not have trainers who are competent in KSL. Mweri (2014:7) is concerned that Deaf education in Kenya currently uses more of subtractive than the additive models in the like of sign bilingual education. The author elaborates that deaf children are forced to learn English or Swahili without much regard for the already developed KSL skills. However, unlike researchers in other African countries, Adoyo (2007; 2012) recognises and uses the term sign bilingual education.

Uganda

Uganda has the same challenges and omissions that have characterised sign bilingual education in Kenya but has shown more promising milestones in terms of policy, practice, attitude and commitment. Adoyo (2007:8) views Uganda as a model from which Kenya could

tape in that the Ugandan Education Strategic Investment Plan (1998-2003) includes strategic priority of access and equity in Education for All (EFA). While Dennison (2015:16) believes that the legal framework regarding the provision of special education, including deaf education in Uganda is skeletal and largely undefined, Miles, Wapling and Beart (2011:1517) earlier on argued that, since 1997 Uganda has put in place equitable and progressive education policies which prioritise disabled children. However, Miles et al. (2011:1518) also note that, despite the progressive policies, not all deaf children were included in mainstream schools due to negative family and community attitudes. Meanwhile, the African Network for Prevention and Protection against Child Abuse and Neglect (ANPPCAN) (2012:11) insists that non-inclusion of the many deaf children is due to the colossal gap between the existing policy frameworks and the actual service provision for the deaf children. The Government of the Republic of Uganda (1995) Constitution Article XXIV (d) recognises Ugandan Sign Language (USL) as an official language (Miles & Woodford (2003:1) but does not explicate its role and use in sign bilingual education. The Persons with Disabilities Act (2006) explicitly mentions the right to education for the disabled children but does not mention a clear cut implementation of strategies (ANPPCAN, 2012:11) such as sign bilingual education for the deaf children for example.

Teachers of the deaf use a mixture of sign bilingual strategies and Total Communication but the Sign Language used by the hearing teachers in most of the mainstream classrooms according to the WFD Regional Secretariat for Southern and Eastern Africa (2008) tends to be Signed English. Paul, Simons and Fenning (2015) observes that the Ugandan Sign Language (USL) used in schools has historical influences from BSL, ASL and KSL but the problem is that native USL is clearly distinct from these three. Sign Language training for specialist teachers (otherwise known as Special Needs Education Coordinators (SNECOs) in Uganda) only equips them with basics (Miles et al., 2011:1519). However, some of these SNECOs later obtain further training particularly from Kyambogo University. Dennison (2015:26) implores that many specialist teachers are being trained at the Ugandan National Institute of Special Education and Kyambogo University which the author brands as 'a key hub for tertiary special

education instruction in Uganda.’ In addition, there is also a joint initiative led by the UNAD and the Ministry of Education and Sport for training of deaf teachers of the deaf since 2009. Training of deaf teachers is critical in the implementation of sign bilingual education as strategy for inclusion.

The WFD Regional Secretariat for Southern and Eastern Africa (2008) reports that there are, however, few Sign Language interpreters in Uganda but interpretation is available for university and other social services (<http://www.ethnologue.com>). Unfortunately, there is widespread shortage of teachers of the deaf and there is lack of Sign Language skills among the teachers (Jinja D.E.A.F, 2016:4; Initiative for Social and Economic Rights, 2013:3; ANPPCAN, 2012:34). This constrains the establishment of sign bilingual education as a strategy for inclusion. A model project initiative for the use of sign bilingual education for the inclusion of the deaf children in mainstream schools exists in the Bushenyi District, south west of Uganda. According to Miles et al. (2011:1523), the project involving 14 mainstream schools was developed as a parent-led and government-supported programme with minimal external funding. Despite challenges such as large class size (80 to 100), teachers volunteered to receive on the job training in the practices of sign bilingual education particularly in the use of Sign Language. What have sustained the project is the commitment, motivation and the positive attitudes towards the deaf that the teachers have demonstrated despite their lack of specialist skills which deters them from satisfactorily practising sign bilingual education (Miles et al., 2011:1519).

The Bushenyi sign bilingual education project in Uganda also thrives on peer tutoring among the deaf children themselves. Older deaf children who had previously attended special schools before the onset of inclusion and had attained fluency in Sign Language assisted the younger children to learn the language. Unfortunately, where there were no older children who were fluent in Sign Language, the children had to rely on their teachers’ often limited signing skills (Initiative for Social and Economic Rights, 2013:3). In 2007, the parents successfully registered themselves as a community-based organisation called Silent Voices to

advocate for and promote the use of sign bilingual education as a strategy of instruction for deaf children in inclusive classrooms (Miles et al., 2011:1520).

2.10.6.3 Sign Bilingual Education in Southern Africa

Although more elaborate work has been done on deaf education in Southern Africa more than in many parts of Africa, particularly in South Africa and Zimbabwe, the concept and strategy of sign bilingual education in the inclusive education matrix for the deaf has been characterised by uncertainties and challenges. The term sign bilingual education itself is not popular among researchers and deaf practitioners.

Zambia

In Zambia, following the establishment of the language policy called New Break Through to Literacy (NBTL) children are taught initial literacy in their first year of school using the familiar language of the area but, according to Nkolola-Wakumelo and Manyando (2013:72), this does not apply to deaf children. The authors also observe that in schools where sign bilingual education has been attempted, teachers try to use manual representations to teach deaf children the local oral language so that they can be integrated into the oral community. Nkolola-Wakumelo and Miti (2010) in Nkolola-Wakumelo and Manyando (2013:72) posit that in this way deaf children instead learn Sign Language which they then use to access writing and reading skills of the oral language. The main cause of the misconception of sign bilingual education in Zambia is that the teachers of the deaf lack communicative competency in Zambian Sign Language (ZaSL) as a result of limited training and proficiency in Sign Language (Miles & Woodford, 2003:3). The Government of the Republic of Zambia, through the Ministry of Education, has provided for equality of educational opportunities and inclusion of disabled children including the deaf through policy frameworks such as Ministry of Education (1996) *Educating our Future* and Ministry of Education (2011) *Education Act* but these do not provide clear measures for sign bilingual education.

Botswana

Meanwhile, in Botswana most deaf children are educated using Total Communication (TC), American Sign Language (ASL) or Signed Exact English instead of sign bilingual education (Mpuang, Mukhopadhyay & Malatsi, 2015:132; Lekoko & Mukhopadhyay, 2008:87). Teachers attempt both ASL and Botswana Sign Language (BoSL) of which Mpuang (2009) found out that the majority of the teachers were not fluent in either. For Lekoko and Mukhopadhyay (2008:81), BoSL is not common in schools. Accordingly, the use of different signing systems together with the use of TC which is not uniformly employed by all educators owing to lack of clarity and understanding of how to effectively use them, has created confusion in deaf education in Botswana (Mpuang et al., 2015:133). This has also made the full implementation of sign bilingual education in the country difficult.

The effort by the Government of Botswana (2005) to try and resolve the problem of lack of access to formal BoSL by engaging a consultant to come up with the Setswana Sign Language Reference Manual seems to have failed. The main reason for this failure is that the Deaf community is not in agreement with many of the signs in the manual. In addition, the Language in Education Policy which is in place in Botswana is not adopted in schools for the Deaf and does not encompass sign bilingual education because Sign Language is not recognized as a true language in Botswana (Mpuang et al., 2015:134). However, the Revised National Policy on Education (Government of Botswana, 1994) and the Inclusive Education Policy (Government of Botswana, 2011) do provide for equality of access to education through inclusion of all children with disabilities including the deaf but do not specify the use of sign bilingual education as a strategy for inclusion of the deaf children. Meanwhile, in their recommendations Lekoko and Mukhopadhyay (2008:81) seem to imply the need for sign bilingual education for deaf children in schools in Botswana. Sign bilingual education could, however, be hindered by the general negative attitudes towards inclusive education among mainstream school teachers as noted by Mukhopadhyay, Nenty & Abose (2012:6-7) in their qualitative case study.

Malawi

An almost similar trend also obtains in Malawi where some policies such as the Disability Act (2012) are too generalized and do not specify the need for sign bilingual education. A medical view of diagnosis is dominant leading to the use of oral approaches, although use of Sign Language is encouraged. The situation is nevertheless quite encouraging in that Ministry of Education (2009:8) through the National Policy on Special Needs Education and Implementation Guidelines emphasizes the use of Sign Language and the use of Sign Language interpreters to access education when it comes to deaf learners but there seems to be lack of clarity of policy on how sign bilingual and inclusive education for the deaf children, for instance, are conceptualized (Phiri, 2015:5).

Meanwhile, the Ministry of Education and Vocational Training's (2007:22) suggestion of building more special schools for the Deaf, for instance, is contradictory to the spirit of inclusive education for which sign bilingual education is a potential strategy when it comes to deaf children. In terms of provision of teachers for the deaf, Malawi does train specialist teachers in Sign Language at the Montfort Special Needs Education College but the operationalization of sign bilingual education in schools is what might be lacking in the country (www.refie.org/fileadmin/user...Malawi). Phiri (2015:1) identifies lack of social relationships in mainstream settings and blames the practice of oralism with combination of simple gestures and constant writing on the chalkboard as retarding the education and inclusion of the deaf children in Malawi. The situation is, however, more promising in South Africa.

South Africa

Although South Africa has done a lot in terms of sign bilingual education, like in many other African countries, the status of Sign Language is undermined. Magongwa (2010:495) observes that South African Sign Language (SASL) is not recognised as a language equal in standard to all other languages despite the unanimous support by prospective legislation, namely the

South African Constitution (1996), the South African School Act (1997) and policies such as the Integrated National Disability Strategy, Education White Paper 6 (2001) and the Revised National Curriculum Strategy which recognise it as the natural language for the deaf. While SASL is not listed as one of the 11 official languages, it is mentioned for promotion and development of learning and, according to the South African Schools Act (1996), has the status of an official language for the purpose of learning (Glaser & Van Pletzen, 2012:28; van Staden, Badenhorst & Ridge, 2009:53). In this context, and quite interestingly, Mayer and Leigh (2010:176) identify South Africa as one of the countries that has adopted sign bilingual education.

Nevertheless, the Constitution in Section 6(5) (a) (iii) directly mentions SASL under the provision for the Pan South African Language Board as a language that needs to be promoted and for which conditions for its development and use should be created. Therefore, South African Deaf Association (SANDA) recommends that SASL be granted official recognition as the 12th official language in order to set the agenda for meaningful inclusive development, hence sign bilingualism for the deaf (South African Deaf Association, 2016:3). The Education White Paper 6 (2001) sets out the blue print for building an inclusive education system by identifying and removing barriers to learning of which for the deaf children one such barrier is use of oral methods. The main challenge is that many deaf students in SA still encounter English as the dominant language of teaching and learning in school (Glaser and Van Pletzen, 2012:3). Van Staden et al. (2009:53) argues that despite all the efforts, sign bilingual education in SA is still not fully established because many teachers of the deaf cannot sign and still believe in oral based methods. Magongwa (2010:495) cites the main barrier to the practice of sign bilingual education to be the lack of fluency in SASL among the teachers of the deaf. The author decries lack of policy, for instance, that requires teachers to be trained in Deaf pedagogy and SASL prior to the assumption of duty in schools for the Deaf.

DEAFSA (2009) in Glaser and Van Pletzen (2012:2) reports that only 142 of the teachers of the deaf in SA had well developed SASL skills, most of them had no specialized training some had no teaching qualification at all and there were only about 20 qualified Sign Language

interpreters in the country with just a few working in the education sector. Drunchen (2010:496) notes that SASL is mainly used in special schools but argues that Sign Language cannot be relegated to special schools only but must be used as a method toward including Deaf children in inclusive schools in SA. The South African scenario compares significantly with that of Zimbabwe.

Zimbabwe

The current study was aimed at interrogating how sign bilingual education is used as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. The Zimbabwean education system, because of the country's history as a British colony, is generally grounded in the British practices but Deaf education in the country is predominantly modelled along American lines. This is because Zimbabwe, like America, is a highly pluralistic society, with a diverse and dynamic sociocultural environment and boasts of 16 official languages of which Sign Language is one (Constitution of Zimbabwe, 2013). In addition, Zimbabwe, like America and the UK, uses English as the main official language but the Zimbabwe Sign Language (ZSL) has no genetic links with any of the existing spoken languages in Zimbabwe. The language emerged in the 1940s when missionaries built schools for the deaf, where the deaf children acquired it (Kadenge & Musengi, 2018:339). According to Kadenge and Musengi (2018), it is also important to note that Deaf education in Zimbabwe has a history of special schools as a function of the influences of both European and American origin. It is undeniable that this history has obvious implications for how sign bilingual education is conceived and practised in the country.

In Zimbabwe, while the term sign bilingual education is not popularised, in as much as is the situation in other African countries, the positive development is that the Constitution of Zimbabwe, Amendment No. 20 (2013) does recognise Sign Language as one of the sixteen official languages. Section 6, Sub-Sections 3 and 4 of the Constitution of Zimbabwe (2013:17) Amendment Number 20 lists Zimbabwe Sign Language (ZSL) as one of the 16 official languages and promulgates that all the official languages should be treated equitably, the language

preferences of the people should be respected and that ‘the State should promote and advance the use of all languages including Sign Language’. This recognition of Sign Language as equal to the majority oral languages automatically legitimises the use of sign bilingual education in Zimbabwe.

In addition, the language policy which is contained in the Zimbabwe Amendment Education Act (2006) Section 12, substituted for Section 62 of the Principal Act (1996), directs that all the three main languages of Zimbabwe namely Shona, Ndebele and English shall be taught on an equal time basis in all schools up to Form Two. Section 12 Sub-section 5 of the Education Amendment Act (2006) states that Sign Language shall be the priority medium of instruction for the deaf and hard of hearing. While English is the main medium of instruction beyond Grade 3, Gora (2013:123) proposes that the student’s native language be used up to Grade 7 in all subjects and up to University level in certain subjects. For the deaf, this would mean using Sign Language. The Nziramasanga Commission (1999:230) had earlier recommended a specific policy on Special Education which should include the learning and teaching of the Zimbabwe Sign Language (ZSL) throughout the education system. Already, the Disabled Persons Act (1992) had been enacted to ensure that disabled people are accorded equal access and full participation in education, employment, sport and recreation (Government of Zimbabwe, 1992:51) which for the deaf can be achieved through sign bilingualism (Brown, 2009:2). The Zimbabwe Sign Language Bill proposes free Sign Language interpretation services for deaf children in school (Deaf Zimbabwe Trust, 2015:5).

There are also operational policies that promote sign bilingual education practices in Zimbabwe. The Education Secretary’s Circular Minute Number 20 (2001) identifies Sign Language as one of the subjects to be taught in schools while Education Director’s Circular Minute Number 24 (2001) provides for signed examinations for deaf candidates. The Education Director’s Circular Minute Number 7 (2005) outlines guidelines for the inclusion of children with various disabilities including those who are deaf. On the whole, Education Director’s Circular Minute Number 2 (2010) deals with the enhancement of educational

access and improvement of service delivery within the Special Needs Education Framework. All these pronouncements, although not directly pronouncing it, promote the use of sign bilingual education in Zimbabwe.

Further, soon after independence, the Government of Zimbabwe legislated for the provision of Education for All (EFA), established Schools Psychological Services (SPS) to cover all schools and went on to create an enlarged Schools Psychological Services and Special Needs Education (SPS & SNE) Division (Government of Zimbabwe, 2005:11). One of the mandates of the SPS and SNE Division is to spearhead inclusion. A two volume ZSL Dictionary has been produced but the signs in the dictionary are either inadequate or incomplete. Musengi et al. (2012:9) speculate that the inaccuracy of the signs in the dictionary may be due to the fact that each special school for the Deaf in Zimbabwe uses its own peculiar signs and that since the dictionary was written by people who are not native signers; some of the information might have been lost in the process. The researchers highlight that the spatial movement, which is a key element of Sign Language, might have been difficult to capture in the static dictionary rendering some of the signs inadequate.

Specialist teachers, including those of the deaf children, began to receive special training at certificate level in 1986 and at diploma level in 1990 at the United College of Education (UCE), an Associate College of the University of Zimbabwe and from 1994 the University of Zimbabwe began to offer an Undergraduate Degree programme in Special Education (Peresuh & Barcham, 1998:76). Zimbabwe Open University as well as Great Zimbabwe University also later began to offer training in special needs education at Bachelor's and later at Master's degree levels (Muranda, 2015:407). Non-governmental organisations have also made tremendous contributions to the implementation of inclusive education in Zimbabwe. For example, the Leonard Cheshire Disability Zimbabwe Trust in MaShonaland West had trained 323 mainstream teachers from inclusive model schools and provided refresher courses to 113 specialist teachers by 2014 (Leonard Cheshire Disability Trust, 2014:2). On the basis of the specialised training of special needs education teachers at the United College of

Education and the University of Zimbabwe, Musengi, Ndofirepi and Shumba (2012:3) predict that such arrangements imply that many teachers of the deaf children in Zimbabwe are specialists.

However, Musengi and Chireshe (2012:107) discovered that even these specialist teachers were not fluent in Zimbabwe Sign Language (ZSL) and tended to emphasise spoken language in their teaching. The researchers postulated that in their study, all mainstream teachers in Zimbabwe were not conversant with Sign Language while specialist teachers could not sign many abstract concepts. In a similar study, Sibanda (2015:8) concluded that teachers of the deaf in Zimbabwe were not proficient in Sign Language. To make matters worse, the Deaf assistants and Sign Language interpreters used in some schools for the deaf and resource units were not professionally trained (Musengi et al., 2012:11). Despite policies favouring sign bilingual education as a strategy for inclusion and the aforementioned efforts, the preferred mode of instruction of the deaf among the teachers is either SimCom or TC which Johnson et al. (1980) cited by the same authors branded as crypto-oralism where the emphasis on spoken language is hidden but still dominant.

Nevertheless, the aforementioned practices in Zimbabwe might be in line with an emerging conceptualization of sign bilingual education which encompasses both simultaneous language acquisition and the reversal of the order of language acquisition, the context of hearing technology with its implications for the use of mixed and blended language such as fingerspelling, sim-com, Sign Supported English (SSE), visual phonics and cued speech in addition to conventional sign and spoken languages (Swanwick, 2016:15-16; Mayer & Leigh, 2010:183-184). Owing to the foregoing efforts, this study presupposes that the teachers of the deaf in Zimbabwe have the potential to manage the inclusion of deaf children using sign bilingual education as the strategy and that the policy frameworks are favourable for this initiative.

2.11 INTERNATIONAL BEST PRACTICES OF SIGN BILINGUAL EDUCATION

Several best practices can be derived from the countries where sign bilingual education has been successful in inclusive settings. These include use of cochlear technology, training of teachers and parents, use of deaf teachers and deaf adults coupled with employment of deaf friendly inclusive policies. A new trend has also emerged where mixed and blended methods, although believed to be more biased towards oralism, are being explored in literature as possible means of facilitating sign bilingual education in inclusive settings. On the whole, these efforts are aimed at nurturing of a sign bilingual environment to encourage direct and spontaneous interactions between the DHH and hearing children (Tang, 2016:5).

2.11.1 Embracing Hearing Technologies

Nussbaum et al. (2012:16) implore that due to the proliferation of digital hearing technologies, an increasing number of educational programmes have moved toward designing and implementing sign bilingual education. This has been necessitated by the fact that deaf children's learning contexts have been changing as a function of access to inclusive education via advanced hearing technologies in the form of CIs in developed countries that have embraced sign bilingual education such as the UK, the USA and the Nordic countries. For Mayor and Leigh (2010:175) the widespread use of CIs has fundamentally changed the educational landscape for deaf learners in sign bilingual education programmes. The authors note that CIs have enabled deaf children's access to oral language but their claim that as a result, fewer parents are opting for sign bilingual education is viewed otherwise by Tang (2016:2-5). Tang (2016:5) sees possibilities of partnering sign bilingualism with cochlear technology in that more DHH children are now educated in regular instead of special schools. For Swanwick (2010:155), these technological advances have changed the potential of deaf children to use their residual hearing and, therefore, reveal a need to re-think the inevitability of sign bilingual education as a function of the increasing number of deaf children in inclusive settings.

With regards to increased use of CIs and practice of inclusive education particularly in developed countries, deaf children's changing bimodal and bilingual language needs have come under scrutiny (Swanwick, 2016:8), Watson, Archbold & Nikolopoulos (2006) in the same author, argue that, although some studies show that there is a general shift towards spoken language use due to cochlear technology, there is increased flexible use of sign language as per individual need. In the same vein Tang (2016:5) argues that cochlear technology together with the shift to inclusion has seen more of sign bilingualism in mainstream than special schools. This implies the relevancy of sign bilingual education amid the proliferation of hearing technologies.

However, technologies have their own challenges. Some of the challenges, according to Knoors and Marschark (2012:299), include loss of auditory information due to background noise, temporary equipment malfunctioning or dead battery. After all, even under optimal conditions, cochlear implantation does not guarantee oral language acquisition (Humphries, et al., 2014:31). This is because it is a fact that a cochlear implant (CI), for instance, does not restore the child's potential for a natural spoken language acquisition process (Klaudia, 2013:341). For instance, removing the hearing aid or cochlear implant leaves the child still deaf. Pritchard (2014:2) also concludes that while CIs give deaf pupils access to speech sounds, they are not always enough to give every child full access to spoken language. Nevertheless, sign bilingual education is believed to compliment the access that is afforded by CIs (Swanwick, 2016b:1; Swanwick, 2016:8; Tang, 2016: 2 &5). This position is further strengthened by the realization that actual research about the veracity of the claims about the negative impact of Sign Language for implemented children is either sparse or inconclusive (Svartholm, 2014:9).

2.11.2 Training of Staff and Parents

For sign bilingual education to prosper as a strategy for inclusion and considering its relative newness (Swanwick, 2010:153), there is need to train both teachers and parents in these

regards. Dias et al. (2014:495) posit that regular school teachers in particular should be trained to promote the inclusion of deaf children into mainstream sign bilingual education classes. Humphries (2013:23) similarly emphasizes that training in sign bilingual education is indeed essential for both pre- and in-service development of regular and specialist teachers of the deaf. Swanwick et al. (2016:300) add that professional development and teacher education should actually incorporate training in sign bilingual education. In effect, research suggests that teacher preparation and professional development influence teachers' attitudes toward their role in promoting sign bilingual education (Garcia-Nevarez et al., 2004: Lee & Oxelson, 2006 cited in Giambo & Szecsi, 2015:58). According to these researchers, pre-service teacher training and in-service professional development can also inform teachers of the benefits of sign lingual education and provide them with strategies for implementation. It is thus clear that teachers need an extensive repertoire of specialist teaching skills and strategies for making links between sign and spoken/written languages in order to support sign bilingual education (Swanwick, 2016:18).

In any case, training in sign bilingual pedagogy is no longer just experimental but an option that training institutions can offer under regularized standards and accreditation (Humphries, 2013:8). Such training could include fluency in Sign Language, experience in deaf culture and pedagogical training relevant to sign bilingual education. Training should also include preparation of deaf culturally responsive educators, that is, teachers who are culturally competent in deaf culture and proficient in Sign Language (Mouny et al., 2013:334). The authors believe that sign bilingual education teachers would demonstrate a commitment to understanding the development of literacy as informed by cultural, linguistic, epistemological and political diversity as a result of such training. A longitudinal study by Lange et al. (2013:3) at Metro School in USA established that the success of sign bilingual education was the result of all teachers and staff having participated in a two year sign bilingual education development programme involving intensive in-service training. Consequently, Humphries (2013:17) comments that in the USA, many of the schools which established self-declared sign bilingual programmes with little or no training of staff failed dismally.

In addition to the training of teachers, parents should also be trained particularly in the national Sign Language. WFD (2016:4) strongly implores governments to implement Sign Language training programmes for families and learners of deaf children in cooperation with Deaf communities and deaf Sign Language teachers. This training, according to WFD, should be provided at no cost and may include paid release time from work for parents and carers to attend the Sign Language classes. As has already been noted, in Norway, parents who choose the sign bilingual option for the education of their deaf children are provided a forty week long course in NSL in order to obtain basic skills in the use of the language for free (Kermit, 2010:159). Such support is in line with the UN Convention on the Rights of the Child and recommendations of the UN Committee on the Rights of the Child (General Comment No. 9, Paragraph 41) which state that state parties should render appropriate assistance and support to parents of deaf children to learn Sign Language at no cost (WFD, 2016:4). Tied to the training of parents is the need for their involvement in the planning and practice of sign bilingual education. Swanwick et al. (2016:299) observe that there is much to learn from the parents while Mitchner (2015:53) opines that parental view of sign bilingual education can be the guiding factor to its best practice.

2.11.3 Use of Deaf Teachers and Deaf Adults as Models

Swanwick and Gregory (2007:7) recommend that for sign bilingual education to prosper in inclusive settings, deaf culture should be recognised as central to the deaf pupils' experiences and should be promoted. They further explain that the sign bilingual education team should promote and maintain an ethos which is deaf aware and inclusive and should involve both the deaf learners and the deaf community. Tang (2016:2) points out that this can be achieved by the collaborative teaching of a hearing teacher and a deaf trainer in a bimodal bilingual fashion. Hsing (2015:2) further reports that in Hong Kong and the Netherlands, the roles of the sign bilingual model teachers are such that the hearing and the deaf teachers complement each other without repeating each other in the classroom. The deaf teacher is used for Sign Language teaching while the hearing teacher is used for oral language. This deaf-hearing co-teaching offers promising results in sign bilingual education (Hsing, 2015:4). According to Tang

(2016:9), the success of sign bilingual education programmes in Hong Kong are in effect attributed to the inclusion of a deaf teacher who serves as a Sign Language and social model not only for the deaf but also for the hearing children as well. Swanwick and Gregory (2007:6) earlier on posited that at structural level there is need to train and employ deaf teachers in order to facilitate the implementation and practice of sign bilingual education.

From this analysis, it is clear that the presence of a deaf teacher in the mainstream sign bilingual school does not only support Sign Language development of both DHH and hearing children but also participation and inclusion (Tang & Yiu, 2015:4). Research, according to Mitchner (2015:12), points to the fact that deaf teachers in sign bilingual classes might intuitively create curricula and learning environments that are strategically compatible with deaf children's specific learning needs. Consequently, Article 24 of the UN Convention on the Rights of People with Disabilities directs member states to take appropriate measures to train and employ deaf teachers who are qualified in Sign Language to facilitate inclusion of deaf children through sign bilingual education (WFD, 2016:6). Equally important is that good practice would exist when deaf adults are available as potential mentors for the deaf children to develop their identities, esteem and confidence in sign bilingual environments (Swanwick & Gregory, 2007:7).

2.11.4 Use of Mixed and Blended Methods

Swanwick et al. (2016:300) opine that in view of the new plurilingual view of deaf children there is need for a flexible and mindful use of a language repertoire that offers spoken, sign and Manually Coded forms of English (MCE) as per individual need. The authors also emphasise the need to shrug off the straitjacket conceptualization of language ideologies in deaf education as we move toward the new approach of sign bilingual education. This view, according to Mayer and Leigh (2010:184), calls for a new conceptualization of sign bilingual education to encompass both simultaneous language acquisition and a reversal of the order of language acquisition, for instance. The term MCE has been lost over the years in favour of Total Communication (TC), a philosophy more often used to refer to the flexible and

simultaneous combination of signs and speech (Marschark, Knoors & Tang, 2014:453). In the American literature, this is referred to as simultaneous communication (SimCom) while in the UK literature it is called Sign Supported English (SSE) (Swanwick, 2016:14). These blended methods are believed to facilitate communication and inclusivity for the deaf children and thus to be relevant to the conceptualization of sign bilingual education (Swanwick et al., 2016:300; Mayer & Leigh, 2010:184). Swanwick and Gregory (2007:6) predict that, for example, SSE is likely to have a significant role in sign bilingual education in terms of support for curriculum terminology.

While these mixed and blended methods of using sign and oral language, which also include fingerspelling, visual phonics, cued speech and speech reading, have been castigated for being spoken language driven, hence for being against the tenets of sign bilingual education from a systematic review of 1500 international references, a Norwegian research team found that many of the studies if not all reflected on the blended methods instead of real sign bilingual communication (Svartholm, 2014:9). These mixed and blended methods should, however, not be regarded as the main form of curriculum delivery (Swanwick & Gregory, 2007:6). This justification of the infusion of mixed and blended methods of language use into sign bilingual education practices is premised on the belief that chaining/ sandwiching, which is a way of making connections between Sign Language, fingerspelling and written language, can facilitate transfer between oral and Sign Languages and support deaf learners to make associations between sign and written vocabularies (Mouny et al., 2013:335). Referring to fingerspelling, Swanwick (2016:15) comments that it provides a visual representation of written graphemes and already forms a part of the natural lexicon of Sign Language and so is an accessible tool for deaf children, potentially providing a direct link to the printed word. Earlier on, Crume (2013:466) argued that fingerspelling is a true hybrid of a signed language and an alphabetic writing system and, therefore, can be used to support the development of sign bilingual education.

2.11.5 Policy Guidelines that Support Sign Bilinguality

Total dual language immersion and cultivation of deaf awareness (Tang & Yiu, 2015:4) as well as early exposure to dual language input to trigger bilingual acquisition (Tang, 2016:4) are key to the success of sign bilingual education. Early exposure to sign bilingualism supports the development of language foundation at an early age and a more balanced overall development (Tang & Yiu, 2015:4). Successfully implementing such practices in sign bilingual education require policy guidelines. Swanwick et al. (2016:300) also assert that as a result, language policies and approaches should be differentiated and be responsive to the needs of the increasingly diverse population of deaf children using sign bilingualism. It is thus encouraging that because of the consultative status of WFD and because of its involvement in the enactment of the Convention on the Rights of People with Disabilities several articles do mention support for Sign Languages and deaf culture (Kusters et al., 2015:9) and, therefore, do create provisions for sign bilingual education. The Convention on the Rights of People with Disabilities is the first human rights international convention to make explicit reference to Sign Language and deaf culture, mentioning them in articles 2, 9, 21, 24 and 30 (Kusters et al., 2015:18) paving way for sign bilingual education. In these regards the language policies with regards to sign bilingual education should, therefore, be more explicit, evidence based and differentiated (Knoors & Marschark, 2012:298).

In the UK for example, there are, for instance, many pieces of legislation that protect deaf people's rights to access services via a Sign Language interpreter (Stone, 2010:45). These include articles 21 & 22 of the Charter on Fundamental Rights of European Union, article 5 of the European Convention on Human Rights, Code C Police and Criminal Evidence Act (1984) and others. The problem is that even though deaf children are becoming more sign bilingual, current discourses in language and deafness still create boundaries around language pedagogies and policies that are neither authentic nor helpful for sign bilingual education practice (Swanwick et al., 2016:293). The authors argue that language policies that place delineations between sign and spoken languages work against the concept of sign bilingual education by constraining language choices in inclusive settings for deaf children. Therefore, revisiting language planning and policy in deaf education will require a reconsideration to

ensure best possible equal opportunities for educational and personal success (Knoors & Marschark, 2012:292). Kusters et al. (2015:19) insinuate that sign bilingual education needs to be contextualized within diversity and equality policy agendas.

2.12 CHALLENGES TO THE PRACTICE OF SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION OF DEAF CHILDREN

The practice of sign bilingual is not without challenges. For Kushalnagar et al. (2012:7), perhaps the strongest challenge faced by sign bilingual education is the old impairment view of deafness as a medical condition that has a technological solution. Swanwick (2010:154) observes that this impairment view is in stark contrast to the sign bilingual education perspective which promotes difference and diversity. The author further explains that the knowledge that deafness hinders full access to a spoken language with its cognitive and social emotional implications creates a conflict and ambiguity which is a puzzle unique to deaf education hence to sign bilingual education.

Humphries et al., (2014:31) identify under-informed professionals and hearing parents due to lack of training and experience as another major challenge for the practice sign bilingual education. Pritchard (2014:2) concurs that the biggest challenge for sign bilingual education is whether the mainstream hearing teacher is fluent and familiar with sign bilingual teaching methods or not. For Pritchard, it is also an obvious challenge for hearing teachers to communicate in both modalities that is in Sign Language and spoken language. This could be due to modality differences between the two languages and the fact that many hearing teachers are not native users of Sign Language. Mason et al. (2010:35) earlier on noted that, owing to the fact that most parents and teachers are non-native signers, children enter sign bilingual education with poor Sign Language skills because of late exposure. This makes it possible to find deaf children who are not fluent in either language (Humphries, 2013:14) causing a challenge for the practice of sign bilingual education. Kermit (2010:161) actually sees the complexity of mastering both languages at an age appropriate level as a challenge on its own. Mayer and Leigh (2010:178) also observe that it is often the case that deaf children

begin school with little or no proficiency in Sign Language, or in some cases in any language at all. This according to the authors puts the children at a decided disadvantage when they enter a sign bilingual education programme making it difficult to fully realise the intended benefits.

In Zimbabwe, it is usually the case that deaf children have not developed a sophisticated competence in any language by the time they start school (Musengi & Dakwa, 2011 in Musengi et al., 2012:4). This limited or little proficiency, particularly in Sign Language, affects the transfer between L1 and L2 since a minimum level of proficiency in L1 for the transfer to L2 should first occur (Mayer & Leigh, 2010:178). In the same vein, Swanwick (2010:155) identifies the unresolved paradox about the transferability between sign and oral language as yet another challenge for the practice of sign bilingual education. The other major challenge for sign bilingual education in mainstream schools is that deaf children are often few to achieve a 1:3 or 1:4 ratio which is recommended for co-enrolment (Tang, 2016:3). Hermans, de Klerk, Wauters (2014:420) admit that creating a sign bilingual environment in a mainstream school is easier said than done in that the small population of DHH children, that is, 1 in 1000 live births makes it difficult to cluster them in regular settings in the neighbourhood.

Consequently, Hsing (2015:2) concludes that emotional support that permeated deaf schools is being replaced by DHH students' feelings of loneliness in mainstream sign bilingual settings, since there are few such children. In these regards, for sign bilingual education to be appropriately implemented and be of benefit, increasing deaf enrolments in mainstream schools is one possible solution to resolve the problem of having lonesome 'deaf singletons' struggling on their own in the mainstream classroom (Knors & Marschark, 2012:301). In such situations deaf children face difficulties such as low involvement in social interactions and low peer acceptance where factors such as language delay, poor speech intelligibility and lack of strategies to repair communication break downs impede their inclusion into the mainstream classroom (Tang & Yiu, 2015:1). Tang (2016:3) suggests that in order to mitigate the challenge of lower numbers of deaf children, there is need to partner sign bilingual education with co-

enrolment in the mainstream schools, meaning that a critical mass of DHH children be brought into the mainstream classrooms. In addition to all the foregoing, is the challenge of catching up with practices in sign bilingual education which is characterized by rapidly changing language needs and profiles of deaf children as a function of hearing technologies (Tang, 2016:2; Swanwick, 2016b:1; Swanwick 2016:8 & 2010:155; Nausbaum et al., 2012:1). Meanwhile Mayer and Leigh (2010:179) cite lack of deaf adult models as yet another challenge. They elaborate that the challenge is to provide sufficient and timely access to a full model of a natural Sign Language.

2.13 CHAPTER SUMMARY

This chapter dwelt on the conceptions, foundations and international perspectives of sign bilingual education. Throughout the chapter, sign bilingual education is variously referred to as deaf bilingual education, bilingual education for the deaf, bilingual-bicultural (bi-bi) education or just sign bilingualism. A deeper analysis, however, demonstrates that sign bilingualism is, in effect, the philosophy that informs sign bilingual education. The chapter explicates how sign bilingual education is founded on the patrimony of Deafness. In rationalising and justifying sign bilingual education as a strategy for inclusion of deaf children into mainstream schools, the chapter cites the potential for improved academic performance, flexibility of interactions, improved cultural identity, exposure to diverse language opportunities, curriculum accessibility and responsiveness to dynamic changes in Deaf pedagogy as the premises for argument. Ultimately, the chapter interpolates the role Sign Language plays in sign bilingual education as a strategy for inclusion. Inclusion in these regards is strategically conceived as inclusive education. In tracing the emergence and evolution of sign bilingual education, this chapter chronicles the developments in the international arena, starting from Scandinavian/Nordic countries to UK and USA and then to Africa. It also derives best international practices and examines change processes as well as explores challenges of sign bilingual education as a strategy for inclusion. One can infer from literature that practices of sign bilingual education in the Nordic countries are well grounded for Zimbabwe to tape from. UK and USA could also contribute through their technological orientation. It is also clear

from this chapter that Zimbabwe could benchmark her standard of practice of sign bilingual education as a strategy for inclusion of deaf children using European and American standards in which case the cultural dynamics could add prospects for success. However, due to the socioeconomic challenges Zimbabwe was experiencing at the time of the study she could not, for example, afford sophisticated hearing technologies such as cochlear implants. This chapter having examined literature on international practices of signbilingual education as a strategy for inclusion, the successive chapter explores the theoretical framework, models and practices of sign bilingual education.

CHAPTER THREE

THEORETICAL FRAMEWORK AND METHODS FOR THE PRACTICE OF SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION OF DEAF CHILDREN

3.1 INTRODUCTION

The purpose of this study was to establish how sign bilingual education is practised as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. This chapter builds on the foundations and the international contexts of sign bilingual education as a strategy for inclusion of deaf children which were examined in the previous chapter. The chapter proposes a theoretical framework for the study and examines models and techniques that ensue from the proposed theories. It locates sign bilingual education as a strategy for inclusion within the social model of deafness. The chapter also contextualises the study within the popular Cummins' (1989; 1981; 1984; 2000; 2006) Linguistic Interdependence Theory which is at times referred to as the theory of Common Underlying Proficiency (CUP) and Vygotsky's (1938) socio-cultural theory.

3.2 THE CONTEXT OF SIGN BILINGUAL EDUCATION WITHIN THE SOCIAL MODEL OF DISABILITY

The social model of disability emerged as a consequence of the disability movements of the 1970s and sees disability as stemming from societal and environmental barriers (Sullivan, 2011: 1-2). From a general point of view, the social model takes a social-contextual approach and frames disability such as deafness as a social construct which is created when impairment interacts with societal barriers. Barnes and Ward (2000) in Sibanda (2015:222) concurs that the social model holds that disability is caused by the inevitable consequences of the limitations that society sets. This is because society is not sufficiently attuned to accommodate people with disabilities. Disability is thus a manifestation of such vices as societal prejudice and discrimination, inaccessible infrastructure and segregatory education systems (Sullivan, 2011:2; Degener, 2016:4). Sibanda (2015:222) adds that the explanation of

the social model is that disability is not located within the individual but that it is a consequence of the environmental, societal and attitudinal barriers that prevent persons with disabilities from leading normal lives. The social model thus rejects the idea of disability as a medical condition and advocates for the right to full participation of people with disabilities in socio-economic spheres such as education and employment (Sullivan, 2011;2). By so doing, the model regards disability as a mere difference within a continuum of human variations (Degener, 2016:3).

Therefore, the solution to disability, according to Sibanda (2015:222), is changing society or fixing it so that it accommodates or fits people with disabilities not the other way round. In Sullivan's (2011:2-3) expression, the solution to disability is fixing society to enable access and to reduce discrimination and negative attitudes that are barriers to participation of people with disabilities. Consequently, sign bilingual education as a strategy for inclusion of deaf children lends to such principles. The only major criticism of the social model is that it neglects the experience of impairment and the pain disabled people go through and how this affects their identity development (Degener, 2016:4). For this reason, Sibanda (2015:223) further comments that the model is at times too romanticized despite that its variations have remained the most promising options for disabled people.

With regards to deaf education, Swanwick (2010:154) categorically states that sign bilingual education as an approach in deaf education sits within the social model of deafness, a model which emphasises the valuing of deafness, Sign Language and esteem and recognizes the unique and distinctive features of deaf culture. The social model lends much to more positive and humanistic portrayals of people with disabilities than the medical model which regards disability as a medical condition that requires rehabilitation (Sullivan, 2011;2). It is thus in tune with the wider humanitarian and democratic goals of social inclusion (Swanwick, 2010:154; Sullivan 2011:3). According to Sibanda (2015:222), the social model of disability considers that people with disabilities are part of the global socio-economic, political and cultural ecology and as equal to their peers who are not disabled. This is consistent with the tenets of sign bilingual education as proposed by Vygotsky (1938). It similarly calls for equality

of sign and oral languages and respect for both the hearing and deaf cultures (Swanwick, 2010 & 2016; Tang, 2016; Kusters et al., 2015; Svartholm, 2010 & 2014). In this context, a social model of deafness validates the linguistic and cultural choices of deaf people, celebrates diversity and accommodates difference (Swanwick, 2010:154). Deafness itself is not viewed as a deficiency but rather as a culture with its own marvellous language, shared ancestry and a community that perpetuates cultural norms through the generations (Sullivan, 2011:3). The marvellous language referred to here is Sign Language which is the natural and primary language and irreplaceable tool for the deaf and which a valuable basis for sign bilingual education (Ausbrooks, Gentry & Martin, 2014:1-2).

For Mathews (2011:229), Sign Language lies at the heart of the social model of deafness too. This explains the intricate role Sign Language plays in the practice of sign bilingual education as a strategy for inclusion. Sign Language on its own is not seen as a loss but as a social culture and linguistic identity (Chen, 2014:8). Mathews (2011:232) also implies that in tune with the social model of disability, the adoption of sign bilingual education has dispelled the negative myths surrounding the use of Sign Language in the education of deaf children and has resulted in a shift in attitude in the education of deaf children. This is one of the consequences of the social model of disability which was generally created as one explanation of exclusion of disabled people from society and developed as a powerful tool to analyse discriminatory and oppressive structures of society (Degener, 2016:4). Therefore, the social model resonates with inclusion which can best be conceived as a response to student diversity based on principles of equality and acceptance that aim to give all children equal rights to participation (Kusters et al., 2015:19). These arguments are also mirrored through inclusion and at the same time interconnect with Vygotsky's (1938) socio-cultural theory which henceforth implies sign bilingual education as a strategy for inclusion of deaf children.

3.3 CONTEXTUALISING SIGN BILINGUAL EDUCATION WITHIN VYGOTSKY'S SOCIO-CULTURAL THEORY

Sign bilingual education as a strategy for inclusion of deaf children can also be conveniently located within Vygotsky's socio-cultural theory. The recognition of the fact that deaf people

comprise a deaf community which shares a common Sign Language with its own grammar and syntax, cultural norms, values and history has highlighted the need for a socio-cultural perspective which is a break-away from the traditional view of hearing impairment (Mathews, 2011:227; Chen 2014). In these regards, Swanwick et al. (2016: 292) conceives sign bilingual education as a new model of learning and deafness that is situated within a global view of language and culture. Kusters et al. (2015:9) posit that, while policy and legislation to date have merely seen deaf people as individuals or as groups made up of individuals, there is need to recognize them as collectivities and as culturo-linguistic minorities requiring legal protection akin to what is granted to other linguistic and cultural minorities.

The rise of the socio-cultural model of deafness sometimes known as a 'Big D Deaf' is signified by the capitalization of 'D' for Deaf indicating membership of a cultural or minority group (Mathews, 2011:227) as explicated in the introductory chapter of this thesis. The Deaf cultural movement gained increasing momentum in the 1980s and since then, there has been a revolutionary shift in deaf education away from the medical model of deaf students as disabled to the socio-cultural model of deaf students as a minority group with its own language and culture (Chen, 2014:1). In educational contexts, sign bilingual education has been seen as providing opportunities for deaf children to be exposed and be enabled to practice their own Deaf culture and achieve their Deaf identity while at the same time appreciating the majority hearing culture (Kushalnagar et al., 2012:7; Giambo & Szecsi, 2015:56). However, deaf children should also be educated to be able to live within the broader community which is punctuated by cultural plurality involving both Deaf and hearing people who use diverse languages. At the same time, the hearing majority should learn to co-exist with the Deaf free of stereotypes. In these regards, the most effective way of maintaining this coexistence is sign bilingualism (Kushalnagar et al., 2012:7).

It, therefore, follows from Glickman's (1993) contextualization of bicultural Deaf identity development within the socio-cultural theory that sign bilingualism impacts on the deaf children's construction of deaf identity (Chen, 2014:7). In effect, sign bilingual education as one of the new approaches to deaf education and learning embrace the concept of learning

as a sociocultural process in which language and culture co-construct development (Humphries, 2013:19). Consistent with Vygotsky's ideas, Nover, Christensen & Cheng (1998) in Rusher (2012:9) also propose a three-tiered framework of sign bilingual education that includes signify, literacy and oracy. Chen (2014:5) argues that socio-cultural theory (just like sign bilingual education) recognizes pride in deafness, the value of Sign Language and the importance of deaf culture. Humphries (2013:19) further promulgates that it is in effect the social nature of sign bilingual education which is a unique feature of the paradigm shift in deaf education and that the socio-cultural theory becomes a key element in these regards. The author also elaborates that enhanced social-cultural interaction which is enabled by sign bilingual education also helps deaf children who may have lacked enough access to language and social mediation of meaning making leading to the development of the theory of mind which is crucial to the understanding and interpretation of the social environment and acquisition of knowledge. But this can only be possible when there is tolerance of and respect for each other's cultures between the Deaf and hearing children. On the linguistic front, sign bilingual education as a strategy for inclusion of deaf children can further be contextualised within Cummins' Linguistic Interdependence Theory.

3.4 THE CONTEXT OF SIGN BILINGUAL EDUCATION WITHIN CUMMINS'S LINGUISTIC INTERDEPENDENCE THEORY

Sign bilingual education is hypothesized on the basis of at least two languages of varying modalities. Mouny et al. (2013:334) explicate that a premise of sign bilingual education is that early exposure to an accessible language is the key to developing native like proficiency in any language and that a solid first language (L_1) foundation is crucial for the successful acquisition of second language (L_2). In other words, sign bilingual education posits that early access to Sign Language and an environment that equally embraces sign and oral languages through the application of language planning principles provides an optimal foundation for literacy in the dominant spoken language (Mouny et al., 2013:334). Dammeyer (2014:110) concurs that sign bilingual education is in effect based on the theory that supporting natural and fluent Sign Language improves spoken language literacy skills. For these reasons sign

bilingual education is principally pillared in Cummins's (1981, 1984, 1989, 2000, 2006) Linguistic Interdependence Principle which posits that a Common Underlying Proficiency (CUP) across languages will allow positive transfer to occur from a first to a second language, if there is adequate exposure to the second language and motivation to learn it (Glaser & Van Pletzen, 2012:4; Mayer & Leigh, 2010:180; Knoors & Marschark, 2012:292).

Cummins (1981:29) writes, 'To the extent that instruction in L_x (first language) is effective in promoting proficiency in L_x (first language), transfer of this proficiency to L_y (second language) will occur provided there is adequate exposure to L_y (second language) and adequate motivation to learn L_y (second language).' Put in another way the theory reads; 'To the extent that instruction in L_1 (first language) is effective in achieving proficiency in L_1 (first language), transfer of this proficiency to L_2 (second language) can occur provided that there is an adequate input of L_2 (second language) and one is motivated to learn L_2 (second language)' (Cummins, 1981:29).

From the foregoing narrative, Cummins's Theory of Linguistic Interdependence proposes that competence in L_2 is a function of proficiency in L_1 (Freel et al., 2011:19). The theory is founded on the belief that all languages share common underlying proficiencies (CUPs) and, therefore, realises that at the foundation of sign bilingual education is the need for strong Sign Language proficiency in order to learn the written form of the spoken language (Barker & Stark, 2015:1). Cummins (2000) thus argues that transfer between languages is the process that allows deaf children to learn the two languages and that the transfer of conceptual knowledge and skills across languages is enabled by this CUP which then facilitates interdependence between Sign Language (L_1) and spoken language (L_2) for the deaf (Mounty et al., 2013:335). Giambo and Szecsi (2015:57) further elucidate that it has long been established that language skills transfer between languages and that proficiency in L_1 does facilitate language and concept development in L_2 . Cummins (2006) in Humphries (2013:13) concludes his review of research saying data clearly shows the existence of CUP and the possibility of this transfer even between sign and oral languages.

Cummins's principle of common underlying principle (CUP) can be conveniently divided into two levels which are both relevant to sign bilingual education as a strategy for inclusion of deaf children. Garate (2014:40) asserts that children develop two levels of proficiency in a language, namely a social and an academic level. Cummins (2006) termed the social level Basic Interpersonal Communication Skills (BICS) and the academic level Cognitive Academic Language Proficiency (CALP). BICS refers to the use of language for face-to-face social interaction such as day-to-day communication while CALP refers to the language of school, tests and text books containing discipline specific terminology and complex grammar (Garate, 2014:41). For Rusher (2012:11), BICS refers to the type of language used in social conversation while CALP refers to a more complex type of language such as is used in the classroom. Knoors and Marschark (2012:292) also enunciate that children largely acquire BICS through informal means while schooling helps them develop CALP which forms the language for reading, writing, learning and reasoning.

When deaf students achieve high levels of competence in both BICS and CALP in Sign Language which is their natural L1, the positive transfer would occur to learning L2 (spoken language) including text literacy skills (reading and writing) (Glaser & Van Pletzen, 2012:4). According to these authors, CALP in Sign Language would provide scaffolding to develop text literacy skills in L2 and that this would apply even though the modalities between L1 and L2 are different. However, Freel et al. (2011:18) have a contrasting view that often deaf children only attempt to learn both BICS and CALP when they arrive at school resulting from incomplete access to Sign Language for social interactions at home and with peers during the transitional period for language acquisition. This analysis has formed part of the basis for the critiquing of the applicability of Cummins's theory to deaf individuals.

Despite Freel et al.'s (2011) reservations, evidence still point to the fact that, in applying Cummins's theory to the situation of deaf children when a natural Sign Language is fully developed as L1 and used as the primary language of instruction, spoken language literacy (L2) will develop as a result of the transfer of skills from Sign Language (L1) (Mayer & Leigh, 2010:176). Freel et al. (2011:19) later agreed that when applied to deaf individuals,

Cummins's research suggests that individuals who have full command of Sign Language as L1 are better disposed to learn the written form of a spoken language as L2. For this matter, the outcomes of Cummins's research have demonstrated that, regardless of modality difference between sign and oral languages, transfer can still occur at the conceptual, metalinguistic, and linguistic and phonological levels (Swanwick, 2016:18). Meanwhile, Tang (2016:3) reports that while Cummins's Linguistic Interdependence Hypothesis (LIH) was developed to account for bilingual education in spoken languages, it has tended to hold a great appeal to educators who promote sign bilingualism. The author implores that when applied to deaf learning conditions, the theory stipulates that, given a common underlying proficiency (CUP) among languages, development of a strong conceptual and linguistic foundation in Sign Language at an early age facilitates transfer of such knowledge to spoken language thereby supporting literacy and academic skills development in the long run. The basis for this transfer is that CUP underlies all languages used by an individual despite modality differences (Rusher, 2012:10).

Barker and Stark (2015:1) confirm that Cummins's hypothesis has been applied to sign bilingual education with many such programmes having at their core the notion that a firm foundation in Sign Language will allow transfer to the written form of the majority spoken language. As sign bilingual education became increasingly articulated especially in Scandinavia, the UK and the USA, Cummins's Linguistic Interdependence Theory became an accepted theoretical basis upon which to speculate about sign bilingual education (Swanwick, 2016:10). However, despite such compelling evidence, some scholars have vehemently critiqued the possibility of a transfer between sign and oral languages. Mayer and Leigh (2010:177) complain that concerns have been raised as to the applicability of the linguistic interdependence theory to sign bilingual settings. A fierce debate which has problematized sign bilingual education has ensued from such dissenting contentions (Swanwick, 2016:10) as a result.

3.4.1 Critique of the Applicability of Cummins's Theory to Sign Bilingual Education

The application of Cummins's theory to sign bilingual education has proved contentious with some researchers such as Mayer and Wells (1996) and Mayer and Akamatsu (1999) maintaining that the modality difference between sign and spoken languages make the application of the theory to sign bilingual education context tenuous (Barker & Stark, 2015:1). In a landmark publication Mayer and Wells (1996:103) argued that deaf children do not learn the written form of language in circumstances commensurate with other L₂ learners for the reasons that Sign Language has no written orthography and that deaf children usually approach the learning of spoken language without established and fluent Sign Language skills. Mayer and Wells (1996:104) describe this as 'a double discontinuity.' This Double Discontinuity Hypothesis questions the level of transfer possible when Sign Language has no written form of its own and when the spoken form of the majority spoken language is not fully accessible to the deaf (Barker & Stark, 2015:1; Swanwick, 2010:154).

For Mayer and Leigh (2010:177), although not explicitly stated in the articulation of Cummins's theory, it can be taken as read that, for any transfer to be possible from L₁ to L₂, a minimum level or threshold of proficiency in L₁ must be in place to start with. Mouny et al. (2013:335) query that, while Cummins (1981) posits that there must be sufficient proficiency in L₂ before an individual draws from L₁ to further develop L₂ skills, deaf children typically have restricted access to the spoken language which is used for reading and writing. In addition, for these deaf children who often arrive at school without Sign Language being their L₁ there is also no social language provide before formal oral language instruction (Freel et al., 2011:18). In these regards, according to Mouny et al. (2013:335), CUP would only apply to conceptual knowledge and metalinguistic and metacognitive processes but not necessarily to the transfer of vocabulary and grammar.

Often, the command of L₁ in bilingual education can be assumed but this cannot be a safe assumption in the context of sign bilingual education (Mayer & Leigh, 2010:178). This is because 90%-95% of parents of deaf children are hearing and do not have this linguistic resource as L₁ to support the DHH child and even the signing of hearing teachers being second

language learners themselves is also a concern (Tang, 2016:4). Therefore, with the exception of the 10%-5% of deaf children who have deaf parents, the requisite language conditions are not in place for natural acquisition of L1 (Sign Language) to occur (Mayer & Leigh, 178). Basing on such evidence, Mayer and Leigh (2010:179) conclude that Cummins's assumptions are, therefore, not necessarily valid in the context of sign bilingual education particularly for deaf children of hearing parents. They also conclude that, wherever there remains a delay in Sign Language acquisition, the theoretical benefits for L2 that are predicted by the Linguistic Interdependence Theory are unlikely to be fully realised. Similarly, deaf students whose sign and spoken languages are relatively weak may not benefit cognitively and academically from interactions within their environments (Cummins, 2000 in Rusher, 2012:10). These authors also base their conclusions on the understanding that as has been highlighted elsewhere in this thesis, it is often the case for deaf children to begin school with little or no proficiency in SL or in some cases in any language at all. This puts them at a decided disadvantage when they enter a sign bilingual education programme making it difficult to fully realise the intended benefits of the approach.

According to Tang (2016:4), while one must caution that there might be no straight forward transfer of bilingual theories and practices in hearing to the deaf context, insights from such research instil new interpretations on sign bilingualism in deaf education. As such, these concerns should, however, not be misconstrued as a criticism of the theory or a rejection of sign bilingualism as a goal but rather as just a questioning of the applicability of the model in context where learners may not have ready access to the target L2 as is typically the case (Mayer & Leigh, 2010:177). These comments suggest that despite the foregoing critiques of the applicability of Cummins's Interdependency Theory, it still remains the most valid of the frameworks within which sign bilingual education could be contextualized. The next section firmly endorses the theory as the conduit of this study and dispels the foregoing critique.

3.4.2 Challenging the Critique of the Applicability of Cummins's Theory to Sign Bilingual Education

Swanwick (2016:11) is of the view that the foregoing critique is problematic in that it is based on a narrow view of linguistic transfer and of routes to literacy development. The author asserts that the critique assumes that there are no goals relating to spoken language development in sign bilingual education and that the only route to literacy considered in sign bilingual education is via Sign Language, ignoring the fact that approaches to sign bilingual education are more diverse and nuanced. Notably, Cummins's (2006) view of linguistic transfer incorporates conceptual knowledge, metacognitive strategies and pragmatic skills as well as linguistic and phonological knowledge levels in both languages. Tang, Lam and Yiu (2014:330) promulgate that there is growing evidence of positive interaction between sign and spoken languages at all the aforesaid levels and confirm that indeed transfer can take place across and between two or more dissimilar languages. The results of a study by Ausbrooks et al. (2014:15) suggest this transferability between Sign Language and oral language despite linguistic incongruence.

There is also emerging evidence at the lexical level demonstrating that children with more extensive Sign Language vocabularies tend to have more extensive written vocabularies as well (Hermans et al., 2008; Holzinger & Fellingner, 2014 in Swanwick, 2016:12). This new evidence also suggests that transfer at the semantic lexical and grammatical levels can be obtained in the case of deaf children in sign bilingual education settings (Tang et al., 2014:334). This puts to rest Mouny et al.'s (2013:335) contention that CUP would only apply to conceptual knowledge and metalinguistic and metacognitive processes but not necessarily to the transfer of vocabulary and grammar. It also challenges Knoors and Marschark's (2012:292) claim that transfer of linguistic skills in sign bilingual education is limited mostly to CALP and does not happen automatically. In effect Cummins (2007:3) confirms that language interdependence does exist between Sign Language and oral language regarding the transfer of conceptual knowledge, metacognitive and metalinguistic strategies as well as pragmatic aspects of language, specific linguistic elements and phonological awareness.

Results of a longitudinal study by Lillo-Martin et al. (2012) which is cited by Tang (2016:4) demonstrate bidirectional cross linguistic transfer between a sign and a spoken language. Yet Hermans et al. (2010:194) earlier argued that it is possible to facilitate written spoken language (L2) development for deaf children by capitalizing on the Sign Language abilities, thereby effecting a cultivated transfer which Hermans et al. (2008) cited in Swanwick (2016:12) believes can be achieved through chaining. These findings continue to suggest that for the deaf, the more accessible language which is Sign Language can be used to promote the less accessible language which is spoken language (Mouny et al., 2013:334). This is interpreted as indicating that a well-developed Sign Language (which can be cultivated) is important for deaf individuals to learn the written form of the spoken as a second language (Rudner et al., 2015:10). In any case there is growing evidence that the two languages both depend on one another and influence one another (Giambo & Szecsi, 2015:57). For example, a research programme on language and literacy conducted by the University of California found a positive correlation between deaf children's fluency in ASL and reading scores (Humphries, 2013:13). With this link between Sign Language and spoken language, according to Humphries, the basis for sign bilingual education has even become stronger.

It should also ultimately be put to record that after all, Cummins's theory of linguistic Interdependence Principle has been hypothesised in relation to sign bilingualism and literacy and has been found so valid that it has since influenced policy and practice regarding the role of sign language in deaf children's literacy development in countries such as Scandinavia, the UK and the USA (Swanwick, 2010:154). Accordingly, the transfer which is envisaged by this theory is not a mere hypothesis but has been evidenced in both general bilingual and sign bilingual education (Garate, 2014:4). The author is emphatic that the transfer is also not limited to experiential activities such as the physical acts of reading and writing but also include the cognitive skills that support these activities.

In essence, sign bilingual education is a language contact phenomenon and as such a natural part of daily interaction even where Sign Language is the shared and fluent language for all (Swanwick, 2016:7). Barker and Stark (2015:2) propagate that deaf people have always had

a way to represent the spoken language on their hands, at times using contact signing in a spoken language like manner while maintaining some of the visual-spatial grammatical features of Sign Language. These evidences and arguments endorse the transferability envisaged between sign and spoken languages and designate it as almost not debatable in the current practice of sign bilingual education. In the same vein, models that borrow from Cummins's theory and from the other two theories that have been examined in this section are being proposed in the next section as being supportive of sign bilingual education as a strategy for inclusion.

3.5 MODELS FOR SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION

Models for sign bilingual education are varied and were adopted from general bilingualism and adapted for use when two language modalities are used. They all derive from the theories which were discussed in the foregoing section. Garate (2012:3) postulates that bilingual practices that support sign bilingual education have their origin in general bilingual education. This is because sign bilingual education incorporates knowledge, pedagogy and methodologies from general bilingual education (Plaza Pust, 2005:1845). The only major variation is that while general bilingual models are based on the oral only language modality, sign bilingual education models involve both the oral and manual modalities (Swanwick, 2016:2; Tang, 2016:3; Rusher, 2012:9). These models are meant to inform and facilitate the equitable use of sign and oral language in mainstream classrooms as a way of facilitating inclusion of deaf children. There are two broad categorisations of bilingual education models. These are subtractive and additive models. In some literature subtractive models are referred to as transitional models while additive models are known as maintenance models (Liberali & Megale, 2016:97). For the purpose of this literature review, maintenance models are treated as one of the branches or types of additive models and subtractive models are no reviewed since they are against the spirit of sign bilingual education.

3.5.1 Additive Sign Bilingual Models

In contrast to subtractive bilingual models, additive models, like maintenance and enrichment models aim for bilingualism and bi-literacy (Liberali & Megale, 2012:98). This is because they support the development of the native language of the learner while fostering acquisition and use of the majority language (Garate, 2012:2). Thus, unlike subtractive models, additive models promote pluralism hence inclusivity and are not assimilationist. According to Pacific Policy Research Centre (2010:3), a programme can be considered additive if it promotes bilingualism and bi-literacy over the long term, usually by adding another language to the existing student's repertoire. For this reason, Hakata (1990), Hamers (1998) and Garcia (2009) all cited in Garate (2012:2) agree that additive bilingualism draws upon the existence of a common core of linguistic proficiencies that are shared by languages for the benefit of their development and for facilitating interaction among the users of the two languages. The foregoing explanation further confirms the basis for premising sign bilingual education on Cummins's (1981; 2006) Linguistic Interdependence Theory with research demonstrating that first language proficiency is a powerful predictor of second language development (Cummins, 2006:5; Bialystok, 2007:46; Helot, 2002:23).

With reference to sign bilingual education as a strategy for inclusion, Sign Language becomes a resource that acts as a bridge upon which the second language in form of written text could be developed to facilitate educational participation and inclusion (Swanwick, 2016:18). On these bases, deaf children, much like their hearing peers, have a need for access to development of L1 (Sign Language) in addition to instruction in the majority/dominant language (oral language) (Baker, 2006; Garcia, 2009; Easterbrooks & Baker, 2002 and Mayberry, 2007 in Garate 2012:2). There are various additive models that include maintenance, enrichment or two way models, immersion and heritage models which are available and can be adopted for sign bilingual education as strategy for inclusion.

3.5.1.1 Maintenance Sign Bilingual Education Models

The way literature defines maintenance bilingual models is similar to how additive models in general are conceptualised. But for the purpose of this literature review and considering that there are other types of additive bilingual models in use today, maintenance models are conceived as a type of additive model where Sign Language is maintained as the main instructional tool for the deaf and oral language is used to facilitate inclusion into the mainstream society (Svartholm, 2014:3; Humphries, 2013:16; DEAFVOC, 2010:2). In essence, a maintenance sign bilingual programme considers the social and academic functions of both languages, promotes their consistent and strategic use in the classroom and aims to deliver content instruction in both languages making it a viable design for deaf children (Garate, 2012 in Garcia, 2014:38). According to the Pacific Policy Research Centre (2013:3) maintenance programmes, as the name suggests, are limited to the maintenance of the minority language (which in the case of sign bilingual education is Sign language) making them additive and fairly strong.

The student's L1 is maintained as a basis for learning L2. To this end, a maintenance bilingual program aims to form a solid base for the student in their L1 that in turn facilitates the acquisition of literacy in L2 on the basis of the developmental interdependence principle (Cummins, 1979; 1981 & 2000). This theoretical underpinning is observed through having education in L2 at an early stage perhaps 50% of the time but in the early years of the maintenance programme emphasis is on L1 proficiency (May, 2008:26). Meanwhile, the Pacific Policy Research Centre (2010:4) affirms that through the maintenance model, the deaf students' deaf culture and deaf identity is affirmed leading to meaningful inclusion. Willoughby (2012:609) posits that deafness sector professionals encourage maintenance of Sign Language and that together with parents, the professionals are profusely aware of the benefits that this has for the inclusion of deaf children. The author also believes that advances in cochlear implant and hearing aid technologies may make language maintenance for the deaf an achievable goal.

3.5.1.2 Enrichment, Two-Way or Developmental Sign Bilingual Model (The USA Model)

In the enrichment model, also known as the two-way or developmental sign bilingual education model is an American variation of the immersion programmes practiced in Canada (Hong, 2010:2). The author says that, in this model, unlike in the maintenance model, fluent or native users of oral language and those of Sign Language are placed in the same classroom and taught in both languages with the goal of having both groups becoming fluent in the other language. In this arrangement, deaf children are expected to become fluent in the spoken language (reading and writing) while their hearing counterparts become fluent in Sign Language. The Pacific Policy Research Centre (2010:3) explains that enrichment bilingual education focuses on teaching academic proficiency through the medium of L1 where upon literacy in L2 can be attained. Such an arrangement values both languages and facilitates the inclusion of deaf children. The outcome of enrichment sign bilingual education models is, therefore, additive bilingualism (Liberali & Megale, 2016: 98) which leads to inclusivity.

The Pacific Research Center (2010:4) also reports that enrichment programmes deliberately seek to extend the influence of the minority language (in this case Sign Language) within ‘an integrated (inclusive) national society.’ In other words, the goal of enrichment bilingual education programme is not only linguistic in nature but social, hence inclusive. In effect, enrichment programmes aim for inclusion, cultural pluralism and autonomy of cultural groups (Hong, 2010:2) wherein sign bilingual education also recognises and respects both the deaf and hearing cultures (Humphries, 2013:19; Gregory, 2006:1; Mitchner 2015:52) in the diverse inclusive mainstream schools.

3.5.1.3 Immersion Sign Bilingual Model (The Canadian Model)

Immersion bilingual education in Canada is what is referred to as enrichment, two-way or developmental bilingual education in the USA. Taylor (1992) cited by Roberts (1995:376) reports that immersion bilingual models were originated in Canada and are usually designed to teach majority language speakers a foreign language. Just like in the enrichment sign

bilingual model, in the sign bilingual immersion model, hearing children are taught Sign Language while deaf children are taught the oral language (reading and writing). According to the Pacific Policy Research Centre (2010:5), immersion bilingual programmes often commit half the time and resources to either language. Children learn in both languages equally and share classrooms where activities are designed to elicit peer-to-peer sharing and learning of language and culture (Hong, 2010:1; Mitchner, 2015:52). This facilitates social interaction and hence inclusion. In effect, the philosophy behind additive immersion bilingualism is that of promoting integration between the majority or dominant languages and minority languages, rather than assimilation of minority language students by the dominant language culture (Roberts, 1995:374; Garate 2012:2; Gort & Pontier, 2012:1). This suggests that, such programmes can be effective in fostering sign bilingualism in deaf children for which it is central to their inclusion. According to Tang and Yiu (2015:4), total dual language immersion and cultivation of deaf awareness in the school are central to the success of sign bilingual education.

3.5.1.4 Heritage Sign Bilingual Models

Heritage bilingual models are an extension of maintenance, enrichment and immersion programmes but aim to rejuvenate or revitalise an endangered or lost indigenous or native language (Liberali & Megali, 2016:99). Hong (2010:2) states that heritage bilingual models share characteristics with maintenance and enrichment or immersion models but have special emphasis on the recovery of a lost or endangered language. The models also work to cultivate cultural heritage awareness which in the context of sign bilingual education as a strategy for inclusion would entail Deaf culture. By definition, a heritage bilingual programme is one designed or tailored to address the needs of heritage language learners or native users of a minority language (Kelleher, 2010:1). Like in the other additive bilingual models, the aim of heritage bilingual models is bilingualism, notwithstanding the fact that the heritage or native language takes priority (Lopez, 2010:1). Thus in sign bilingual education a heritage model would be most relevant where societal negative attitudes threaten to relegate Sign Language and hence Deaf culture to the doldrums of extinction. This means that a heritage

model of sign bilingual education as a strategy for inclusion could be used as a tool for the advancement of Deaf-hood and Deaf culture.

Owing to the foregoing analysis, the Pacific Policy Research Centre (2010:5) notes that efforts to create and develop heritage bilingual programmes could easily be politicised and thwarted by post-colonial structures of governance where funding may not prioritise promotion of indigenous or minority languages. In effect, according to Hong (2010:2), the core components of the heritage model have socio-political connotations. This has been the case pertaining to Sign Language in many countries including Zimbabwe. After all, it is general knowledge that bilingual education programme philosophies in general are largely influenced by the socio-historical, cultural and political contexts (Creese & Blackledge, 2010:103). In these contexts, a minority language such as Sign Language could be seen as a problem to be solved or viewed as a resource to be tapped (Freeman, 1996 & Hornberger, 1991 in Hong, 2010:2). By implication, the additive heritage sign bilingual model strongly considers Sign Language as a resource not worth to be lost if inclusion of the deaf is to be successful.

3.6 ORTHOPEDAGOGICAL APPROACHES TO SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION

Use of sign and oral languages in sign bilingual education is not a haphazard but a well-planned process. There is need for careful allocation of time and choice of pedagogical approaches and strategies in order to ensure equitable use and equal recognition of the languages. Garate (2012:3) believes that conscious selection and strategic use of each of the languages leads to planned allocation of time and resources. Earlier on, Milk (1990:32) underscored the importance of planned allocation in terms of which language is to be used in which subject by which teacher and in terms of whether a strictly separate or concurrent use of language model will be adopted. This is necessary for the development of both conversational and academic competencies as well as facilitation of meaningful interactions necessary for the inclusion of deaf children into mainstream schools (Garate, 2012:3). As has

already been highlighted, the two broad categories of bilingual allocation are language separation and concurrent use of language. Nonetheless, Riegelhaupt (2000:210) observes that, by then, none of these language categories had been studied in depth.

3.6.1 Language Separation

Language separation in sign bilingual education entails having different times for Sign Language and the dominant oral language, different subject lessons, language teachers or places for the two languages. Garate (2012:3) explicates that languages can be separated by time of the day, subject or person (teacher). Separation by time of the day could mean using Sign Language before break time and English after break time for the same lessons while separation by subject could mean for example having History in one language and Science in the other (Riegelhaupt (2000:211). Yet, Plaza Past (2005:1845) implies that in some sign bilingual separation programmes all curriculum subjects are taught in Sign Language, for instance, and English is taught as a foreign language. One benefit of language separation is that students have the opportunity to focus on and learn each language independent from the other enabling them to understand and practice linguistic functions in the two language modalities (Garate, 2011:221).

Jacobson and Faltis (1990) in Creese and Blackledge (2010:104) report that bilingual educators aligned to language separation approaches, argue that by strictly separating the languages the teacher avoids cross-contamination thus, making it easier for the child to acquire a new or additional linguistic system. This according to the authors is also believed to give learners the opportunity to more fully develop the two languages within parallel monolingual contexts. In addition, language separation is believed to provide learners with the opportunity to produce extended discourses in which they must make their languages coherent, accurate and socio-linguistically appropriate (Swain, 1985 & Lindholm-Leary, 2001 in Gort & Pontier, 2012:5). Classically, Cummins and Swain (1986:108) believed that language separation helps combat the natural tendency of minority language users to shift to the

majority language due to skewed hegemonic power struggles while Creese and Blackledge (2010:105) justify it on the basis that languages should be kept rigidly separate since they constitute separate solitudes.

Even without adequate empirical research, the practice of language separation in bilingual education in general has been widely accepted and employed (Gort & Pontier, 2012:5). In so doing, bilingual allocation in sign bilingual education as a strategy for inclusion should be more flexible than in general bilingual education to ensure effective and equitable use and recognition of Sign Language due to its unique modality. In these regards, Garate (2012:3) emphasises that while some general bilingual programmes advocate for a strict separation of the two languages, sign bilingual programmes must be more flexible in their selection of the categories to ensure that all the students have access to communication and content. For the deaf, this would also facilitate their inclusion. In effect, a study by Gort and Pontier (2012:1) concluded that despite its traditional popularity, strict language separation is at odds with natural social interactions of bilinguals who draw on a variety of communicative strategies such as code switching which suggests a place for concurrent use of language. Thus it is prudent to also explore the efficacy of concurrent usage of language.

3.6.2 Concurrent use of Languages in Sign Bilingual Education

According to Garate (2012:3), the term concurrent use as applied to general bilingual education does not mean simultaneous use of two spoken languages as this would be practically impossible. The author implies that the concurrent use of sign and spoken language (reading and writing) in a lesson is possible but requires purposeful and planned switches between them in order to provide learners with more immediate support. Garcia (2009a: 79) in Lewis, Jones and Barker (2012:657) posits that given the changing ways in which languages function today, that is, movement of languages from diglossic to transglossic arrangements, there is no reason for complete compartmentalization of the languages. In the same vein, Gort and Pontier (2012:4) suggest that concurrent use of languages as a pedagogic

resource can support student learning and social interactions that promote inclusion. The authors also believe that, this line of research illustrates how bilingual hence sign bilingual pedagogies can support linguistic educational, affective and social cultural functions. These are the functions that are inherent in both sign bilingual and inclusive education philosophies. In effect, concurrent use of sign and oral languages necessitates metalinguistic awareness and functional use of language (Ausbrooks, 2014:1).

Considering the fore going, Lopez (2008:143) earlier on described concurrent language use as a generally untried but innovative use of languages in the business of teaching and learning. Consequently, Jacobson (1990:7) developed what he termed the New Concurrent Approach (NCA) in which he proposed that there should be no intra-sentential code-switching, the alternation should not be random but purposeful, the use of both languages should be balanced and the child should not be encouraged to tune out when his/her L2 is being used. In this way, according to Jacobson, concurrent use of languages increases academic learning time, thereby increasing content acquisition and promoting inclusion for all learners. Similarly, Hornberger (2005:607) suggests that bilingual learning is maximised when the learners are allowed to draw from across all their existing language skills in the two languages rather than being constrained and inhibited by monolingual instructional assumptions and practices inherent in language separation.

Clearly, the above analysis shows that concurrent use of languages in a bilingual class is a mirror image of indigenous everyday life in which the two languages are needed many times in connection to one another and not as discretely separate as is often supposed in language separation models (Lopez, 2008:143). In concurrence, Giambo & Szecsi (2015:57) observe that indeed there is research evidence pointing to the fact that, in bilingualism, the two languages 'depend on one another.' In support, Creese and Blackledge (2010:112) premise their argument for concurrent use of languages on the recognition that languages do not fit into clear bounded entities and that all languages (including Sign Language) are needed for meanings to be conveyed and negotiated.

Research by Kenner (2004), Robertson (2006) and Sneddon (2000) in Creese and Blackledge (2010:106) has actually shown that bilingual children do not view their literacies and languages as separate but rather experience them as simultaneous hence concurrent. On these basis, Lembe (2002:85) questions whether keeping languages as if they were pure and separate is not a matter of bowing to dominant political and ideological pressures of both pre – and post-colonial hegemonic power struggles previously suggested by Cummins and Swain (1986:108) in their support for language separation. In response to these contradictory views, Anderson (2008:88) calls for more flexible approaches to pedagogy that respond to bilingual contexts (such as sign bilingual education) that do not fit easily into existing paradigms. Similarly, Hornberger (2005) in Creese and Blackledge (2010:106) noted that the learning of bilingual children is maximized when they are allowed and enabled to concurrently draw from across all the existing language skills instead of being constrained and inhibited from doing so by monolingual and language separation instructional assumptions and practices.

3.7 METHODS OF PRACTISING SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION

Various methods exist for concurrent language use in general bilingualism which can be adopted for facilitating sign bilingual education as a strategy for inclusion. These methods derive from the aforesaid theories, models and orthopedagogical approaches. Petitto et al. (2001) cited in Davidson Lillo-Martin and Pichler (2013:239) suggest that deaf bilinguals are very similar to their hearing counterparts. This is despite that sign bilingualism for the deaf is much fluid, richer and complex (Garcia & Cole, 2014:103). The hearing bilingualism methods that could be adopted for sign bilingual education practice include code-switching, translanguaging, interpretation, translation and transcription. These methods are meant to promote concurrent language use. The use of these methods by teachers of the deaf in mainstream schools should be carefully planned and must be pedagogically and linguistically sound, culturally relevant and socially responsive (Riegelhaupt, 2000:213); Fennema-Bloom, 2010:34). This suggests that issues related to language distribution in sign bilingual education

should be at the heart of any substantive discussion of these methods in terms of which language to use, when and in what manner (Garate, 2012:3).

These methods, according to Swanwick (2016b:1), provide a description of creative ways that sign bilingual education teachers use to blend or alternate sign and spoken languages to provide lexical, semantic and conceptual support for deaf learners in inclusive classes. But because of the complex and dynamic languaging of the Deaf, it is clear that separating the languages in this manner is unnatural and restrictive (Garcia & Cole, 2014:106-107). Thus in so doing teachers must consider the complex language practices of all children in the inclusive classroom. First the method of code switching is examined with regards to its use in sign bilingual education as a strategy for inclusion of deaf children in mainstream schools.

3.7.1 Code –Switching in Sign Bilingual Education

Code switching entails the act of navigating from one language to another during a discourse or conversational engagement. In this context, code-switching is changing between oral and sign language. Wei (2011:374) sees code switching not only as simply a combination and mixture of two languages but creative strategies by the language user. It is thus a strategy of facilitating learning and inclusion by linking prior linguistic knowledge with language and content knowledge targeted for acquisition while helping teachers to more actively construct communicative learning events by sustaining and increasing classroom participation through the use of two languages (Fennema-Bloom, 2010:34). By definition, code-switching which is also known as code-mixing, code-shifting or code-blending in deaf literature, is the alternation of two languages within a single discourse, sentence or constituent in creative ways (Hauser, 2000:44; Yow & Patricia, 2013:1; Jamshidi & Navehebrahim, 2013:186; Edvinsson, 2015:3).

In distinguishing between code-switching and code-mixing, Garcia (2011:50) sees code-switching as the bilingual's ability to select the language in response to external cues and according to the linguistic system and code-mixing as the act of combining elements from each language because the user does not know how to differentiate between them.

Consequently, Gumperz (1982) in Garcia (2011:49) defines code-switching as the juxtaposition within the same speech exchange of passages of speech belonging to two different grammatical systems or sub-systems. Garate (2012:5) insinuates that code-switching in sign bilingual education can be used to support developing bilinguals by linking signs to printed information, objects, concepts and definition. It is thus not simply a combination and mixture of two languages but a set of creative strategies of the concurrent use of languages (Wei, 2011:374). Fennema-Bloom (2010:34) further explains that code-switching in inclusive classes may include student generated reformations of facilitating comprehension, teacher generated reformations in the act of facilitating comprehension, established use of class or subject-based technology or institutional bridging where material is presented in say, Sign Language and defined or expanded in the oral language in use or vice-versa.

In essence, code-switching occurs at both intra-sentential and inter-sentential levels (Edvinsson, 2015:6; Garcia, 2011:49-50). When code-switching occurs at the intra-sentential level, it is called code-mixing, a term which some authors (Van den Bogaerde & Baker 2006; Yow & Patricia, 2013:1; Jamshidi & Navehebrahim, 2013:186) use interchangeably with code-switching. However, Jacobson's (1990) New Concurrent Approach and Falter's (1996) Cueing Response System for code-switching both recommend inter-sentential code-switching (Fennema-Bloom, 2010:33). This revelation is corroborated through an earlier study reported by Riegelhaupt (2000:212) which found out that only 22% of the participants alternated language at the intra-sentential level. However, the real key to effective use of code-switching is careful planning in advance (Coye, Hood & Marsch, 2010:16). Riegelhaupt (2000:208) emphasizes that a code-switching cannot just take place anyway in a sentence but at appropriate places. The author further notes that code-switching differs from the kind of language mixing found in early simultaneous and sequential bilingual acquisition which may at times be random.

Literature is limited yet mixed with regards the use of code-switching in sign bilingual education. According to Hauser (2000:43), code-switching between sign and oral language is

qualitatively different from that between oral languages alone. Results of a study by Emmorey et al. (2005:665) revealed that deaf children in sign bilingual environments rarely code-switch, that is stop talking and switch to signing and vice-versa. Rather than producing code-switches, deaf children produce code-blends in which signs are simultaneously produced with words 95% of the time on average (Emmorey et al., 2005:666). Bogaerde and Baker (2006:3) term this code-blending or congruent lexicalization. According to Menendez (2010) in Garcia and Cole (2014:107), this kind of language mixing is a valuable tool for facilitating sign bilingual development. These researchers, however, lament that little attention has been paid to code-switching by deaf children in hearing environments. Contrary to the foregoing, Davidson, Lillo-Martin & Pichler (2013:239) believe that deaf children also show typical bilingual effects including code-switching of different types although they admit that little is known of this practice. Hauser (2000:70) concluded that it is possible to code-switch between a sign and oral language since even the functions of code-switching are universal across languages. In their study Emmorey et al. (2005:172) also concluded that, while deaf children rarely code-switch, ASL signs occasionally intrude when bimodal-bilinguals communicate with non-signers, suggesting that the deaf do code-switch between sign and oral languages.

Previous research has claimed that code-switching even between oral languages has been perceived as an impure linguistic behaviour which invokes feelings of guilt and shame (Butzkamm, 2003:29). These feelings of guilt and shame could possibly arise from the view that code-switching is rooted in confusion and tension about it being perceived as either productive or as being a source of embarrassment (King & Chetty, 2014:41). Ferguson (2003) in Fennema-Bloom (2010:27) explains that some literature on bilingual education in general is openly hostile to and often discourages use of code-switching. In a study Shin (2005:18) described attitudes towards code-switching as negative but concluded that it is a pragmatic coping tactic in a learning event or social context. Although code-switching as a prevalent pragmatic practice is rarely institutionally endorsed or pedagogically underpinned (Cress & Blackledge, 2010:105), it has been used throughout the world to scaffold the teaching of additional languages (Garcia & Lin, 2016:1). Cress and Blackledge (2010:105) confirmed that code-switching is a pragmatic response to a classroom context with diverse language needs

although Reed and Bapoo (2002:147) earlier on insisted that it is dilemma-filled. Thus code-switching is often considered problematic but only when it is seen as somewhat an informal register such that bilingual teachers may avoid it in situations that require formality (Fennema-Bloom, 2010:212).

While Cook (2001:412) warns that code-switching might not be effective in a linguistically diverse classroom, it helps both teachers and students gain confidence in the use of both languages. This is because it creates links between the two languages (Macaro & Jang Ho, 2013:718) and acts as a scaffold for learning (Edvinsson, 2015:17; Fennema-Bloom, 2010:33). Similarly, Garcia (2007) in Creese and Blackledge (2010:106) argued that languages are not hermetically sealed units after all. In effect, current research has shown that code-switching aids instead of hinders learning (Edvinsson, 2015:5) and that it benefits second language acquisition and learning as only a minority of commentators today discuss its negative effects (Macaro & Jang Ho, 2013:717).

The code-switching theory proposed by Peal and Lambert (1962) postulates that switching between languages provides the bilingual individual with a higher degree of mental flexibility and concept formation (Kushalnagar et al, 2010:263). Thus, code-switching in this context functions to increase comprehension and to mark a change in context (Riegelhaupt, 2000:209) and therefore to facilitate social interaction in the classroom. This stands true for both deaf and hearing bilinguals as Kushalnagar et al (2010:265) established that deaf children who code-switched between ASL and written English displayed advantages associated with bilingualism for hearing bilinguals. After all, code-switching is part of our everyday lives and is a cross cultural phenomenon which is common in bi-cultural communities worldwide (Cook 2001 in Edvinsson, 2015:6). Fennema-Bloom (2010:28) concurs that code-switching in the form of code-scaffolding is a natural part of any form of bilingual instruction which is no different from monolingual scaffolding techniques that are used to facilitate comprehension, hence improve social inclusivity. In effect, language scaffolding in sign bilingual education is used to support the children in the early stages of using the second language (oral language) in a mainstream classroom (Lewis et al., 2012:661).

Hauser (2000:45) earlier noted that code-switching is the principal behaviour through which any form of bilingualism is expressed while Davidson et al. (2013:239) agree that the bilingualism effects of code-switching in inclusive classes are common and natural. In further justifying code-switching in inclusive classes, Martin (2005:89) argued that it offers classroom participation, creative, pragmatic and safe practices between the dominant (oral) language and the language in which the deaf children, for instance, have greater access to. In these regards, the pedagogic potentials of code-switching include increased inclusion, participation and understanding of pupils in the learning processes (Creese & Blackledge, 2010:106). The authors also add that code-switching helps pupils in the development of less formal relationships, conveyance of ideas and accomplishment of lessons. As such educators today are increasingly exploring code-switching as a pedagogical strategy for increasing language and content acquisition and for promoting cognitive and social development (Riegelhaupt, 2000:210). Fennema-Bloom (2010:27) also confirms that code-switching is indeed a pedagogic tool used by teachers to make content comprehensible. In another study Kushalnager et al. (2010:264) observed that balanced bilinguals who code-switched between sign and oral language out-performed unbalanced deaf bilinguals in inclusive settings. On these bases, bimodal-bilingualism or sign bilingualism offers a unique vantage point from which to study code mixing or code-switching in deaf children (Emmorey et al., 2005:663).

The foregoing analysis clearly suggests that the criticisms of code-switching are influenced by the hostile historic beliefs in hegemonic power struggles that often characterize dominant versus minority languages and cultures. Shin (2005:46), for instance, believes that code-switching as a linguistic strategy has been influenced by the socio-economic dominance of English over minority languages such as Sign Language. According to Fennema-Bloom (2010:34), research on the social implications of classroom code-switching (Merritt et al., 1992; Arthur, 1996; Camilleri, 1996; Lin, 1996) cite code-switching as a hegemonic power play between the dominant languages (oral languages) and the lesser valued languages (Sign Languages). There are also perceptions that code-switching could be used as a tool of power to distribute orders and control the actions among the minority groups (Edvinsson, 2015:8).

Interestingly, there is no research whatsoever that indicates any negative effects of code-switching on linguistic and cognitive development, academic achievement and let alone on social inclusion (Riegelhaupt, 2000:207). The author explicates that even early studies on code-switching have concluded that it is not true that bilingualism and code-switching in general impede students' abilities to learn and interact. Kushalnagar et al. (2010:264) reports that a study of 15 sign bilingual users by Emmorey, Luk, Pyers and Bailystok (2008) showed no significant difference from 15 monolingual users of code-switching. In another study, Martinez (2007) examined the complicated multilingual process of code-switching by Filipino Sign Language interpreters, the interpretations revealed consistent and on-going code-switching for both monolingual and bilingual users, suggesting the validity of code-switching (Roy & Metzger, 2014:164). Thus asking sign bilingual education teachers not to use code-switching is virtually taking away a scaffold that would help facilitate instruction, hence inclusivity of deaf children in the mainstream classroom (Fennema-Bloom, 2010:33). Related to code-switching is translanguaging.

3.7.2 Translanguaging in Sign Bilingual Education

According to Garcia and Lin (2016:1), while different epistemologically, translanguaging is linked to the study of code-switching in education in that it also disrupts the traditional isolation of languages in teaching and learning environments. Like code-switching, translanguaging is a common, natural and distinctive feature of bilingual behaviour that reflects on the flexibility and versatility of bilinguals (Gort & Pontier 2012:4). By definition translanguaging is a pedagogical practice which switches the language mode in bilingual classrooms (Garcia, 2011:45), for example, conversing in Sign Language and writing in English. The author believes that translanguaging goes beyond code-switching to constitute multiple discursive practices in which bilinguals engage in order to make sense of their bilingual worlds. According to Creese and Blackledge (2011:109), in translanguaging the teacher uses languages in a pedagogic context to make meaning, transmit information and perform identities using the linguistic signs available. In this context, translanguaging is the process of making meaning, shaping experiences, gaining understanding and knowledge through the use

of two languages (Baker, 2011:288). Earlier on, Garcia (2007:13), in her work in New York, concluded in favour of the term translanguageing instead of code-switching to describe the usual and normal practice of any form of bilingualism (including sign bilingualism) without diglossic functional separation. Separating languages of the bilinguals is unnatural and as such translanguageing neutralizes the power dimensions between languages and works against the linguistic hierarchy of a spoken and a signed language, for instance (Garcia & Cole, 2014:106). Otheguy, Garcia and Reid (2015:283) concur that translanguageing helps disrupt the socially constructed language hierarchies that are responsible for the suppression of the languages of many minoritised peoples.

Translanguageing is thus a complex languageing practice that transgresses the reified or linear categories of languages and which bilinguals including the deaf use to engage in complex and discursive activities (Garcia & Cole, 2014:107). Gort and Pontier (2012:4) define translanguageing as the act of accessing different linguistic features or modes of what are called autonomous languages in order to maximize communicative potential. The term has been increasingly used in scholarly literature since it was introduced by Len Williams in 1994 to refer to the complex and fluid language practices of bilinguals, as well as the pedagogical approaches that leverage those practices (Garcia & Lin, 2016:1). For Lewis and Baker (2012:643), translanguageing refers to using one language to reinforce the other in order to increase communication and social interaction. In the classroom, it tries to draw on all the linguistic resources of the child to maximise understanding and achievement (Lewis, Jones & Barker, 2012: 655). As a term taken from general bilingual literature, translanguageing is used to describe ways in which learners and teachers alternate and blend languages using repertoires available to them (Garate, 2012:4) and is recognized as having value in sign bilingual (inclusive) classes (Swanwick, 2016:3).

According to Edvinsson (2015:6), the use of translanguageing might enhance inclusion and participation. Although translanguageing and code-switching are related, the two differ in some fundamental ways. For instance, while code-switching is based on the monoglossic view that sees bilinguals as having two separate linguistic systems, translanguageing posits the

linguistic behaviours of bilinguals as being always heteroglossic and responding to one integrated linguistic system (Garcia & Lin, 2016:3). Translanguaging refers to a specific shift from one language to another for specific reason (Coyle et al., 2010:16) and is pragmatic while code-switching can be used for particular types of activities which are planned in advance (Edvinsson, 2015:6). In other words, translanguaging is an approach to bilingualism that is not centred in languages (as is usually the case with code-switching) but on the practices that are readily available for bilinguals to facilitate, social interaction, communication and inclusion (Garcia, 2010:44; Garcia & Cole, 2014:108).

From a linguistic theory perspective, translanguaging is explicitly and epistemologically different from code-switching, since it involves the deployment of the person's full linguistic repertoire without regard for watchful adherence to the socially and politically defined, named and usually national state languages (Otheguy et al., 2015:305; Garcia & Lin, 2016:2) such as English, Ndebele, Shona and Sign Language). Thus, translanguaging provides a smoother conceptual path to the goal of protecting minoritised communities, their languages and their learners and schools (Otheguy et al., 2015:283). This allows both deaf and hearing children to select appropriate features of their linguistic repertoires to meet the communicative exigencies of a learning or social situation at hand (Garcia & Lin, 2016:9). In this context, Lewis et al. (2012:657) describe translanguaging as the use of one language to reinforce the other. Edvinsson (2015:7) also concurs that in this way translanguaging differs from code-switching as it refers to the process in which bilingual students make sense and perform bilingually in the myriad ways of mainstream classrooms instead of merely switching between language modalities.

In terms of practice, translanguaging involves the presentation of the content in one language and expecting the product in another language (Baker, 2011:289; Garate, 2012:4). In sign bilingual education for example, the teacher may deliver the main content in Sign Language and the students complete the assignment in written oral language (Swanwick, 2016b:4). The other example of translanguaging in sign bilingual education is when children read content or carryout an online research in oral (written) language and then discuss the content in Sign

Language or submit a signed video-taped assignment based on the oral (written) content (Garate, 2012:4; Lewis et al., 2012:660). Garcia (2011:44) also argues that in most settings in the world, it is normal and unmarked to translanguage in both intra-and inter-cultural social interactions. The author sees translanguaging as a normal mode of communication that characterizes communities throughout the world. For this reason, Wei (2011:1234) theorised the concept of a translanguaging space where the interaction of multilingual individuals breaks down the artificial dichotomies between the macro and the micro, the societal and the individual and the social and the psycho in studies of bilingualism. This, according to the author, allows for integration of social spaces that define inclusion of diverse peoples.

The advantages of translanguaging, according to Baker (2001) cited in Garcia and Lin (2016:2), are that it promotes deeper and fuller understanding of subject matter, it helps in developing L₂, it facilitates home-school links and it promotes inclusion of users of the minority languages such as the deaf users of Sign Language. Edvinsson (2015:6) concurs that it leads to a dynamic form of bilingualism and that it can be used to gain a deeper understanding of the learning process, since it can be used as a scaffold to express and convey ideas and abstract concepts more easily. Lewis, Jones and Baker (2013:1), in a study of language arrangements in Welsh, bilingual classrooms concluded that the dynamic and functionally integrated manner in which the languages are used in translanguaging mediates mental processes in understanding and learning, of which for the deaf children, would lead to inclusion into the hearing environment. This is because translanguaging is a form of scaffolding and is a viable teaching tool since it facilitates communication, allows the teacher to negotiate meaning between the student and text (Fennema-Bloom, 2010:32-33). In this way, translanguaging enables teachers to model authentic bilingual behaviours and to create spaces where both languages are treated as resources for learning (Wei, 2011:1234; Gort & Pontier, 2012:4) and inclusivity. This is in line with the sign bilingual tenet which posits for equality of treatment of sign and oral language (Swanwick, 2016:2; Tang, 2016:3; Mayer & Leigh, 2010:176).

For the children (whether deaf or hearing), their learning and inclusion is maximized through translanguaging since they are not inhibited and constrained by monolingual instructional

assumptions and practices (Hornberger, 2005:607). This is when the two languages (sign and oral) work with each other in creative ways to enable the children make sense of subject content and to achieve effective educational development and social interaction (Lewis et al., 2012:662). Creese and Blackledge (2011:109) insinuate that translanguaging has pedagogic value where deaf children, for example, benefit from the flexibility of language use according to the task at hand and the demands of the learning or social context. To demonstrate the efficacy of translanguaging between sign and oral languages, Swanwick (2016b:3) presents three case study excerpts which illustrate the flexibility with which sign bilingual teachers use sign and spoken language and the complex and nuanced decisions about language use in the mainstream classrooms to support learning, participation and social interaction. Accordingly, translanguaging provides for flexible access to sign bilingualism to enable links between the social cultural community and linguistic domains, hence inclusion of deaf children in the mainstream (Creese & Blackledge, 2010:112). Unfortunately, while many deaf children translanguage as a flexible way of accessing the curriculum and gaining inclusivity in mainstream sign bilingual settings, language policies have remained static (Swanwick et al., 2016:292). This flexibility and access which translanguaging enables can also be achieved through Sign Language interpretation although literature is replete with concerns pertaining to lack of acceptable standards in its use.

3.7.3 Sign Language Interpretation

Roy and Metzger (2014:162) explain that the act of interpreting is a search for meaning in what is uttered or signed in a context, including the linguistic, social and cultural knowledge that participants use to make sense of what they hear or see. In the context of sign bilingual education as a strategy for inclusion, Sign Language interpretation is an act of bridging gaps created by linguistic isolation of deaf children which serves as a mode of facilitating deaf children's inclusion and learning in their primary language which is Sign Language (Namukoa, 2012:55). Sign Language interpretation is, therefore, the transmission of messages in Sign Language through to oral language and from the oral language into the corresponding natural Sign Language (Teklemariam, 2016:103). Thus the primary roles of Sign Language interpreter

in sign bilingual education classrooms include translating teacher's speech, voicing students' Sign Language, mediating communication among the teacher, the deaf and the hearing students as well as monitoring overall classroom behaviour for especially the deaf students (Cawthon, 2001:212; Teklemariam, 2016:109; Skeneman, 2016:1).

Effectively, Sign Language interpretation in sign bilingual education classrooms is used to supplement teacher speech and facilitate deaf students' participation in inclusive classroom discourse. This, according to Roy and Metzger (2014:165), is achieved through elucidation and disambiguation of interpreted messages. Teklemariam (2016:104) explains that Sign Language interpretation is a means of creating access to communication between signing and hearing children taught by hearing teachers in mainstream classroom to move towards inclusion. In Sweden for example, Sign Language interpretation is framed as a communicative resource and is linked to the development of a linguistic repertoire that facilitates social interaction and inclusion of deaf children in speech environments (Hult & Compton, 2012:611). Reagan (2010:171), therefore, believes that the most important example of acquisition planning for Sign bilingual education is in the preparation of Sign Language interpreters. The new syllabi in Sweden put emphasis on how Sign Language interpretation is used, the interpreter's role and obligation and the effect of Sign Language interpretation for the deaf students (Skolverket, 2010:30-32).

In the USA, Sign Language interpretation is framed in terms of related services including the provision of qualified interpreters to support the deaf student's linguistic needs in inclusive classrooms (Hult & Compton, 2012:611-612). Thus Sign Language interpretation in the USA is seen as a compensatory tool for accessing the dominant hearing classroom environments (Reagan, 2010:161) in order to improve inclusion. Both the Education of All Handicapped Children Act (IDEA) (2004) and the Americans with Disabilities Act (1990) explicitly provide that students who are deaf and use Sign Language as their primary mode of communication would have access to Sign Language interpreting in educational settings (Marschark, Sapere, Convertino and Seewagen, 2005:38). The United Nations (2006) Convention on the Rights of Persons with Disabilities Article 24 also promulgates that member states should take

appropriate action to enable access to free Sign Language interpretation for deaf children in inclusive settings (Cawthon, 2001:221; Teklemariam, 2016:105). Other international conventions such as the Charter on Fundamental Rights, articles 21 and 22 and the European Convention on Human Rights also protect Deaf people's rights to access via an interpreter (Stone, 2010:45).

Sign Language interpretation allows deaf children to interact with the hearing peers and to acquire knowledge transmitted by the hearing teacher via the interpreter (Dias et al., 2014:496). Wadensjo (1998) in Roy and Metzger (2014:160) considers Sign Language interpreters as negotiators of meanings, implying that they are also facilitators of inclusion of the deaf children. In other words, Sign Language interpretation facilitates the embedding of the practice of educational inclusion of deaf children in mainstream sign bilingual settings (Thoutenhoofel, 2005:241). In effect, knowledgeability and skill of the Sign Language interpreters make sign bilingual education programmes for the deaf more accessible, participatory, responsive to the needs of deaf learners and inclusive (Teklemariam, 2016:111).

The Zimbabwe Sign Language Bill also frames Sign Language interpretation as a free public service in educational settings and provides ethical guidelines in these regards (Government of Zimbabwe, 2015:5-6). Musengi and Chireshe (2012:115) note that while Sign Language interpretation is likely to foster a measure of participation and ultimately inclusion, there is an admitted fact that the interpretation itself is likely to be flawed because of inadequate Sign Language knowledge on the part of the specialist teachers who do not have native-like competency in the language. It is quite clear from literature that successful Sign Language interpretation depends on the qualification (Namukoa, 2012:55; BDA, 2015:21), training (Wit & Sluis, 2014:64, Sheneman, 2016:5), professional credentials (Sheneman, 2016:1; Boeri, 2015:39) and experience (Teklemariam, 2016:111) of the interpreter. For Namukoa (2012:55), since deaf students and their hearing teachers in sign bilingual education inclusive settings depend on Sign Language interpreters for their communication, the interpreters should be highly skilled, qualified and professional. Thus for sign language interpretation to be effective, it has to be of high quality (Wit & Sluis, 2014:66). The Sign Language interpreter

should, therefore, be a trained professional who is bound by a code of professional ethics (NBT, 2014:1-2; Boeri, 2015:36). In the USA, this Code of Ethics was established in 1965 and outlines the principles of confidentiality, impartiality, faithfulness and excellence (Boeri, 2015:36).

According to Teklemariam (2016:105), Sign Language interpretation service is impossible without the efficient skills of an appropriately qualified interpreter since it needs to be a complete process of conveying accurate thoughts and ideas produced in Sign Language to spoken language and vice-versa. The interpreter should be able to present an accurate signed translation in synchrony with the teacher's spoken and written messages thereby fully capture both the content and process of the lesson for the benefit of the deaf learners (Glaser & Van Pletzen, 2012:7). This can only be possible when the Sign Language interpreter possesses bilingual knowledge and sensibility of Deaf and hearing cultures alike (Thoutenhoofd, 2005; 245). Additionally, the Sign Language interpreter should be competent enough in linguistic, cognitive and cultural background of deaf students, the curriculum knowledge of the various school subjects, the pedagogy and the sign and written languages used in the curriculum. The Sign Language interpreter thus requires more than basic knowledge of sign and oral languaging and meanwhile should be able to work as a member of the educational team in the school (Teklemariam, 2016:109).

3.7.3.1 Critiquing the Use of Sign Language Interpretation

Contrary to the foregoing, it is, however, common that many of the interpreters are teachers of the deaf who never underwent professional Sign Language interpreter training (Roy & Metzger, 2014:168). This is the practice in Zimbabwe where the specialist teachers use the English syntax in their interpretation (Musengi & Chireshe, 2012: 111 & 113). However, although in their case study, the researchers report that all the deaf pupils said that they benefitted from the interpretation, they also argue that this kind of interpretation is not real Sign Language interpretation. Additionally, even in the USA many interpreters who are

employed in educational settings are unqualified or under-qualified (Marschark et al., 2005:39).

Marschark et al. (2005:39) note that the implicit assumption that Sign Language interpreting automatically provides deaf students with classroom access comparable to that of hearing classmates has either not been fully explored, is supported by limited evidence or is not totally valid. Stone (2010:45) also adds that it is a fake assumption to assume that all deaf persons need the services of an interpreter in order to access any mainstream environment. For instance, Kusters et al. (2015:16) claim that the presence of the Sign Language interpreter makes deaf students feel isolated and different from their peers. Marschark et al. (2005:39) also argue that just the provision of educational interpreting for deaf students is not as straightforward as it might seem arguing that even experienced interpreters do not always achieve what they intended. As a result, Teklemariam (2016:104) queries the effectiveness of communication for the deaf students when interpretation instead of direct Sign Language is used. In these regards, the majority of deaf students do not receive equitable educational experience compared to their hearing peers often due to ineffective linguistic access provided through interpreting services (Russell & Wiston, 2014:102). Schick, Williams and Kupermintz (2005) cited by Teklemariam had earlier observed that even with a highly qualified Sign Language interpreter, at times full access to the content and social life by deaf students in a hearing mainstream classroom is a challenge.

Research has also established many inconsistencies in how Sign Language interpretation has been practiced leading to barriers and further challenges. A study by Cokely (1985) reported by Roy and Metzger (2014:160) identified a taxonomy of interpreter miscues that included omissions, substitutions, additions, intrusions and anomalies. With regards to omissions, Napier (2001) notes that some of them are intentional as they are strategically designed to support the quality of target productions (Roy & Metzger, 2014:163). Another study by Schick et al. (2005) which examined the quality of Sign Language interpreter services and their impact on education for deaf learners in the USA confirmed that 60% of the interpreters had inadequate skills to provide full information access suggesting that the learners did not have

reasonable access to the curriculum and to social interaction as a result (Marschark et al., 2005:39; Namukoa, 2012:55-56). These results were replicated by Teklemariam's (2016:108) study in Ethiopia which concluded that the Sign Language interpreters were not appropriately and professionally equipped and were unable to interpret highly technical concepts related to subject areas since they had serious difficulties interpreting subjects they were not trained for.

In yet another study in the USA a Sign Language interpreter who was also a teacher of the deaf failed to create discourse markers and other cohesive devices such as repetition and pronominal use making the tracking of topic changes and shifts difficult if not impossible for deaf learners (Roy & Metzger, 2014:168). Sheneman (2016:6) also notices anomalies and inappropriate transactions with regards to social and cultural norms which call for cultural mediation when Sign Language interpretation is used in mainstream sign bilingual settings. However, when well-managed, Sign Language interpretation could support communication needs and curriculum delivery for deaf learners in inclusive settings (Namukoa, 2012:55). Teklemarian (2016:111) also concurs that provision of proficient Sign Language interpreters who can manage the range of complex communication situations is crucial for the realization of the inclusion of deaf learners into mainstream schools.

From the foregoing, the main challenges for using Sign Language interpretation in sign bilingual education settings for the inclusion of deaf children are not implicit in interpretation itself but have to do with its practice in terms of modality variation and structural differences (Thoutenhoofd, 2005:242-243) in sign and oral languages to keep pace with lesson interchanges (Teklemariam, 2016) and its technical and professional conduct. This is perhaps because Sign language interpretation is a complex process situated within a group of learners that harbour their own multilingual, bilingual and language contact phenomena within a social or educational environment beset with language attitudes and abilities (Roy & Metzger, 2014:159).

Further, the interaction of inclusion and sign language interpretation is also situated within emotive discourses of hearing versus Deaf culture (Thoutenhoofd, 2005:245). In these regards, Sheneman (2016:6) concurs with Cokely (1985) in Roy and Metzger (2014:160) that some anomalies and inappropriate interpretations are with regards to variances in social and cultural norms since interpretation is connected to these cultural discourses. This has prompted Sheneman (2016:1) to insinuate advantages of using deaf interpreters since they possess extra linguistic knowledge based on their deaf experiences that influence the interpretation process. Transliteration a type of interpretation, although not popular because of its orientation towards oralism, is another method that can be used to facilitate inclusion of deaf children in mainstream sign bilingual settings.

3.7.4 Transliteration in Sign Bilingual Education

At times sign bilingual education is practiced using acceptable but artificial signed systems which nevertheless are more oriented towards oral language word order. When Sign Language interpretation is conducted such that it follows oral language word order it becomes transliteration. Transliteration thus refers to the transmission of spoken language into a word-by-word sign system that is English-based sign or verbatim presentation (Teklemariam, 2016:103); Marschark et al., 2005:39). Roy and Metzger (2014:163) reiterate that transliteration is a more literal rendition of Sign Language being a source language to text. In a study, Teklemariam (2016:114) noticed that most of the deaf students preferred free interpretation but concluded that most of the interpretation conducted in sign bilingual classes is in effect transliteration.

Meanwhile, Marscharck et al. (2005:40) postulate that while free interpretation could better serve Sign Language oriented deaf learners; transliteration could better serve those who sign using English word order. Thoutenhoofd (2005:240) confirm that transliteration concerns a more English grammar derived form of signing which also includes finger spelled lexical terms to facilitate the acquisition of subject-specific English vocabulary. However, in their study, Marschark et al. (2005:40) observed no reciprocal advantage of transliteration for students

who are oriented toward English-like signing but noted that scores appeared higher for freely interpreted presentations regardless of students' language orientation. This outcome suggests the need for interpreters to be able to code-switch between free interpretation and transliteration (Napier & Baker 2004:230). It also endorses the superiority free Sign Language interpretation over transliteration.

3.7.5 Sign Language Translation in Sign Bilingual Education

Translation as a method of facilitating communication, social interaction and inclusion in sign bilingual education is closely related to interpretation yet the two have salient differences. The Professional Issues Committee (2011:5) points out that translation differs from interpretation in that on one hand, translation involves taking a written text in a source language such as Sign Language and providing a written text in the target language. By definition, translation means the written expression in any of the official languages provided for in terms of Section 6(1) of the Constitution of Zimbabwe of messages expressed in Zimbabwe Sign Language (DZT, 2015:4). It also entails the signed expression in Zimbabwe Sign Language of words written in any of the official languages. Accordingly, translation is integrated into the language learning practice along with generally used activities (Dagiliene, 2012:124) to enable learners understand content in the stronger language (Lewis, Jones & Baker, 2012:659) and enhance inclusion of deaf children into mainstream schools (Thoutenhoofd, 2005:240). Lewis et al. (2012:695) add that predominantly, translation is often utilized in combination with translanguaging.

Like in translanguaging and interpretation sign bilingual education methods, dynamic equivalence in meaning between sign and oral languages in translation is also leveraged on meaningful relationship between sign and oral language (Soang, 2016:248). As such, translation is not automatic conversion of words or signs but rather should always provide the most appropriate equivalence to convey accurate meaning (Professional Issues Committee, 2011:8). In sign bilingual classes, translation can, therefore, be used so that when the weaker language (that is, oral language for the deaf) is used for content transmission, it

is accurately translated to Sign Language which is the stronger language (Lewis et al., 2012:659). This enables the children to understand content and interact more effectively with hearing peers in inclusive classes. In this regard, Xu (2016:1) implores that Sign Language translation is an important area of research that could help bridge the communication gap between audio (oral) speakers and deaf people. The author reiterates that translation is the most natural and fluent method of communicating meaning between deaf and hearing learners as compared to writing or typing which could hinder conversation. On a larger scale, translation plays a very important role of enabling inclusion of minority language users into an increasingly globalized and multi-lingual society (Leornadi, 2010:17).

3.7.5.1 Critiquing the Use of Sign Language Translation

However, there are some reservations about the use of translation in general. Dagilience (2012:124) points out that until recently, translation has always been at the core of controversies on whether it can be an effective tool for language teaching and learning. According to the author, even today translation is often regarded as a mechanical linguistic transfer of meaning from one language to another as time consuming, boring and irrelevant. Meanwhile Lewis et al. (2012:659) argue that unlike translanguaging, for instance, which subscribes to concurrent use of languages, translation is more about language separation, scaffolding and working mainly with the stronger language. Despite such negative perceptions, recent research (Xu, 2016; Soang, 2016:247) has demonstrated that translation is conducive to learning, induces insightful responses to context and hence promotes inclusion even of deaf learners.

One immediate challenge of minority language translation projects in general, according to Penner (2009:3), is lack of awareness. The author elaborates that this is the case with many sign languages although in countries like UK, US and Japan Deaf people have dramatically increased their linguistic and cultural awareness. Concerning this revelation, Soang (2016:248) confirms that in any case, deaf students face translation problems not only linguistically but also culturally. This is because Sign Language translation is difficult and

complex particularly with regards to the sociolinguistic situation of the deaf community rather than with regards to the use of Sign Language per se and for that matter is only a recent phenomenon (Penner, 2009:1 & 13).

These challenges can be successfully dealt with when the sign language translators are appropriately educated, credentialed, experienced and culturally oriented. For example, the best results of translation are obtained when the Sign Language translator's levels of qualification, specialization, standard of general education and relevant experience are appropriate, the translator is ideally certified and/or credentialed and his/her mother tongue is the target language (Professional Issues Committee, 2011:7). The translator must, therefore, have excellent knowledge of at least two languages although they often work in one direction, that is, from the acquired to the native language (Professional Issues Committee, 2011:4). He/She must also possess sound knowledge of the source language, above average writing ability and reasonable familiarity with the subject matter. In addition to these qualities, Penner (2009:4) recommends deaf leadership in translation projects and training of deaf people as Sign Language translators and translation consultants.

3.7.5.2 ICT Based Sign Language Translation

A new development has also emerged in which information and computer technologies (ICT) are used for Sign Language translation. During the last two decades, there have been important technological advances to support the implementation of an automatic speech to Sign Language translation (San-Segundo, 2007:1). Consequently, in more recent years, Sign Language has been widely studied based on new technologies, that is, multiple sensors such as data glove, web camera and stereo camera to enable bilingualism (Chai, Li, Lin, Xu, Tang, Chen & Zhou, 2012:2). Thus spoken language translation and Sign Language generation technologies are combined to develop a fully automatic speech to Sign Language translator (San-Segundo, 2007:2). In an experiment, Huang and Huang (2011:1) established that accurate and real-time machine translation of Sign Language has the potential to significantly improve communication between the deaf and those who do not understand Sign Language.

Using the Microsoft Kinect Sensor, the researchers created a system that recognizes American Sign Language for instance. However, they discovered that the Kinect is only designed to capture large body movements and cannot detect hand shapes and finger movements making it difficult to interpret certain signs such as letters which involve small and subtle finger motions. From this analysis, they concluded that a more appropriate segmentation approach would be necessary to achieve realistic accuracy for a real-time Sign Language translator.

In a related experiment in China, Xu (2016:6) demonstrated that, given a limited number of gestures and a few algorithmic optimisations, a real-time continuous gesture recognition system can be implemented on a mobile device with reasonable accuracy. From the results of the experiment, the researcher concluded that a Sign Language translator must be able to recognize continuous sign gestures in real-time of which can be made much more accessible if the procedure can be carried out on a mobile device. Similarly, in Spain, a translation system made up of a speech recognisor, a natural language translator and a 3D avator animation module (San-Segundo et al., 2007:1). The speech recognisor is used for decoding the spoken utterance into a word sequence, the natural language translator converts word sequence to a sequence of signs and the 3D avator plays the sign sequence in video format (Boulares & Jemni, 2012:1). Based on the 3D trajectory matching algorithm, a Sign Language recognition and translation system was built to enable sign bilingualism in inclusive settings. San Segundo et al. (2007:2) earlier noted that the 3D avator system/ trajectory has enough flexibility to represent signs from Sign Language and a visual environment for creating sign animations in a rapid and easy way. In addition, another system which was based on web services, X3D and Android operating systems to build automatic mobile translation from text into Sign Language using virtual signing agent that is, avator technology was developed by Boulares and Jemni (2012:1).

In justifying this type of information technology translation between oral and Sign Language, Huang and Huang (2011:1) argue that it has the potential to significantly improve communication between the deaf and hearing persons. With regards to the Microsoft Kinect sensor for instance, Haung and Haung (2011:5) further report that it has the additional benefit

of providing a platform for people to learn and practice Sign Language. As a result, people who do not know Sign Language can easily access the translation services from even a smart phone in which a word can be translated to sign at the push of a play button resulting visualization of Sign Language animations (Baulares & Jemni, 2012:2). These authors explain that such systems on cell phones can also translate short messages to Sign Language. All these developments are meant to enable more natural communication and interpersonal interactions between deaf and hearing learners and add to the impetus of best practices in sign bilingual education as a strategy for inclusion of deaf children in mainstream schools.

3.8 CHAPTER SUMMARY

This chapter proposed the theoretical framework within which this study could be contextualized. The social model of disability was identified as the main guiding framework for the study. Because of its cultural orientation, sign bilingual education as a strategy for inclusion was also framed within Vygotsky's socio-cultural theory since it reflects on deaf children as Sign Language Peoples in the context of the patrimony of deafness. In addition, because of the bi-linguistic orientation of sign bilingual education, the study was, therefore, further contextualized within Cummins's Linguistic Inter-Dependence Theory. From these theoretical underpinnings, there was need to explicate bilingual models that are relevant to sign bilingual education. Consequently, relevant approaches, methods and techniques were derived from these theories and models and analysed in the context of sign bilingual education as a strategy for inclusion of deaf children. The successive chapter explores the methodology that informed the study.

CHAPTER FOUR

RESEARCH METHODOLOGY, DESIGN AND DATA COLLECTION

4.1 INTRODUCTION

The previous chapter examined the theoretical framework that informs this study on how sign bilingual education can be used as a strategy for inclusion of deaf children in Zimbabwe. In this chapter, the research methodology is presented. Research methodology is the philosophical framework which influences the procedures and process of the entire study (Creswell, 2013:12). The philosophical paradigm and the typology of the research design are also examined. The chapter identifies the population and the sample of the study and explicates the sampling strategies that were employed. The choice and justification of the research instruments that were used are presented and issues of validity or trustworthiness and reliability are explored. The chapter ultimately advances data collection procedures, data analysis methods and ethical considerations that are relevant to this study.

4.2 RESEARCH PHILOSOPHY

According to Mertens (2005:7), a paradigm is a way of looking at the world and is composed of certain philosophical assumptions that guide and direct thinking and action. It can also be conceived as a general organizing framework for theory and research that includes basic assumptions, key issues, and models of quality research and methods of seeking answers (Neuman, 2006:81). Consequently, methodological choice does not have to exist within a philosophical void but should be driven by ontological and epistemological assumptions (Cameron, 2011:99). For these reasons, the current study is premised on pragmatism which is the third type of research philosophy in modern day research after positivism and interpretivism (Everest, 2014:12).

According to Kadlec (2006) in Everest (2014:11), John Dewey who is one of the popular proponents of pragmatism, proclaimed that the critical potential of experience can and must

be tapped if researchers are to maintain effective challenge to the entrenched interests in the study of reality. In this regard, pragmatism assumes that knowledge has an element of instrumentality, that truth is tentative and changing and that reality is investigated with the ultimate goal to improve human life (Everest, 2014:9). Thus, pragmatism was chosen for this study because it values both objective and subjective knowledge, focuses on what works and utilizes diverse approaches while challenging claims by methodological purists that quantitative and qualitative methods are incompatible (Fiorini, Griffiths & Houdmount, 2016:40; Hanson et al., 2005:226). The complimentary advantages of pragmatism, which in essence combine quantitative and qualitative research methods, outweigh the possible disadvantages. Therefore, pragmatism dismisses the false dichotomy between quantitative and qualitative research that is assumed by the methodological purists.

4.2.1 Justification of Pragmatism

In justifying pragmatism, Biesta (2010:114) argues that it helps mixed methods researchers to ask better and more precise questions about the philosophical implications and justifications of their designs. The author says that this is achieved through eradication of the methodological dualism of objectivity/ subjectivity that is advanced by the isolated use of quantitative and qualitative research methods. Green and Hall (2010) in Cameron (2011:102) also believe that pragmatism results in a problem solving, action-oriented inquiry process based on commitment to democratic values and progress. This influenced the current study to employ ethical considerations which enabled the researcher to come up with more valid and reliable data. In addition, by employing this pragmatic rather than a single lens, researchers are enabled to zoom into microscopic detail or to zoom out to indefinite scope (Imran & Yusoff, 2015:390). For this study, a detailed analysis of results was teneble since the researcher was able to follow up issues that were not adequately addressed through the questionnaire. Hanson et al. (2005:226) are actually convinced that pragmatism is the best paradigm for mixed methods research due to its rigorous stance towards addressing research questions. However, pragmatism is not without limitations.

4.2.2 Limitations of Pragmatism

The major limitations of pragmatism include difficulty of mixing methods (Fiorini et al., 2016:40); choosing between methods, knowledgeability of both quantitative and qualitative methods and the complexity of the political nature of reporting and publishing mixed methods research (Cameron, 2011:97-98). The researcher endeavoured to mitigate these challenges through judicious choice of the sequential explanatory design which proved to be systematic, logical and relatively straight forward to implement (Terrell, 2012:262). Systematic regard and attainment of a working knowledge of both quantitative and qualitative approaches (Fiorini et al., 2016:30) were ensured by the researcher before employing the mixed methods approach. The researcher also took note of the careful integration of the quantitative and qualitative results. Creswell et al. (2011:5) propose that this integration can be achieved by first reporting statistical results followed by qualitative or themes that support or refute the quantitative results. This is the strategy that was adopted in this study. In addition, Cameron (2011:106) advises on the necessity of proficiency and efficiency in both quantitative and qualitative research skills and in applying the rules of data integration. Meanwhile, Terrell (2012:275) emphasizes on the need for a working knowledge of both approaches.

4.3 THE RESEARCH PARADIGM

Guided by the philosophy of pragmatism, the researcher opted for the mixed methods research paradigm. Creswell et al. (2011:4) identify pragmatism as the central philosophy in mixed methods paradigm. The authors further observe that mixed methods researchers often make explicit diverse philosophical positions that are referred to as dialectical stances that bridge post-positivist and social constructivist world views and pragmatic and transformative perspectives. Johnson and Onwuegbuzie (2004) also earlier confirmed that mixed methods research is partnered with the philosophical worldview of pragmatism. Cameron (2011:101-102) concurs that pragmatism has a strong association with and has a strong philosophical foothold in mixed methods research. Everest (2014:10), therefore, concludes that

pragmatism has always been discussed in the context of mixed methods research because it lays a strong basis for multi-methodology.

The mixed methods research paradigm is thus the collection and analysis of both quantitative and qualitative data in a single study in which the data are collected sequentially or concurrently and integrated at some stage in the research process (Creswell, Plano Clark, Gutman & Hanson, 2003:212; Tashakkori & Teddie, 2008:22; Imran & Yusoff, 2015:390; Fiorini et al., 2016:37). It is the type of research approach which combines elements of quantitative research and qualitative research for the purposes of breadth and depth of understanding and corroboration (Bleisch et al., 2010:1; Cameron, 2011:96; Fiorini et al., 2016:38) (**See Figure 4.1**). Figure 4.1 demonstrates how, based on the research philosophy of pragmatism, the mixed methods research paradigm utilises both quantitative and qualitative methods to integrate quantitative and qualitative results and therefore to generate more holistic results and more valid, robust and rigorous conclusions. Fiorini et al. (2016:37) further report that the mixed methods movement emerged in opposition to the dichotomization of quantitative and qualitative research methods and as a result of the paradigm wars that had escalated thereof.

The mixed methods research paradigm contains five purposes which are triangulation, complementarity, initiation, development and expansion (Johnson & Onwuegbuzie, 2004:22; Caruth, 2013:113) of which triangulation is the most common. Triangulation of data sources and of methods as well as complementarity were the two purposes which were prominently utilised for this study. Triangulation refers to the combination of two or more theories, data sources, methods or investigators to achieve a process of verification that increases validity and reliability of results (Yeasmin & Rahman, 2012:156; Everest, 2014:11). Meanwhile, complementarity entails integrating two different but connected answers to a research question; one reached via a quantitative approach and the other by means of a qualitative one (Florini et al., 2016). Through complementarity, the strengths of both quantitative and qualitative research methods were exploited (Onwuegbuzie & Johnson, 2006:51) in this study.

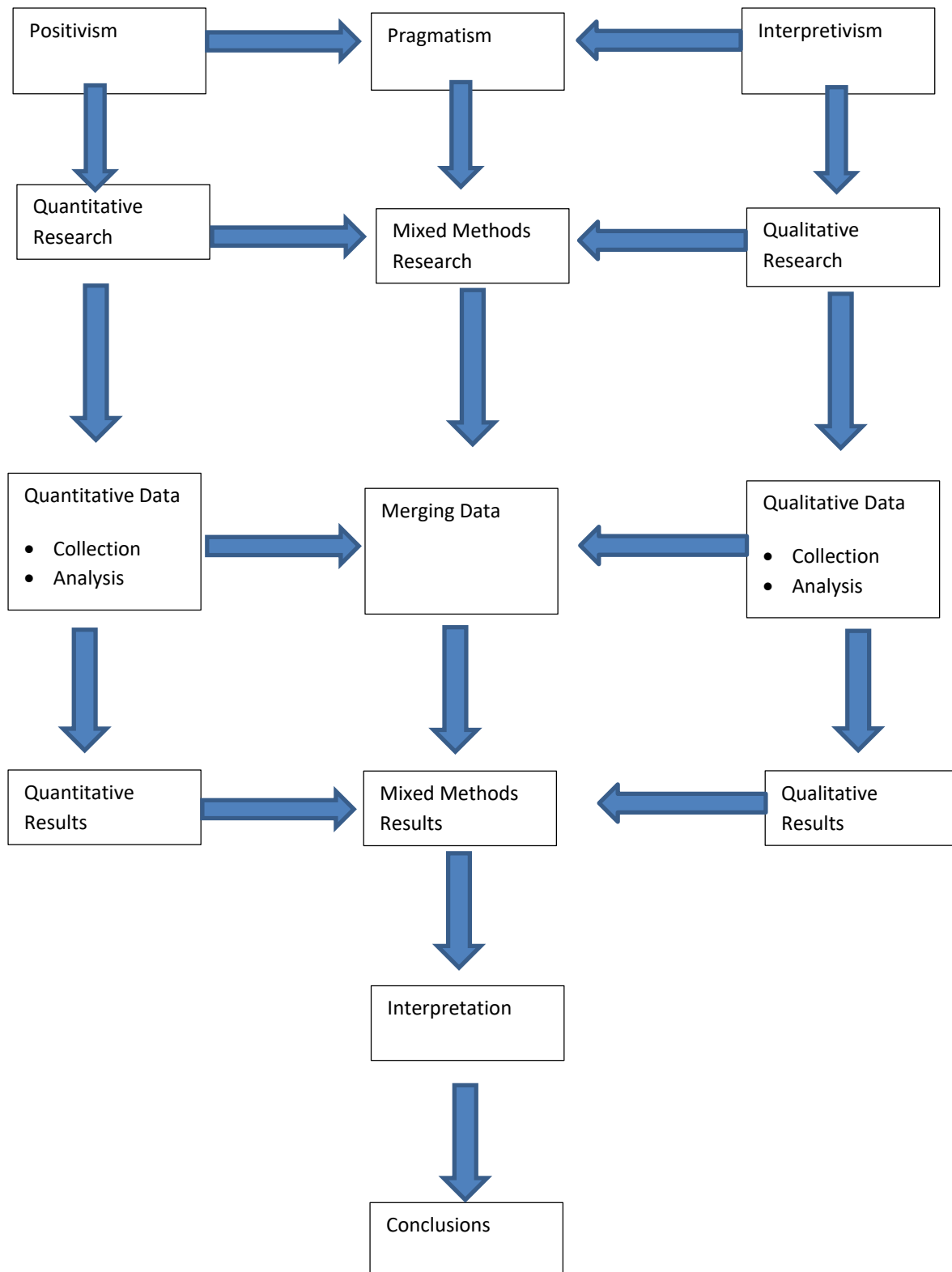


Figure 4.1: The Model of Mixed Methods Approach (Adapted from Creswell, 2006:8)

4.3.1 Justification of the Mixed Methods Research Paradigm

The researcher chose the mixed methods research paradigm because of its potential benefits that derive from those of pragmatism. For Johnson, Onwuegbuzie and Turner (2007:127), mixed methods research is used because it produces complementary strengths and non-overlapping weaknesses. Thus it utilizes the benefits of both quantitative and qualitative research while minimizing on their limitations (Creswell et al., 2011:272). Fiorini et al. (2016:37) confirm that mixed methods research allows researchers the opportunity to gain a greater, more meaningful understanding of phenomena and enables them to answer questions that may have been less than fully answered had quantitative or qualitative research methods alone been used. The authors further elucidate that mixed methods research enables researchers to best answer broad research questions and that its use of contrasting methodologies provides more robust and rigorous conclusions.

Caruth (2013:113) further concurs that using the mixed methods research paradigm presents a more enhanced insight into the research problem and research questions than using mono-methods. The author ultimately concludes that mixed methods research can potentially enhance the validity of the study, provide greater insights and challenge researchers through divergent or contradictory findings which necessitate alteration of research questions and hypotheses. According to the author, mixed research methods encourage researchers to conceivably fill in the knowledge gaps thereby enhancing the literature on the particular phenomenon such as sign bilingual education of which literature on the topic was sparse. For these reasons, Mertens (2007:210) earlier on branded the mixed methods research paradigm as “the methodology of choice” while Onwuegbuzie and Leech (2004:770) expresses it as “the real gold standard for studying phenomena”.

Consequently, the mixed methods research paradigm was used in this study because it led to the collection of richer data, a deeper understanding of and an in-depth inquiry into how sign bilingual education is used as a strategy for the inclusion of deaf children in Zimbabwe. As a result, the researcher was enabled to generate more complete answers to the research questions and to draw conclusions that were based on stronger evidence (Bleisch et al.,

2010:1). Imran and Yusoff (2015:389) add that by combining the strengths of both quantitative and qualitative methods, mixed methods research holds potential for precise, methodologically sound investigations in social research, and hence adds vigour to data analysis through the combination of empirical and descriptive precision. In the current study, the researcher was able to use qualitative data from interviews to validate empirical data that were collected and analysed using objective quantitative procedures. This approach was particularly relevant to this study since mixed methods research, just like sign bilingual education, has a bilingual framing (Everest, 2014:9). However, like pragmatism, mixed methods research is not without limitations. These limitations, which are nevertheless superceded by the strengths, are examined in the successive sub-section.

4.3.2 Limitations of the Mixed Methods Research Paradigm

The major limitations of mixed methods research according to Everest (2014:9) are that it can be difficult for a single handed researcher, is more expensive and is time-consuming. Caruth (2013:113) notes that because mixed methods research is more advanced, extensive and time consuming, it may necessitate use of a research team which could be more expensive and complex to manage. Fiorini et al. (2016:39) also agree that, due to lack of resources and time, many researchers find it difficult to undertake mixed methods studies especially when concurrent designs are used. For McKim (2017:202), the mixed methods research paradigm requires additional time due to the need to collect and analyse two different types of data and the complexity of the need to possess knowledge of both paradigms. To minimize these weaknesses, the researcher sought the services of an assistant researcher who was caused to sign a confidential consent form prior to his engagement. The signed confidential consent form was kept under lock and key together with the consent and assent forms of the participants of the study. The duties of the assistant researcher were predominantly to help in the distribution and collection of questionnaires and in the capturing including taperecording of the proceedings of the focus group interview sessions. In addition, the researcher opted for the sequential explanatory research design which tended to be less

complex to handle (Terrell, 2012:262). The researcher also limited the study to a more manageable yet technically large sample.

4.4 THE RESEARCH DESIGN

This study employed the sequential explanatory design. By definition the sequential explanatory design is the research strategy in which the study is divided into the quantitative and qualitative phases and in which quantitative data are collected and analysed ahead of qualitative data (Hanson et al., 2005: 229; Creswell et al.; 2011:8). In terms of weighting, the sequential explanatory design gives more prominence to quantitative data (Cresswell & Plano Clark, 2007) and timing is sequential, that is, quantitative data are collected first followed by the gathering of qualitative data (Cresswell, 2009:206-207). Because the aim of this study was to explore how sign bilingual education was used as a strategy for inclusion of deaf children in Zimbabwe, the researcher chose to survey a larger sample using quantitative methods. In order to come up with an in-depth understanding of certain unexpected results, interviews were then used to gather qualitative data. Timing and weighting in a mixed methods study, according to Creswell (2009:206), depend on the researcher's intent. Qualitative results were thus used to support and confirm the quantitative results by exploring certain or unexpected results in more detail (Terrell, 2012:262) in the present study. Specifically, issues relating to the methods of practicing sign bilingual as a strategy for inclusion, attitudes and policy implementation were further explored during interviews. This helped the researcher to explore, expand and confirm the quantitative findings (Fiorini et al., 2016:41).

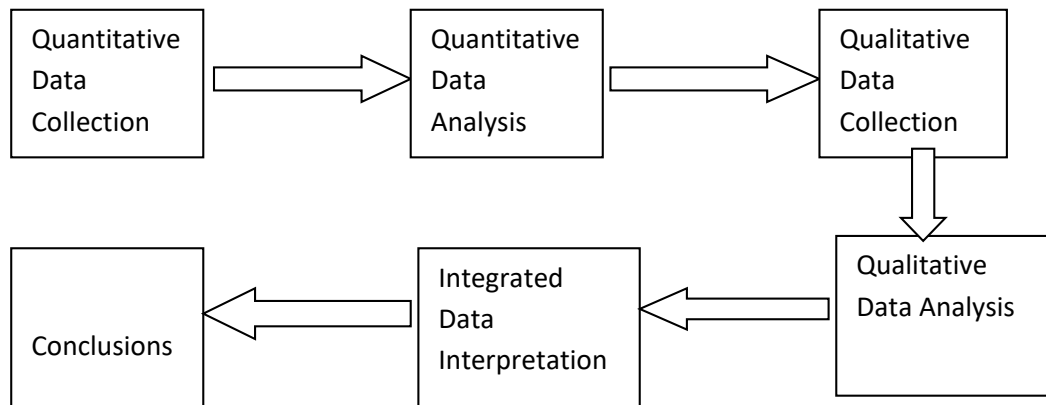


Figure 4:2: Model of the Sequential Explanatory Mixed Methods Research Design
(Adapted from Terrell, 2012:261)

4.4.1 Justification of the Sequential Explanatory Mixed Methods Design

The major justification of the sequential explanatory mixed method design is that the partial integration of data at the analysis stage allows for inferences to be drawn across all of the methodological research stages (Bleisch et al., 2010:4). Terrell (2012:262) adds that the sequential explanatory design is relatively straight forward due to its clear, distinct stages. It is flexible and provides researchers with the opportunity to review and analyse the survey or quantitative results and tailor the in-depth interview instrument to follow up on confusing or significant responses (Driscoll, Appiah-Yeboah, Salib & Rupert, 2007:22). These authors contend that the iterative analytic nature of the sequential explanatory design simplifies subsequent attempts to integrate the coded qualitative data collected via in-depth interviews with survey data.

4.4.2 Limitations of the Sequential Explanatory Mixed Methods Design

One of the few disadvantages of the sequential explanatory mixed methods design is that it is time-consuming to implement (Terrell, 2012:262). Driscoll et al. (2007:22) also note that the primary disadvantage is the time required to design and conduct separate tailored instruments for key informants. The authors add that the other disadvantage is the lack of overt linkages between the structured and unstructured responses compared to the concurrent designs. In view of these limitations, the researcher opted for a more manageable

sample which enabled a more comprehensive handling of data. For the qualitative phase, the researcher used only a few key informants and concentrated only on the divergent issues that were clearly relevant to the research questions. The other strategy used by the researcher was to ensure that related structured and unstructured questions were aligned to the same research question in order to achieve overt linkages between the data sets.

4.5 POPULATION

The population of a study is the entirety of all the possible participants or observations of that study. It is an entire group about which some information is required to be ascertained (Banerjee & Chaudhury, 2010:61). For this study, the population comprised of all the teachers, Heads of schools and their Deputies and Teachers in Charge or Senior Teachers and deaf children in the 115 mainstream schools that enrol deaf children and that practice sign bilingual education in Zimbabwe as a whole (Vinga, 2016). In Bulawayo Metropolitan Province, where the study was conducted, there were 12 of the schools with an average of 36 administrators, 300 teachers and 109 deaf children. The mainstream schools that practise sign bilingual education in Zimbabwe were designated by the Ministry of Primary and Secondary Education to accommodate at least a resource unit for deaf children. This is the general practice in Zimbabwe that deaf children are often enrolled in those mainstream schools that have a resource unit and therefore staffed with at least one specialist teacher of the deaf to facilitate inclusive education of the children.

4.6 SAMPLE

A sample is a portion of the population which is selected for the study using some laid down procedure. Gibson (2014:13) implores that a sample is the composition of some of the members of a population whose responses and characteristics reflect those of the entire population. According to Kemper, Stringfield and Teddlie (2003:284), in sequential explanatory mixed methods studies, information from a probability sample is used to draw the purposive sample. For this study, 100 mainstream teachers, 30 school administrators comprising Heads of schools and their Deputies and Teachers in Charge or Senior Teachers

and 30 deaf children were chosen for the quantitative phase of the study. For the qualitative phase an initial sample of 6 teachers, one administrator and one deaf child per each of the 10 schools was proposed. However, data saturation fully occurred at the fifth school for focus group interviews and at the fourth school for personal face-to-face interviews. Teddlie and Yu (2007:85) confirm that there are typically multiple samples in a mixed methods study and these samples vary in their sizes from a small to a large number of cases. The purpose of multiple samples in this study was also meant to achieve triangulation of data sources, hence an in-depth understanding (Yeasmin & Rahman, 2012:159) of how sign bilingual education is used as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. Triangulation of methods and of data sources in these regards was also meant to produce results that are more robust and compelling (Davis, Golicic & Boerstler, 2011:467) and to achieve trustworthiness (Gunawan, 2015:11).

4.6.1 Sampling Strategies

For the quantitative phase of the sequential explanatory mixed methods study, simple random sampling was used to choose teachers, administrators and deaf children to participate in the study. Simple random sampling is such that every member of the population has an equal probable chance to be chosen into the sample (Watt & van den Berg, 2002:63; Gibson, 2014:14, Davis & Lachlan, 2017:162). Random sampling in this study was used to negate charges of researcher bias (Gibson, 2014:15; Shenton, 2004:65) often associated with non-probability samples. Watt and van den Berg (2002:70) explain that simple random sampling is very easy to draw for small populations such as the one for this study. Ten out of 12 schools that used sign bilingual education in Bulawayo Metropolitan Province of Zimbabwe were chosen randomly for the study. At each of the schools, all the names of those teachers who taught deaf children were coded and written on small cards of the same size which we put in a box. The first 10 names drawn from the box were included in the sample. Meanwhile, 3 administrators of each of the 10 randomly selected schools became part of the sample. For the deaf children, the researcher targeted the population of those who were able to sign, read and write, that is those from grades five and beyond. From this target population at each

school, the researcher code-named the children and wrote the code-names on cards of equal dimension which were then put into a box. The first 3 names to be drawn from the box at each school were included in the sample.

As for the qualitative phase of the study, the researcher used purposive sampling to choose 6 teachers per school to participate at the school level focus group interviews. The research also chose one administrator and one deaf child per school for the personal face-to-face interviews. Purposive sampling is used to target participants according to their typicality, experience and knowledgeability or possession of the information the study is seeking to uncover. Etikan, Musa and Alkassim (2016:1) posit that the purposive sampling technique which is also known as judgmental sampling entails the deliberate choice of participants due to their characteristics of qualities that are of relevance to the study. It involves identification and selection of individuals or groups that are proficient, experienced and well-informed about the phenomenon of interest (Teddlie & Yu, 2007:77). In addition to the knowledge and experience, the participants should be available and be willing to participate in the study yet able to communicate experiences and opinions in an articulate and reflective manner (Etikan et al., 2016:2).

In this study, key informants such as specialist teachers of the deaf with qualifications and experience in deaf education were given priority to participate in the focus group interviews because of their assumed expert knowledge in sign bilingual education. Mainstream teachers who had vast experience in sign bilingual education were also included in the sample. Administrators who demonstrated keen interest in and knowledge of sign bilingual education as a strategy for inclusion during the quantitative phase were targeted for personal face-to-face interviews. Purposive sampling deliberately targets participants who have expert knowledge and experience about the phenomenon under study (Teddlie & Yu, 2007:77; Etikan et al., 2016:2). Meanwhile, deaf children who demonstrated relative proficiency in sign bilingual skills as evidenced by their stages of education were interviewed using sign bilingual practices. These strategies were in line with Fiorini et al.'s (2016:41) contention that, in

studies that use the sequential explanatory design, a few key informants are used to elicit an in-depth discussion in order to explain or elaborate earlier quantitative findings.

4.7 INSTRUMENTATION

Research instruments are the tools used for data collection. For this research, questionnaires, focus group and personal face-to-face interviews were used for eliciting data on how sign bilingual education is used as a strategy for inclusion of deaf children in Zimbabwe. Self-administered semi-structured questionnaires were used for teachers and administrators while a simple structured questionnaire was used for deaf children. The questionnaires were used for the quantitative phase of the study since they typically reflect a positivistic research orientation (Hurry, 2014:10). In addition, the focus group interview was used to collect qualitative data from teachers while personal face-to-face interviews were used to elicit qualitative data from administrators and from deaf children. While interviews can be suitable for quantitative data collection, they are particularly useful when qualitative data are sought after (Zohrabi, 2013:255; Walliman, 2010:283 Hofisi, Hofisi & Mago, 2014:60). Both questionnaires and interviews were used in this study in order to achieve confirmatory results (Harris & Brown, 2010:1).

4.7.1 Questionnaire

Semi-structured questionnaires which were used in this study contained both closed-ended and open ended questions although the closed-ended questions were pre-dominant. The questions were generated in sync with sub-research questions and were informed by literature that was reviewed for the study. Gibson (2014:3&5) suggests that sub-research questions and literature review are important referents in designing research instruments. Zohrabi (2013:255) recommends the use of a semi-structured questionnaire since it is complementary in nature. The other advantages of the self-administered semi-structured questionnaire are that it is cheap to administer, it allows for greater coverage than face-to-face interviews, it is less amenable to interview bias and provides greater anonymity of the participant (Phellas, Bloch & Seale, 2011:184). It is also time-efficient as a means of collecting

data on a large scale as it can be simultaneously sent to a large number of people thereby ensuring standardization and enabling the participants to share information freely and the researcher to easily analyse data (Hurry, 2014:10; Zohrabi, 2013:255). A self-administered questionnaire also enables a higher return rate than a mailed one and provides for necessary explanations and the benefits of personal contact (Akbarak, 2000:2). In this study, a 100% return rate was realized for teachers and deaf children while a 96.67% return rate was realized for the administrators. The researcher was also able to gain personal contact with the participants so as to explain issues and to identify potential participants in the qualitative phase of the study.

According to Gillham (2000) and Brown (2001), both cited by Zohrabi (2013:255), the limitations of the questionnaire is that sometimes it can be returned with unclear, unrelated, inconsistent, questionable or inaccurate responses. It is also harder to check the genuineness of the responses and it is not unusual to find incomplete or blank responses as a result of deliberate or accidental omissions (Hurry, 2014:10). In addition, the questionnaire does not provide opportunity to probe or clarify misunderstandings (Phellas et al., 2011:184). To minimize these limitations, the researcher predominantly used simple straightforward structured questions which required direct objective answers. Phellas et al. (2011:183) also suggest that self-completion questionnaires are nevertheless more suited to issues where there are only a few questions that are relatively clear and simple in their meaning and a choice of responses can be limited to fixed categories. The researcher used the 5-point Likert Scale for teachers and administrators and 'Yes', 'No' and 'Not Sure' categories for deaf children to simplify the response method. The researcher also personally delivered the questionnaires and followed up on the copies which were not returned to the link person with the rest of the others. The researcher further made provision for clarification by including open-ended questions and using follow-up interviews.

4.7.2 Personal Face-to-Face Interview

Semi-structured personal face-to-face interviews were used with administrators and deaf children. The interview guides were developed from the results of the quantitative phase of the study. Those interesting issues which emerged from the analysis of the questionnaire results were captured and used in designing the interview guide. In the sequential explanatory mixed methods study, interviews are derived from the quantitative phase (dos Santos, Erdmann, Meirelles, de Melo Lanzoni, da Cunha & Ross, 2017:5). Walliman (2010:285) opines that a semi-structured interview falls between a structured and an unstructured interview and is, therefore, able to generate defined answers to defined questions while leaving time for further development of those answers. It is flexible (Cohen et al., 2007:348; Hofisi et al., 2014:62) and has the ability to elicit in-depth first-hand information (Zohrabi, 2013:255). Aleshengeeti (2014:40) agrees that a semi-structured interview is a more flexible version of the structured interview which allows depth to be achieved by providing the interviewer opportunity to probe and expand the interviewees' responses. This is because the questions are pre-planned prior to the interview but the researcher gives the interviewee chance to elaborate particular issues through open-ended questions (Alsaawi, 2014:151).

In this study, the semi-structured interviews were organized around interview/ topic guides that helped keep the conversation in focus while allowing sufficient opportunity for relevant issues to emerge (Alshengeeti, 2014:40; O'Keeffe, Buytaert, Mijic, Brozovic & Sinha, 2016:1911). The interviews enabled the research to observe non-verbal responses (Hofisi et al., 2014:63), to generate rich detailed data and to make more accurate assessment of issues (Okeefe et al., 2016:1912). However, personal face-to-face interviews have their own weaknesses too. The notable weaknesses are that they are time-consuming and they are more expensive than the questionnaire (Hofisi et al., 2014:64). They are also prone to interviewer bias due to their perceived lack of anonymity and may lack standardization (Zohrabi, 2013:256). These limitations were mitigated through use of manageable sample categories, building rapport with participants, stopping collection of data at saturation point and using interview/topic guides to keep the discussion on track.

4.7.3 Focus Group Interview

Focus group interviews were used with a sample of 6 teachers per school who had better knowledge of sign bilingual education than their colleagues on the basis of their qualifications and experiences. A focus group interview, according to Cohen et al. (2007:376), is a contrived setting, bringing together a specifically chosen sector of the population to discuss a particular theme or topic. It is an interviewing technique in which participants are selected because they are a purposive, but not necessarily a representative sample and because they are 'focused' on a given topic (Barbour & Schostak, 2005 in Alshenqeeti, 2014:40). The focus group interview was, therefore, used in this study because of its unique advantages. One of the major advantages of the focus group interview is that it creates an environment for a large amount of interaction whereby participants engage each other in the articulation of important and interesting issues related to the study (Hofisi et al., 2014:63). The focus group interview guide was developed based on interesting and unexpected results of the questionnaire, just like in the case of the face-to-face interview guides. In this study, factors relating to proficiency, attitudes, policy and conceptual issues about sign bilingual education as a strategy for inclusion which were not adequately expressed in the questionnaire were uncovered through the focus group interview. In these regards, a focus group interview is a quick, in-depth data gathering method (Alshenqeeti, 2014:40) which yields insights that might not otherwise have been achieved by way of a questionnaire (Cohen et al., 2007:376). The focus group interview also empowered the participants to speak out in their own words and to interrogate issues in greater depth and proved to be useful for triangulating with the questionnaire and personal-face-to-face interview.

Nevertheless, the focus group interview has its own limitations that border around lack of standardization and the effect of group power dynamics. In summary, a focus group interview may necessitate non-participation by some and dominance by the other members of the group (Hofisi et al., 2014:63). The authors observe that one or a few participants may influence other members to follow their own line of thinking. In some such cases, intra-group disagreements or conflicts may erupt. For Cohen et al. (2007:377), focus group interviews tend to yield data that are non-quantifiable and generalizable and which may be difficult to

analyse succinctly. In order to counteract these weaknesses, the researcher, while keeping the focus groups as small as possible, allowed detailed in-depth discussions and persistently encouraged all members to share their ideas. The research also directed the discussions towards those issues that were salient in the questionnaire and needed further deliberation. Triangulating the focus group interview and the questionnaire as well as the semi-structured personal face-to-face interviews was also meant to compensate for these limitations of the focus group interview.

4.8 PILOT STUDY

As a way of ensuring the validity and reliability of the instruments, the researcher conducted a pilot study (Mohamad, Sulaiman, Sern & Sulleh, 2015:165) with 20 teachers, 6 administrators and 6 deaf students in the two remaining of the 12 schools that use sign bilingual education in Bulawayo Metropolitan Province. The two schools were not sampled for the principal study. Phellas et al. (2011:197) declare that the people used in the pilot study should be excluded from the main study because their prior experience with the instrument may compromise their responses. According to the authors, the purpose of the pilot study is to determine the time that would be taken to complete the instrument, the clarity of instructions and questions as well as confirming the authenticity of the layout and the completeness of the instrument. In other words, the purpose of the pilot study is to refine the instruments and methods of collecting data (Walliman, 2010:70). The results of the pilot study of the research assisted the researcher to restructure the original questionnaires for teachers and for the administrators so that the questions were re-grouped according to research questions. The interview schedules were re-arranged and the observation checklist which was originally meant for deaf children was developed into a simplified structured questionnaire. These changes were meant to improve the validity and reliability of the study.

4.9 VALIDITY AND TRUSTWORTHINESS

Golafshani (2003:599) conceptualizes validity of a study as its ability to truly measure that which it was intended to measure. Cohen et al. (2007:133) argue that the conception of

validity has changed overtime so that in quantitative research it can also be achieved through careful sampling, appropriate instrumentation and statistical treatment of the data. The authors posit that in qualitative research, validity can be achieved through honesty, depth, richness and scope of data, the type of participants selected, triangulation and objectivity of the research. Validity is however a term which is resident in the positivist tradition and hence a quantitative research phenomenon whose equivalent in qualitative research is trustworthiness (Gunawan, 2015:10; Anney, 2014:272-273; Zohrabi, 2013:258; Onwuegbuzie, Johnson, 2006:51; Shenton, 2004). In mixed methods research, trustworthiness is conceived in terms of credibility, dependability, transferability and confirmability of the results of the study (Anney, 2014:276; Gunawan, 2015:10; Shenton, 2004:64; Onwuegbuzie & Johnson, 2006:49). Thus, validity or trustworthiness in mixed methods research is concerned with whether the results of the study are believable and true (Zohrabi; 2013:258).

As a way of achieving validity of the results of the quantitative phase of the study, the researcher used randomization and appropriate instrumentation followed by a pilot study. For the qualitative phase, the researcher ensured trustworthiness through the use of in-depth interviews, rigorous analysis of data and member checking. Zohrabi (2013:258) asserts that member checks by way of taking results back to the participants for the confirmation and validation of the plausibility and truthfulness of the information so that it could be recognised and supported. The author also believes that triangulation of data sources which is prominent in this study, also strengthens the validity or worthiness of research findings. Member checking which was practiced in this study is the single most critical technique for establishing credibility (Ganawack, 2015:10) while triangulation of multiple sources reduces the effects of investigation bias by increasing validity estimates or trustworthiness (Anney, 2014:277; Newman, Lin & Pineda, 2011:2). On the whole, the sequential mixed methods research designs, by their very nature, add value by increasing validity or trustworthiness in the findings, since the first phase of the study is used to inform the second (McKim, 2017:203). In this study, the use of the sequential explanatory design enabled extreme and interesting cases from the questionnaire to be further explored using interviews.

4.10 RELIABILITY

According to Creswell (2005) in Mohamad et al. (2015:164), reliability means that the scores of an instrument are stable and consistent. For Cohen et al. (2007:146), reliability in quantitative research is essentially dependability, consistency and replicability while in qualitative research, it can be conceptualized in terms of dependability, consistency or credibility. Meanwhile, in mixed methods research, it is advisable to think of reliability in terms of dependability and consistency (Zohrabi, 2013:259). To improve reliability of the results of this study, the researcher explicitly explained the various processes and phases of the study in the reporting, described in detail the data collection procedures and analysis methods and triangulated multiple sources of data by using different instruments and multiple categories of the sample. Zohrabi (2013:260) insinuates that such detailed explication of the research processes can help replicate the research findings and contribute to the reliability of the study.

In addition to the foregoing efforts, the researcher used the pilot study results to estimate the reliability coefficients of the questionnaire, via Cronbach's alpha. The questionnaire for teachers achieved a 0.897 reliability coefficient, the questionnaire for administrators 0.757 and the questionnaire for deaf children 0.725 (**See Appendix R**). These coefficients suggest that the instruments were sufficiently valid, hence usable for the study. Fraenkel and Wallen (1996) state that a reliability coefficient of within 0.70 to 0.90 is adequate, Kubiszyn and Borich cite a range of 0.80 to 0.90 as sufficient while Ghazali (2008) believes that 0.60 is acceptable for social science (Mohamad et al., 2015:165).

4.11 DATA COLLECTION PROCEDURES

Upon securing permission from the Ministry of Primary and Secondary Education Provincial offices in Bulawayo and having sought permission from Heads of schools and informed consent from Deputy Heads; Teachers in Charge or Senior Teachers and classroom teachers, the researcher personally distributed questionnaires and made appointments for the interviews through the school Heads. In the case of deaf children, due consent was first

sought from parents or guardians. After obtaining due consent from the parents or guardians, the researcher also gave the deaf children opportunity to freely assent to their participation in the study. In all cases, an information sheet which contained details of the procedures and potential benefits of the study and which guaranteed anonymity and confidentiality was provided prior to signing of the consent forms by the participants.

To ensure absolute anonymity, participants were requested to handover the completed copies of questionnaires to the link person who was often the specialist teacher of the deaf in the school. The researcher personally collected the completed questionnaires as a batch. This strategy ensured a 100% return rate of the questionnaires for teachers and deaf children and a 96.67% return rate for the questionnaires for administrators. After analyzing the questionnaires, the researcher returned to the schools to conduct the follow-up interviews. For the focus group interviews, the researcher used 6 teachers per school that had tremendous knowledge of sign bilingual education as suggested by their qualifications and/or experience. Issues that tended to be interesting, atypical and divergent and needed clarification were raised during the focus group interview.

As has already been mentioned, these included issues related to proficiency, attitudes, policy and conception of sign bilingual education as a strategy for inclusion. Face-to-face interviews were targeted at school administrators who were more knowledgeable about sign bilingual education and showed positive attitude toward its practice. They were also targeted at deaf children who had better Sign Language and literacy skills than their peers. During interviews, data were collected using notes and direct quotations. The researcher also tape-recorded some interviews where the participants were agreeable. Tape-recorded data were transcribed into written text. The researcher then took the written texts, particularly the direct quotations, back to the respective participants to confirm. Zohrabi (2013:258) calls this member checking which enables participants to confirm what they had stated during the interviews.

Both focus group and personal face-to-face interviews were pursued until no new information was emerging from successive discussions. Thus, interviews were carried out to the point of data saturation which was achieved at the fifth school for focus group interviews and at the fourth for personal face-to-face interviews. Fusch and Ness (2015:1409) contends that interviews are one method by which study results can reach data saturation. Consequently, data saturation in mixed methods research is a useful criterion with regards to conclusions to the extent that theoretical generalisations can be made even in the absence of statistical sampling methods (Onwuegbuzie & Johnson, 2006:58). This is one other reason the researcher safely opted for manageable instead of very large samples for the quantitative phase of the study.

4.12 DATA ANALYSIS METHODS

Hanson et al. (2005:229) explain that data analysis in sequential explanatory designs is connected and integrated and that it often occurs at the data interpretation and discussion stages at which qualitative data are used to augment or enhance quantitative results (**See Figure 4.2**). Figure 4.2 illustrates that quantitative data analysis is done before qualitative data collection and that the two sets of results are ultimately integrated before conclusions could be drawn. Quantitative data from questionnaires were coded and analysed using frequency counts and percentages generated via SPSS. In order to understand the extent to which the benefits derived from sign bilingual education were particularly driven by certain conceptions and practices of sign bilingual education as a strategy for inclusion other than others, mean scores aggregating the scores on all the items representing conceptions and practices to measure the extent of the benefits were generated and Spearman's Rank Order Correlation Coefficients computed for both teachers and administrators respectively. The resultant p-values were used to determine statistical significance at a 5% level (**See Appendix S**).

Data from open ended responses to the questionnaires were analysed using content analysis. Content analysis, according to Imran and Yusoff (2015:389), is one of the analysis methods

that add vigour to investigation. Qualitative data were broken down into sub-themes and analysed using text analysis as well as thick analysis (Bernard 2003:85). Text analysis involves identifying and breaking down themes, winnowing the themes and building thematic hierarchies to link them to the topic (Ryan & Bernard, 2003:85). Evers (2016:1) contends that thick analysis enhances the depth and breadth of data analysis. Thereafter both sets of data were combined in which case qualitative data were used to confirm or refute the quantitative results (Creswell et al., 2011:5). This enabled the researcher to gain a more complete picture of the results of how sign bilingual education is used as a strategy for inclusion of deaf children in Zimbabwe.

4.13 ETHICAL CONSIDERATIONS

Research ethics are code of conducts for distinguishing between what is right and wrong during and after the research process. It refers to an ethos or social norms for conduct that distinguishes between acceptable and unacceptable behaviour (Shah, 2011:205; Akaranga & Ongong'a, 2013:8; Resnik, 2015:1). Ethics promote the aims of research (Resnik, 2015:1) and they involve requirements on daily work and the protection of the dignity of the participants in research. In this research, the ethical codes of conduct that include informed consent and assent, confidentiality and anonymity, beneficence and maleficence were primarily considered. Equally important, the researcher applied for and was issued with an Ethics Certificate by the Ethics Committee for the UNISA College of Education before conducting the study. The researcher also sought permission from the Ministry of Primary and Secondary Education to gain access to the schools and consequently to the participants.

4.13.1 Informed Consent

Informed consent is one of the major ethical issues in conducting research. It entails that a person knowingly, voluntarily, intelligently and in a clear and manifest way make a decision to participate in research (Akaranga & Makau, 2016:1; Fouka & Mantzorou, 2011:3). Informed consent is, therefore, the means by which the right of research participants to autonomy decisions to take part in research is respected and protected and their values of self-

determination are given due regard in order to protect their personal liberty and veracity (Scott, 2013:79; Touka & Mantzorou, 2011:3; Akaranga & Makau, 2016:7). In this research, participants were exposed to detailed information regarding the process and benefits of the research, were not coerced to participate and were made aware that withdrawal from the study at any stage was without penalty (Koulouriotis, 2011:134). The participants then signed the consent forms on their own volition indicating that their participation in the study was voluntary.

In case of deaf children, their assent was sought in addition to due consent from their parents or guardians. Pillay (2014:197) proclaims that if child participants are under the legal age of consent, then the permission of parents or legal guardians is required. Scott (2013:80) says that in addition the child's assent must be sought. In this regard, the researcher wrote to the parents or guardians seeking authority to involve their children in the study and also wrote to the individual children seeking their assent. The researcher used simple language in the letters to deaf children and explained the contents using basic Sign Language with the help of a specialist teacher of the deaf in each school. Koulouriotis (2011:2) emphasizes the need for using language that is understandable to the child participant.

4.13.2 Confidentiality and Anonymity

In order to obtain informed consent and assent, the researcher assured the participants of the confidentiality of their responses and anonymity of their identities. Confidentiality relates to the management of private information by the researcher in order to protect participant identity while anonymity is when the participant's identity cannot be linked with personal responses (Fouka & Montzorou, 2011:6). In this study, the researcher discouraged participants from writing their names or any form of identity on questionnaires. During analysis, the researcher used codes instead of individual participants' names. All data collected were kept under lock and key in the researcher's office. Scott (2013:81) posits that research participants should be assured that personal information will be kept private and confidential and that data handling processes will ensure anonymity.

4.13.3 Beneficence and Non-maleficence

According to Akaranga and Makau (2016:6), beneficence means doing good while non-maleficence focuses on avoiding harm and potential risks of participation in the study. This study did not pose any potential risks but the researcher clearly articulated the potential benefits of the study to the participants.

4.14 CHAPTER SUMMARY

This chapter elucidated and justified the methodological frameworks and the methods that guide this study. The chapter reveals that this study is a mixed methods study which is informed by pragmatism. The study is guided by the sequential explanatory design in which qualitative face-to-face personal and focus group interviews were used to authenticate quantitative data from the questionnaires. The chapter justifies the use of multiple sources of data and puts forward strategies for how validity or trustworthiness and reliability were achieved. It also examines the data collection procedures and analysis methods that were adopted for the study. The chapter wraps up by outlining strategies for ensuring major ethical considerations that included informed consent, confidentiality and anonymity as well as beneficence and non-maleficence. In the successive chapter, the researcher presents and analyses the data in sequential explanatory fashion. Quantitative data are presented and analysed first followed by the qualitative data presentation and analysis and ultimately by the integration of the two types of data.

CHAPTER FIVE

RESULTS AND DISCUSSION

5.1 INTRODUCTION

This study sought to interrogate how sign bilingual education is used as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. The previous chapter examined the foundations and strategies for using mixed methods which informed this study. An explanatory mixed methods design was utilised and hence the first section of this chapter presents quantitative results. 'Strongly agreed' and 'agreed' are taken to mean 'agreed' and 'most often' and 'often' to mean 'often' in the quantitative phase of the study in order to provide a comprehensive analysis and discussion. Quantitative results are presented using bar charts and component graphs generated using SPSS and analysed using frequency counts, percentages and inferential statistics in the form of analysis of Spearman's Rank Order Correlation Coefficient at a 5% level of significance. In the successive section, qualitative results are presented and in the final section the two sets of results are integrated. Qualitative results are presented using descriptive summaries and analysed using thick descriptions and content analysis. In each case, the results are discussed in light of existing literature and previous studies on sign bilingual education as a strategy for inclusion of deaf children. Where variances exist between previous findings and the findings of this study, explanations are proffered.

5.2 SECTION A: QUANTITATIVE RESULTS

The quantitative results in this section include demographic data for the 100 (100%) teachers and for the 29 (96.67%) out of 30 administrators who took part in the study. The results also show the descriptive statistics of the questionnaire responses of the teachers, the administrators and the 30 (100%) deaf children. Inferential statistics in form of Spearman's Rank Order Correlation Coefficient and resultant p-values computed via SPSS are also

presented to show how all other factors relate to sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe.

5.2.1: Demographic Data for Teachers (n=100)

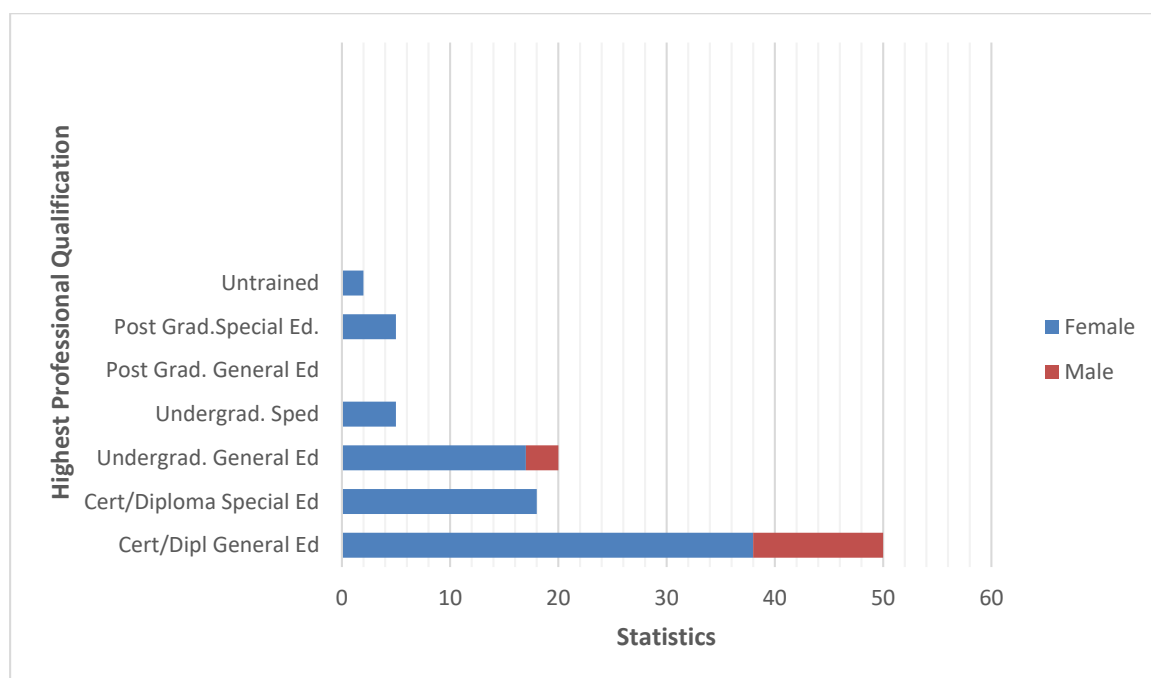


Figure 5.1: Teachers’ Gender and Highest Educational Qualification

Figure 5.1 shows that most of the teachers (50%) had at most a Certificate/Diploma in General Education and the majority of them (85%) were female. Eighteen percent (18%) and 20% respectively held a Certificate/Diploma in Special Education and an Undergraduate Degree in General Education while 5% held Undergraduate and another 5% Post Graduate Degrees in Special Education as their highest qualifications. Two percent (2%) of the teachers were untrained and none held a Post Graduate Degree in General Education. These results reflect that deaf children in sign bilingual inclusive programmes in Zimbabwe were mostly taught by teachers who in the mains had not undergone special education training.

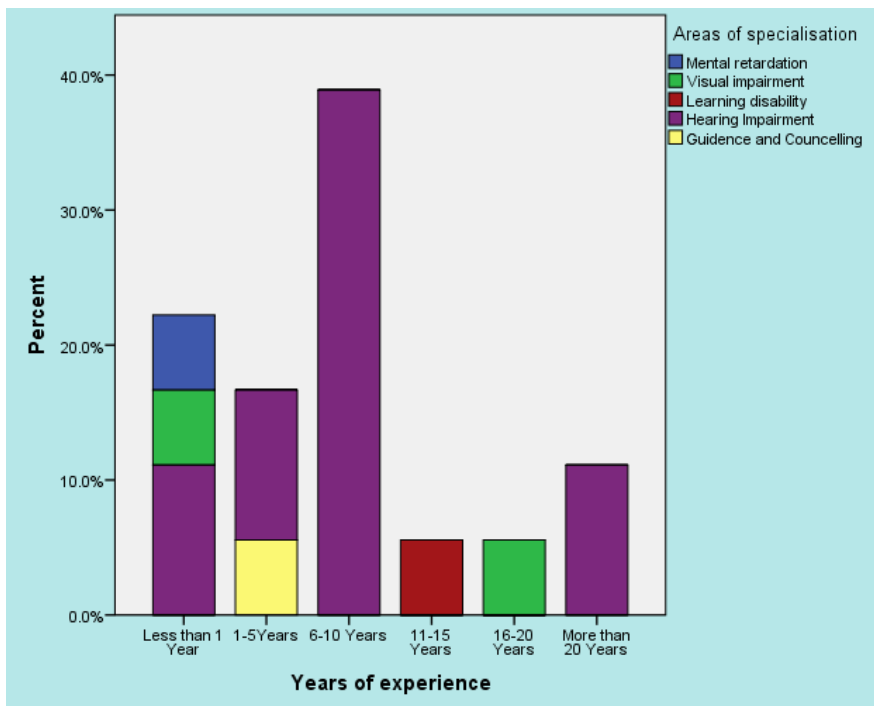


Figure 5.2: Teachers' Experience with Deaf Children and Area of Specialisation in Special Education

From Figure 5.2, the majority of teachers (76%) who had trained in special education specialised in hearing impairment. Most of these specialist teachers of the deaf (40%) had experience ranging between 6 and 10 years teaching deaf children. Twelve per cent of the teachers who specialised in hearing impairment (deaf education) had less than 1-year experience, another 12% had 1 to 5 years' experience yet a similar number had more than 20 years' experience. The other areas were represented by low proportions (guidance and counselling (5%), mental retardation (5%), visual impairment (9%) and learning disability (5%) of the teachers who specialised in them. The results are indicative of a relatively ideal situation where deaf children in sign bilingual education programmes are better served when taught by experienced specialist teachers of the deaf. Humphries (2013:17) comments that in the USA, many of the schools which established self-declared sign bilingual programmes with little or no training of staff failed dismally. This suggests potential for the success of sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. Training should, however, also include preparation of deaf culturally responsive

educators, that is, teachers who are culturally competent in deaf culture and proficient in Sign Language (Mounty et al., 2013:334). This is yet to be established in this study.

5.2.2: Demographic Data for Administrators (n=29)

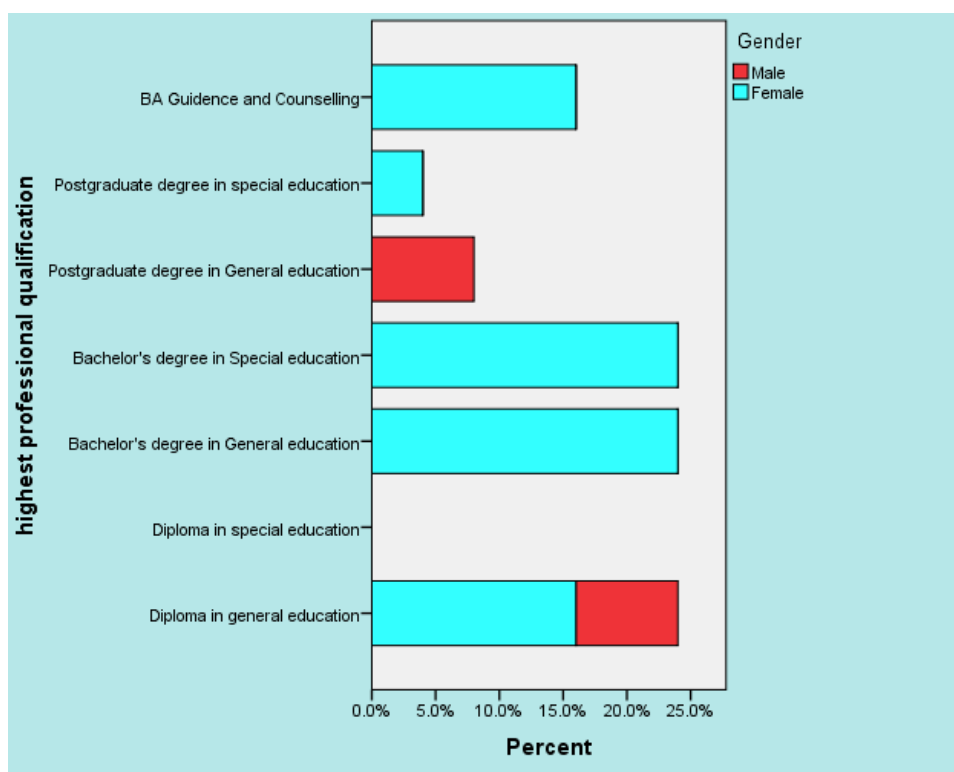


Figure 5.3: Administrators’ Gender and Highest Educational Qualification

The results presented in Figure 5.3 show that 76% of the school administrators had degrees as their highest qualification. Of these, 24% had Undergraduate Degrees in Special Education while 4% had Post Graduate degrees in Special Education. Eight percent (8%) had Postgraduate Degrees in General Education while 24% had Bachelor’s Degrees in General Education yet the other 24% had Certificates or Diplomas. This situation looks ideal for the practice of sign bilingual education, since a significant number (28%) had qualifications in Special Education and could be used to staff develop others.

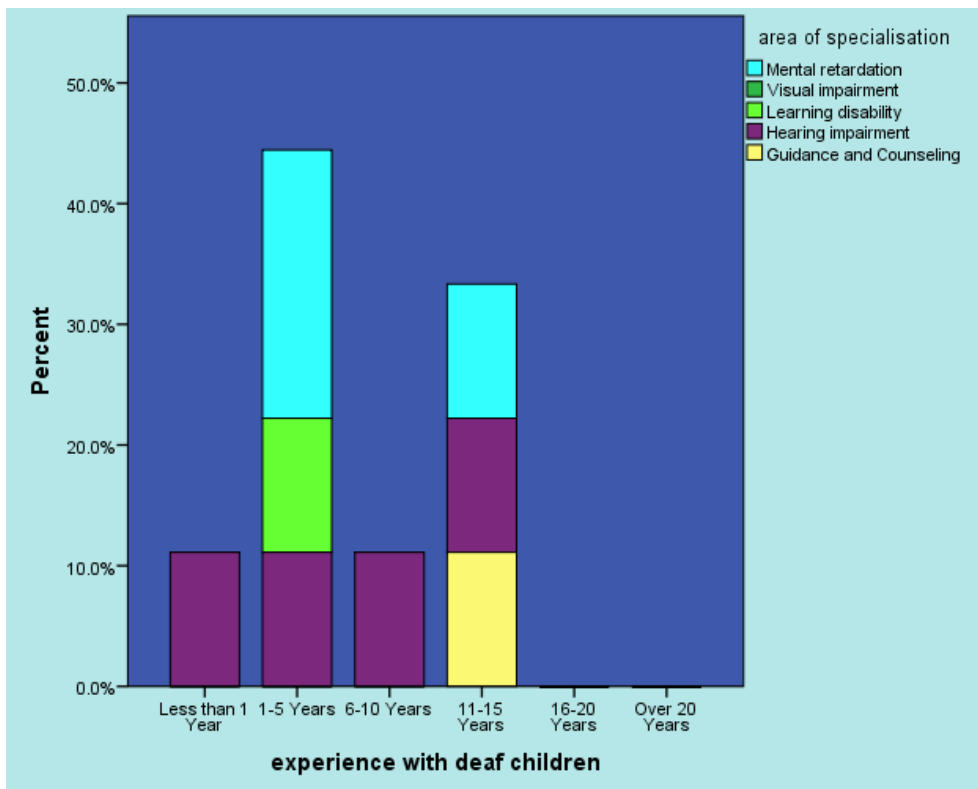


Figure 5.4: Administrators’ Experience with Deaf Children and Area of Specialisation in Special Education

Figure 5.4 depicts that 46% of the administrators had up to five years’ experience with deaf children yet 33% had between 11 and 15 years of such experience. The other 11% had between 6 and 10 years’ experience with deaf children. Like in the case of educational qualification, this picture projects an ideal situation for the practice of sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe in light of the vast experiences of the administrators with deaf children.

5.2.3 How is sign bilingual education conceived as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?

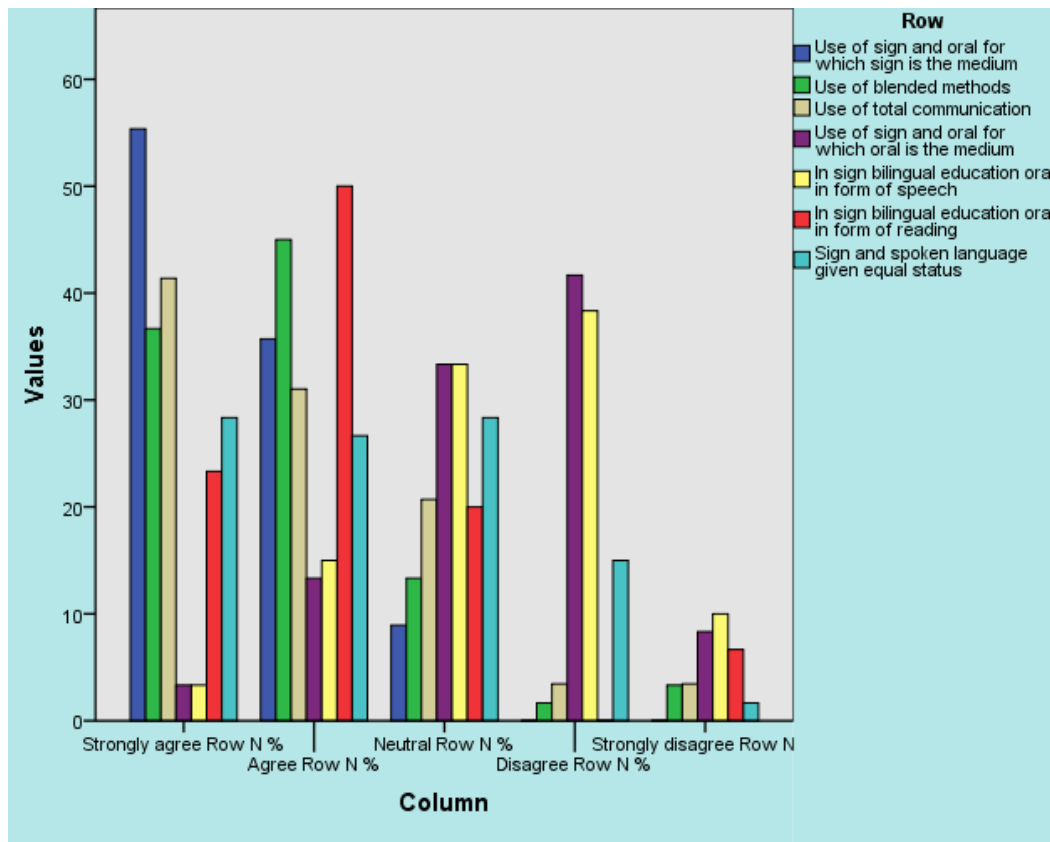


Figure 5.5: Teachers' Conception of Sign Bilingual Education

According to Figure 5.5, 90% of the teachers conceived sign bilingual education as entailing the use of both sign and oral language for which Sign Language is the medium of instruction. In addition to the use of Sign Language and oral language, teachers also conceived sign bilingual education as the use of blended methods (83%) and Total Communication (74%). A good number of the teachers (72%) were of the opinion that oral language in sign bilingual education is in the form of reading and writing. The opinion of administrators pertaining to the use of sign bilingual education as a strategy for inclusion of deaf children is depicted in the clustered bar chart that follows.

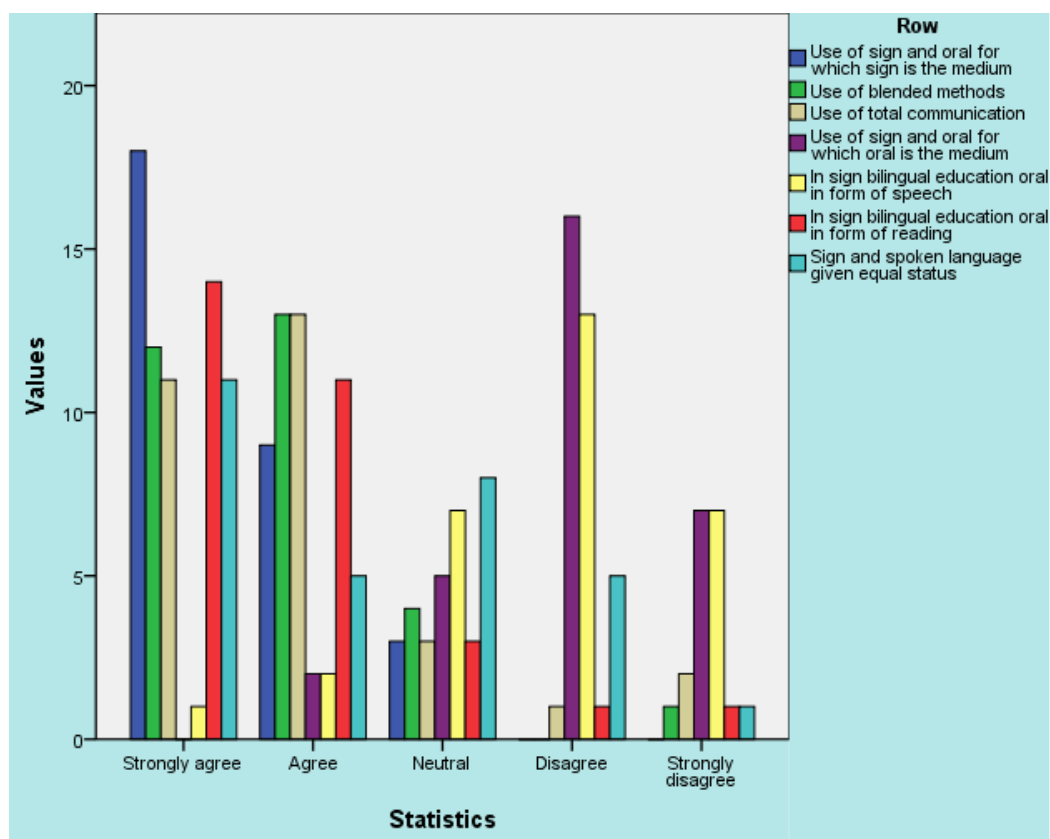


Figure 5.6: Administrators' Conception of Sign Bilingual Education

Like in the case of teachers and as depicted by Figure 5.6, use of sign and oral languages for which Sign Language is the medium of instruction was the main conception of sign bilingual education among the administrators (82.76%). Similarly, the fact that oral language in sign bilingual is in the form of reading and writing featured prominently in the administrators' (82.76%) conception of sign bilingual education. Use of blended methods, such as fingerspelling and Total Communication, was also cited by a significant number of administrators (86.21%) as part of how they conceived sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe. The administrators (68.97%) further conceived sign bilingual education as involving equality of status between sign and oral languages. This last conception of sign bilingual education by administrators was, however, not popular among teachers.

Conceiving sign bilingual education as the use of Sign Language and reading and writing by both teachers and administrators in Zimbabwe is in tune with its classical international conception of the use of two or more languages of which at least one is a Sign Language (Swanwick, 2010:148 & 2016:3; Garate, 2014:38; Mitchner, 2015:52). However, the idea of using blended methods such as fingerspelling and Total Communication demonstrates that the conception of sign bilingual education in Zimbabwe was still clouded in oralism. Nevertheless, Swanwick et al. (2016:300) implies that the flexibility of using blended methods in the conception of sign bilingual education is acceptable while Mayer and Leigh (2010:184) predict a new conceptualization to encompass blended methods as long as we do not run the risk of falling back to oralism or monolingualism.

5.2.4 What methods are used to practice sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?

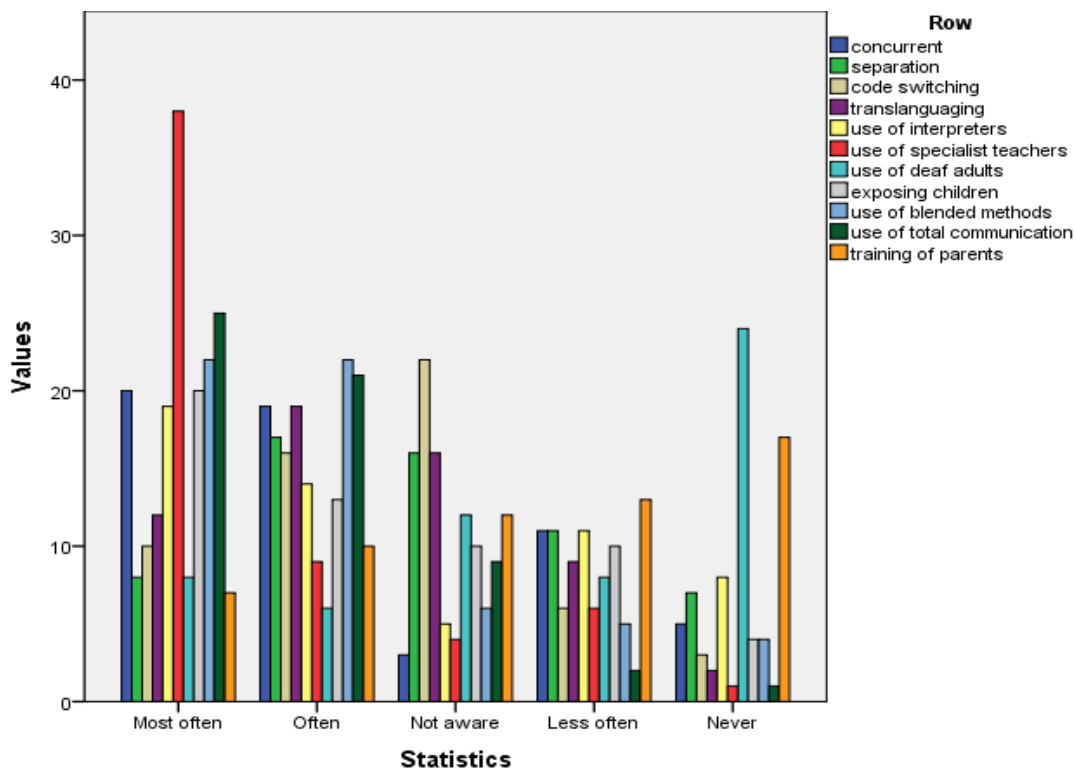


Figure 5.7: Teacher Identified Practices of Sign Bilingual Education

Figure 5.7 presents practices used for sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. Use of specialist teachers as Sign Language interpreters (47%) and total communication (46%) are the leading practices of sign bilingual education as a strategy for inclusion from the teachers' point of view. Use of blended methods such as fingerspelling (46%) and concurrent use of sign and oral languages (38%) were the other methods often used to practise sign bilingual education as a strategy for inclusion that were identified by teachers. A number of teachers also believed that the other prominent practices were exposing deaf children to deaf culture (34%) and using qualified Sign Language interpreters (33%). Use of translanguaging (30%) was the other popular method of practicing sign bilingual education as a strategy for inclusion while 26% of the teachers pointed to the use of codeswitching yet a number of them were not aware of these methods (16% and 22% respectively). The usage of deaf adult models (8%) and the training of parents in sign bilingual skills (10%) were the least used approaches according to teachers.

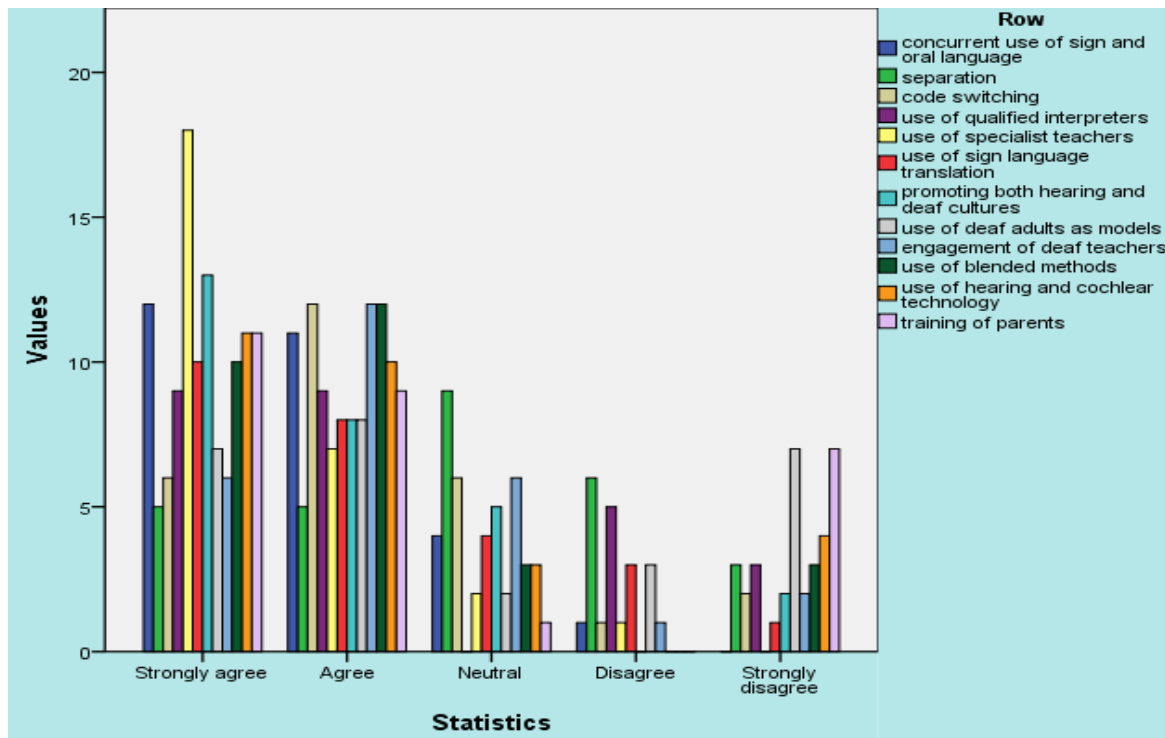


Figure 5.8: Administrator Identified Practices of Sign Bilingual Education

Figure 5.8 shows that from the point of view of administrator, all the cited methods except for the usage of deaf adults as models are considered to be generally used in the practice of sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe. Eighty-nine point six six percent (89.66%) of the administrators who participated in the study cited the use of specialist teachers as Sign Language interpreters as a way of facilitating the practice of sign bilingual education as a strategy for inclusion of deaf children while 68.97% observed promotion of both hearing and Deaf cultures. Eighty-six point two one percent (86.21%) of the administrators agreed that concurrent use of both languages was a prominent practice of sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. Meanwhile, 72% of the administrators thought that qualified Sign Language interpreters were used. From the figure, it is also evident that 68.97% of the administrators cited codeswitching as the main method of practising sign bilingual education yet 82.76% cited Sign Language translation which, however, turned out to be translanguaging in the qualitative analysis of results. Although there was no single school that had engaged deaf teachers, up to 62.07% of the administrators had indicated that engagement of deaf teachers was one of the practices of sign bilingual education as strategy for inclusion in Zimbabwe and 75.86% had cited use of hearing technologies. These results were further interrogated during the qualitative phase of the study.

It would appear from these results that sign bilingual education in Zimbabwe is practiced through Sign Language interpretation and use of blended methods such as fingerspelling and Total Communication. In effect, Sign Language interpretation by way of engaging specialist teachers is the most popular method of practising sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe. Teklemariam (2016:104) posits that Sign Language interpretation in mainstream sign bilingual programmes acts as a means of creating access to communication between signing and hearing children taught by hearing teachers. As such, in Sweden it is used as a communicative resource to facilitate social interaction while in the USA it is framed in terms of related services which include provision of qualified interpreters to support deaf children's linguistic needs in inclusive classrooms (Hult & Compton, 2012:611). Contrary to this ideal and consistent with the results of the current study, it is common that

many of the interpreters even in the USA are teachers of the deaf who never underwent professional Sign Language interpreter training (Roy & Metzger, 2014:168). But proper Sign Language interpretation is impossible without the proper skills (Tecklemariam, 2016:105) which can only be obtained through training and experience. Additionally, even in the USA many interpreters who are employed in educational settings are unqualified or under-qualified (Marschark et al., 2005:39).

With reference to code-switching, Fennema-Bloom (2010:34) noted that it is a good strategy for facilitating learning in inclusive settings since it links prior linguistic knowledge with language and knowledge targeted for acquisition while helping teachers to more actively construct communicative learning events that sustain and increase participation by way of using the two languages. Translanguaging on the other hand goes beyond code-switching to constitute multiple discursive practices (Garcia, 2011:45) and is used in a pedagogic context with what works in order to make meaning and to transmit information (Creese & Blackledge, 2011:109). Garcia (2007), in her work in New York, concluded in favour of translanguaging (ahead of code-switching), since it helps disrupt the socially constructed language hierarchies or reified and linear language categories that are responsible for the suppression of languages of many minoritised peoples (Ortheguy et al., 2015:283; Garcia & Cole, 2014:107) such as the deaf.

5.2.5 Why is sign bilingual education practised as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?

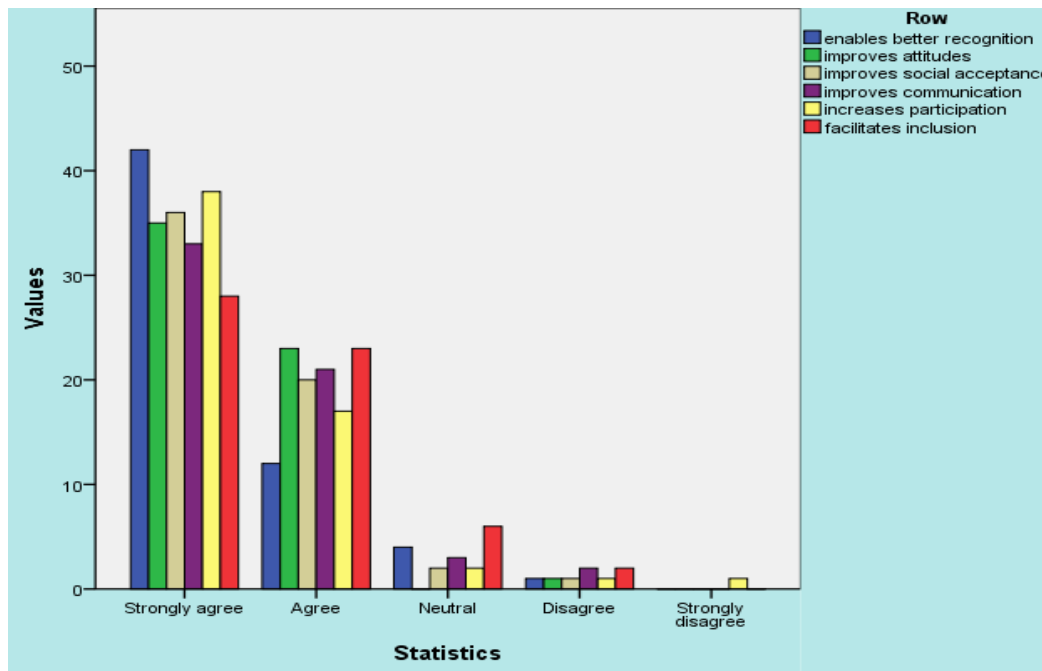


Figure 5.9: Teacher Cited Benefits of Sign Bilingual Education

Most of the teachers generally agreed that many of the benefits of sign bilingual education as a strategy for inclusion cited in literature (Hsing, 2015:3; Marschark, 2012:292; Swanwick et al., 2016:294; Yiu, 2015:4; Tang, 2016:5; Humphries, 2013:19; Mitchner, 2015:52; WFD, 2016:5) also accrued to deaf children in mainstream schools in Zimbabwe. The picture is depicted in figure 5.9. The most pronounced benefits of sign bilingual education as a strategy for inclusion of deaf children are that it enables better recognition of deaf children (56%), increases participation (56%), improves social acceptance (56%), improves attitudes toward deaf children (58%), facilitates communication (56%) and hence enhances or facilitates inclusion (50%) of deaf children in mainstream schools. These benefits of using sign bilingual education as a strategy for inclusion were also confirmed by the administrators and the deaf children themselves.

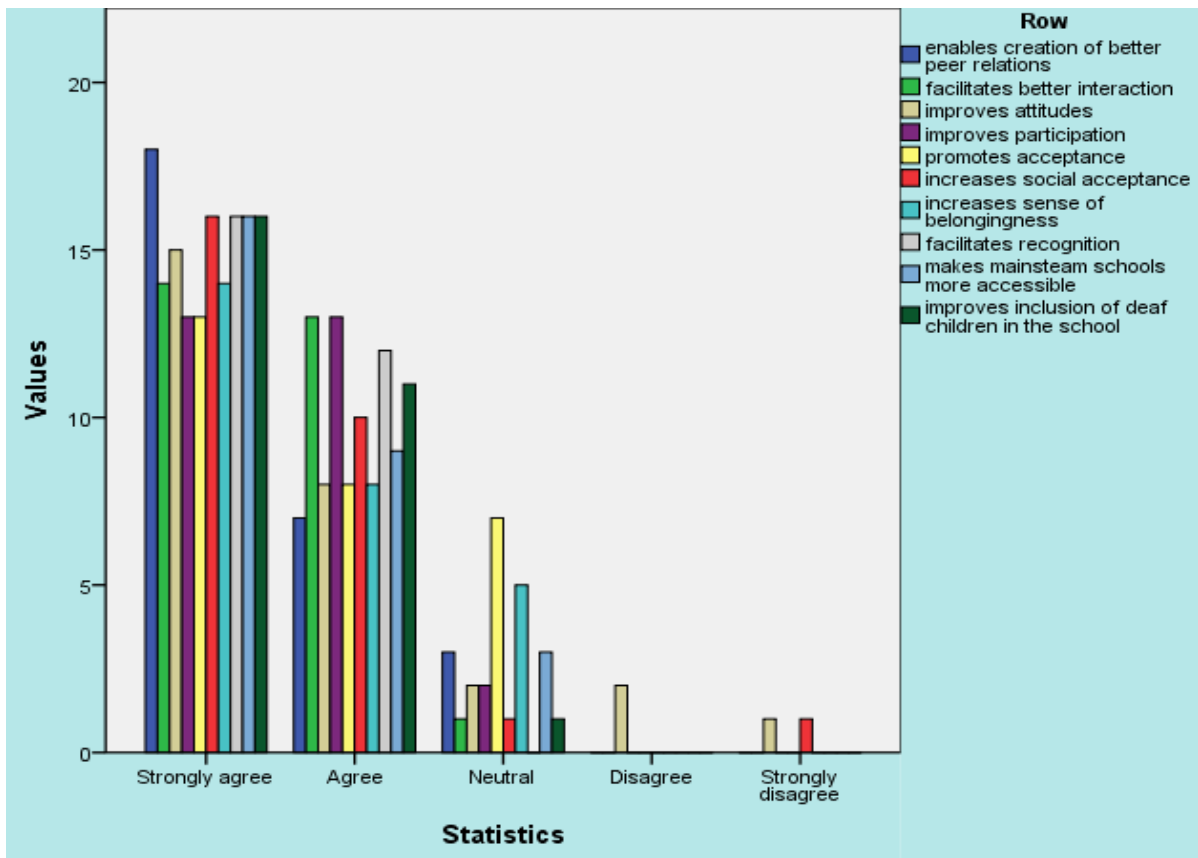


Figure 5.10: Administrator Cited Benefits of Sign Bilingual Education

According to the administrators and as seen in Figure 5.10, generally all the benefits of sign bilingual education as a strategy for inclusion of deaf children in mainstream schools which were cited by teachers apply. Eighty-two point seven six (82.76%) of the administrators who completed and returned the questionnaire were of the opinion that sign bilingual education enabled creation of better peer relations, 89.66% agreed that it increased classroom participation, 93.1% said that it facilitates social acceptance and the same number agreed that it improves interaction in the classroom. Seventy-nine point three one (79.31%) of the administrators said that sign bilingual education as a strategy for inclusion improves attitudes toward the deaf children in mainstream schools while 68.97% agreed that it promotes social acceptance and 72.41% believed it created a sense of belongingness among deaf children. One hundred percent (100%) of the administrators agreed that sign bilingual education led to

the recognition of deaf children and that it resulted in the inclusion of deaf children into mainstream schools.

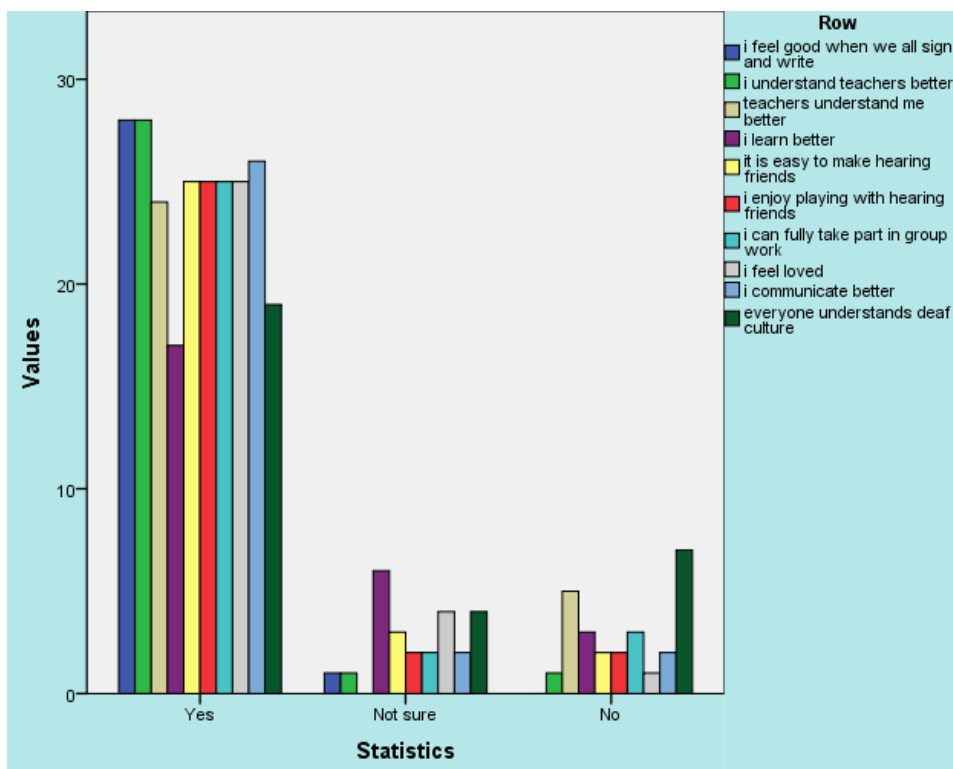


Figure 5.11: Deaf Children Cited Benefits of Sign Bilingual Education

It was critical in this study to obtain the views of deaf children themselves about the benefits of sign bilingual education as a strategy for their inclusion. None of the previous studies on sign bilingual education which this researcher came across ever directly engaged deaf children over the benefits. Figure 5.11 shows that 93.33% of the deaf children who participated in the study said ‘Yes’ sign bilingual made them feel good and made them understand the teacher better. Meanwhile, 90% of the deaf children confirmed that they could perform better with sign bilingual education while 86.67% deaf children in each case indicated that with sign bilingual education it was easy to make hearing friends, it was enjoyable playing with hearing friends, it was possible to fully take part in groupwork and to feel loved and accepted. Eighty-three point three three percent (83.33%) of the children believed that the teacher understood them better when sign bilingual education was used while 60% thought that it enabled

everyone to understand Deaf culture yet 53.33% said they learnt better with the use of sign bilingual education. In effect, the deaf children corroborated the results from both the teachers and the administrators that sign bilingual education does facilitate their inclusion in mainstream schools.

These findings are consistent with the benefits of sign bilingual education reported by earlier studies in countries such as Scandinavia, UK, USA and Hong Kong. According to the studies, sign bilingual education optimizes cultural interchanges by facilitating social interaction and enabling robust and frequent peer interactions that enhance social development, social learning and inclusion (Humphries, 2013:19). It facilitates classroom participation for the deaf (Mitchner, 2015:52; Tang, 2016:5) since it promotes direct communication between the deaf and hearing children and encourages development of both languages (WFD, 2016:5). In other countries, sign bilingual education has been accepted because of its cultural flexibility (Hsing, 2015:3), its ability to provide best opportunities for deaf children to achieve social inclusion (Marschark, 2012:292; Swanwick et al., 2016:294) and to facilitate positive attitudes, peer acceptance and healthier peer interactions (Yiu; 2015:4, Swanwick et al., 2016:2). In comparing these findings, it appears that the current study has established the additional benefits of sense of belongingness and tolerance. However, the issue of cultural flexibility was not dominant in the current study since it emerged that Deaf culture was not being attended to in the practice of sign bilingual education as a strategy for inclusion in Zimbabwe.

5.2.6 What challenges are faced in practicing sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?

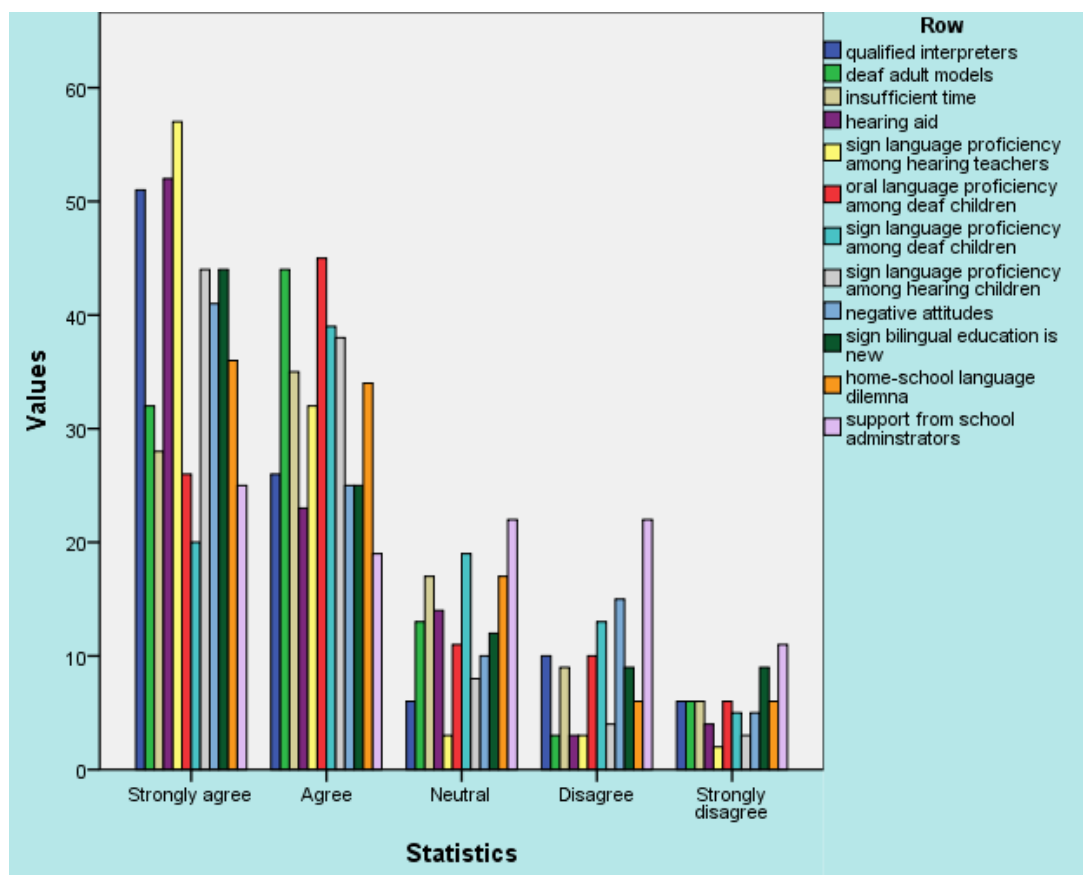


Figure 5.12: Teacher Cited Challenges in the Practice of Sign Bilingual Education

From Figure 5.12, 90% of the teachers cited poor Sign Language proficiency among mainstream teachers and 79% agreed that lack of qualified Sign Language interpreters were some of the major challenges in the practice of sign bilingual education. Similarly, 93% agreed that the challenge was due to lack of Sign Language proficiency among the hearing children while 60% believed that the challenge was poor language proficiency even among the deaf children themselves. Seventy-eight per cent cited lack of hearing technology, 68% thought that sign bilingual education was new and had not been clearly articulated. Meanwhile 65% of the teachers agreed that one other challenge in the practice of sign bilingual education was negative attitudes toward deaf children. The teachers also cited lack of deaf adult models (76%), home-school language dilemma (70%), lack of support from administrators (43%) and time constraints (70%) as the other challenges.

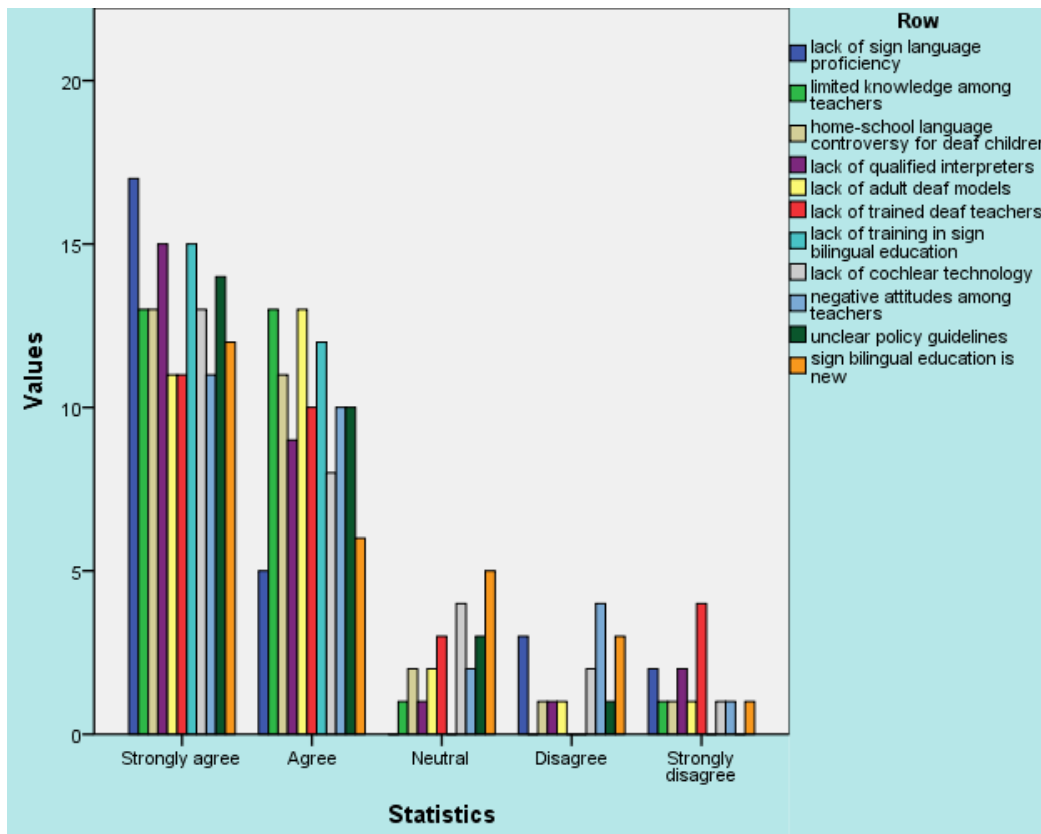


Figure 5.13: Administrator Cited Challenges in the Practice of Sign Bilingual Education

Data shown on Figure 5.13 indicate that all the cited factors are posing challenges in sign bilingual education according to the administrators. All the 100% of the administrators agreed that lack of training in sign bilingual education was a challenge for the practice of sign bilingual education as a strategy for inclusion of deaf children in mainstream schools. As such 93.1% of the administrators said the challenge was actually limited knowledge of sign bilingual education as a strategy for inclusion among mainstream school teachers. The other challenges in the practice of sign bilingual education as a strategy for inclusion which were identified by the administrators include home-school language controversy (86.21%), lack of trained deaf teachers (75.86%), lack of deaf adult models (82.76%) and of qualified Sign Language interpreters in mainstream schools. The administrators also concurred with the teachers that the other challenges were negative attitudes toward deaf children (75.86%), lack of hearing technology (68.97%) and that sign bilingual education was new and not clearly articulated in policies. In addition, 82.76% of the administrators went on to cite unclear policy

guidelines as yet another stumbling block in the practice of sign bilingual education as a strategy for inclusion of deaf children in their schools.

In earlier studies, Kushalnagar et al. (2012:7) and Swanwick (2012:154) found out that negative attitudes toward deaf education are often associated with the impairment view of deafness. The findings of this study also seem to corroborate Humphries et al.'s (2014:31) and Pritchard's (2014:2) earlier assertion that under-informed professionals and parents continue to cloud the practice of sign bilingual education even in countries where it is well established. Previous studies (Mason et al., 2010:35; Humphries, 2013:14; Mayer & Leigh, 2010:178; Musengi et al., 2012:4) also implied lack of Sign Language fluency among hearing teachers, parents and the deaf children themselves as a challenge for inclusion of deaf children, hence for the practice of sign bilingual education. In a related study, Mayer & Leigh (2010:179) also found out that lack of deaf adult models was indeed a challenge for the practice of sign bilingual education in countries where sign bilingual education is well established such as in the UK.

In order to understand the extent to which the benefits derived from sign bilingual education are particularly driven by certain conceptions and practices of sign bilingual education as a strategy for inclusion other than others, mean scores aggregating the scores on all the items representing conceptions and practices to measure the extent of the benefits were generated and Spearman's Rank Order Correlation Coefficients computed for both teachers and administrators respectively. The computed p-values were both significant at 5% level of significance ($p=0.002$ for both) implying that there is significant correlation between sign bilingual education strategy used and the benefits derived. This confirms that indeed sign bilingual education is an efficient strategy for the inclusivity of deaf children in mainstream schools in Zimbabwe. On average, the dominant conceptions and practices of sign bilingual education as depicted by the questionnaire responses are particularly valid and significant.

5.3 SECTION B: QUALITATIVE RESULTS

The study sought to interrogate how sign bilingual education is used as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. In order to confirm the foregoing quantitative results, qualitative results which are mostly direct quotations of individual participants are presented and analysed in this section. Themes were identified from open-ended responses of the questionnaires and broken down into sub-themes as indicated in Table 5.1.

Table 5.1: Themes and Sub-Themes of Sign Bilingual Education as a Strategy for Inclusion in Zimbabwe

Major Theme	Sub-Theme
<ul style="list-style-type: none">• Attitudes	Denial; negative; uncooperative; non-committal
<ul style="list-style-type: none">• Resources	Time; financial; Sign Language interpreters; specialist teachers of the deaf; deaf teachers; hearing technologies
<ul style="list-style-type: none">• Skills	Literacy; language; knowledgeability, communication; home-school language dilemma
<ul style="list-style-type: none">• Policy	Clarity; implementation; enforcement
<ul style="list-style-type: none">• Enrolment	Low numbers; incongruent per capita

5.3.1 How is sign bilingual education conceived as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?

From the qualitative results, sign bilingual education in Zimbabwe was conceived as use of basic Sign Language and writing in which Sign Language is supposed to be the main medium of instruction. It was also believed to be the use of Sign Language, writing, reading as well as blended methods such as fingerspelling and Total Communication (TC) as a way of facilitating communication hence inclusion of the deaf children in mainstream classes. One participant

said, *'My understanding, which I think is correct, is that sign bilingual education involves use of Sign Language, writing and blended methods especially fingerspelling.'* The other one said *'It is the use of basic Sign Language and writing. Children would at times write on the ground or even on self, you know. Yah! Total Communication is also used when you get stuck on Sign Language because you want these children (deaf children) to be accommodated'*. One other participant even declared. *'For me, sign bilingual education is the use of Sign Language in the form of writing, reading and fingerspelling.'*

Conceptions such as use of blended methods are contrary to Enns & Herman's (2011:362) contention that sign bilingual education presupposes and emphasizes Sign Language on the premise that Sign Language is the most natural and accessible for the deaf. As such Garate (2014:38) had argued that sign bilingual education advocates for the development of the natural Sign Languages and the majority spoken/written language not the use of artificial blended methods as reflected in these results. Perhaps the use of blended methods was being perpetuated by limited Sign Language proficiency or the entrenchment of oral methods that had always been dominant in the education of deaf children in Zimbabwe.

In addition, the qualitative results established that the conception of sign bilingual education for which Sign Language is the first language and oral language is the second language for the deaf was not clearly articulated. The study also found that, from the interviews, the equality in status between sign and oral language as proposed by Kermit (2010:159) and Knoors and Marschark (2012:297) was not of consequential value in how sign bilingual education as a strategy for inclusion was conceived in Zimbabwe. One participant even argued, *"What is important is communication that enables inclusion of these deaf children. So the issue of equality of the status and use of the languages is neither here nor there. It is situational. You use more of the language that works at the time."* From this excerpt, sign bilingual education is practiced using translanguaging which entails use of pragmatic strategies to enable communication and achieve inclusion of the deaf children in mainstream schools in Zimbabwe

5.3.2 Which methods are used to practice sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?

Qualitative data confirmed that the most popular method of practicing sign bilingual education in Zimbabwe was Sign Language interpretation. One teacher narrated, *'In terms of practice of sign bilingual education, specialist teachers are used as Sign Language interpreters but they are not well versed because like I do teach math and I am not sure whether they are able to correctly interpret all the concepts. You know, I even doubt their mathematical aptitude after all.'* A specialist teacher agreed and explained, *'One problem I often encounter when interpreting is that at times I get stuck when I suddenly realize that I do not have an appropriate sign for a concept.... Say, in History, for instance, I think Sign Language interpretation needs specialized training on its own'*. Another specialist teacher in the same focus group interview weighed in, *'The other problem with Sign Language interpretation, in addition to us not being fluent, is that some mainstream teachers are not comfortable when you sit in their lesson to interpret their lesson delivery whatever.'*

Further, while quantitative data showed that apart from Sign Language interpretation, code-switching and Sign Language translation were also used for practicing sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe, further probing in the qualitative phase of the study revealed that translanguaging was the most dominant of these. One teacher elaborated *'I had always thought that I was using code-switching. But from this interaction, I now realize I have actually been using translanguaging.'* The other narrated, *"I mostly use translanguaging because using code-switching between sentences is at times difficult depending on the length of the sentences. Of course I do use code-switching at times. Ah... about translation I don't think anyone of us here can claim to use it. It is complex I think."*

From these excerpts, it is clear that while Sign Language interpretation is used in aiding the practice of sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe, it is not efficiently done. From the results, it is clear again that other methods such as Sign Language translation and transliteration were not used to practice sign bilingual education. These results also show that specialist teachers who were, however, not trained Sign

Language interpreters were used. Namukoa (2012:15) does recommend the use of Sign Language interpretation in sign bilingual education since it bridges gaps created by linguistic isolation of deaf children. However, Boeri (2015:36) asserts that Sign Language interpreters should be trained professionals in their own rights. The results of this study are nevertheless corroborated by Roy and Metzger (2014:168) who also found out that even in the USA, Sign Language interpreters were teachers of the deaf who never underwent training in Sign Language interpretation.

The qualitative results further revealed that although some administrators claimed that as a matter of practice their schools sent the specialist teachers of the deaf to a local special school once a week so that they could gain exposure to native Sign Language and Deaf culture, the teachers themselves flatly refuted the claim. They said they did this on their own volition but many of them reported that they had given up on the practice due to prohibitive travelling expenses. Only one school indicated that they even used to regularly send the deaf children to the special school and at times invited some deaf adult models as means of exposing the children to Deaf culture. However, the school had also called off the practice at the time of the study.

The general feeling particularly among the administrators was that use of adult deaf models would 'contaminate' the children. According to one administrator, *'We, at times, thought that exposing the deaf children to deaf adult models would be a good idea but there is a general fear that these could 'contaminate' our children.'* However, a specialist teacher argued, *'Deaf adult models, for instance those who are doing well in life, like this mechanic who is our former student, can even inspire our young children.'* Another teacher added, *'The other problem is that there are no deaf teachers for instance, who can teach both the deaf and hearing children proper Deaf culture. None of us specialist teachers can claim to know proper Deaf culture you see. The ideal would be to have two specialist teachers per school, one hearing and one Deaf. But you know with the economy of Zimbabwe, this could be a great challenge.'* This contradicts Swanwick and Gregory's (2007:7) opinion that deaf adult models can act as potential mentors

for the deaf children to develop their identities, esteem and confidence in sign bilingual environments.

These excerpts, however, seem to suggest that deaf children are not exposed to Deaf culture as proposed by Hsing (2015:3) who argues that sign bilingual education exposes both hearing and deaf children to each other's cultures. For the training of parents as a practice in sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe, the qualitative results showed that the kind of training which was noted in the quantitative phase was scanty, irregular and was not specifically targeted at sign bilingual education as a strategy for inclusion. This is unlike in Norway where parents who choose the sign bilingual option for the education of their deaf children are provided a forty week long course in NSL in order to obtain basic skills in the use of the language for free (Kermit, 2010:159). This variance may be due to factors such as lack of resources; lack of political will or commitment and the fact that sign bilingual education is still extremely new in Zimbabwe.

5.3.3 Why is sign bilingual education practiced as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?

This sub-question was aimed at inquiring on the benefits of sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. One administrator commented, *'Sign bilingual education has great benefits.... It is a very good strategy for ensuring inclusivity of deaf children. You see, even the attitude of mainstream teachers towards these children (deaf children) have greatly improved. When sign bilingual education is used, these teachers are able to accommodate them (deaf children).'* A specialist teacher also argued, *'With the practice of sign bilingual education everybody comes to realize that communication with deaf children is possible. I think it is the only practical way of achieving inclusion of deaf children which had been elusive for a long time.'*

Another administrator said, *'Sign bilingual education enables participation of deaf children even in other outdoor educational activities such as sport and the Arts Festivals that are part*

of the new curriculum as you may know.’ Yet another administrator elaborated ‘With the practice of sign bilingual education, hearing teachers and children come to realize that after all, there is a way in which to communicate with deaf children and that it is possible to teach them and to learn with them and so on.’ Even deaf children themselves confirmed that they felt loved and accepted when sign bilingualism was used. One senior deaf student expressed the following through use of sign bilingual skills: ‘How boring it is when people talk, talk and when they know pretty well that you are deaf. But when they sign and write I am happy, I understand and I see that they recognize me as part of them.’

One can deduce from these excerpts that the benefits of sign bilingual education as a strategy for inclusion in Zimbabwe include improved communication, interaction, participation, social acceptance, tolerance, belongingness and hence inclusivity. The results are expositive of the fact that sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe made hearing teachers and children realize that it is possible to communicate and interact with deaf children after all. Another finding was that sign bilingual education leads to positive attitudes towards deaf children in mainstream schools. It leads to a decrease in frustrations often experienced by deaf children in mainstream classrooms. According to the results, sign bilingual education also facilitates better social acceptance and improved tolerance and classroom participation of deaf children. Many of these benefits were also noted by (Swanwick et al., 2016:294; Knoors & Marschark, 2012:292) in that sign bilingual education provides the best possible opportunities for the deaf children to achieve social inclusion, educational access and personal success hence making it logical to be located within the context of inclusion

5.3.4 What challenges are faced in practicing sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?

Despite the many benefits of sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe that were revealed by the study, some challenges were also identified. Denial attitude and lack of cooperation among parents coupled with negative attitudes of

some administrators and mainstream teachers. *'You see parents continue to display a denial attitude which tends to cloud the practice of sign bilingual education. Some parents do not want to hear about their deaf children being taught Sign Language because they still hold hope that, one day their child would speak. I don't think they even recognize that sign and oral languages can function together'* narrated one teacher. Another teacher said, *'The other major challenge is the negative attitudes exhibited by our administrators towards anything to do with deaf children. They seem to perceive these children especially those in the examination classes as a threat to the school's academic competitiveness.'* The main source of such attitudes could be the old impairment view of deafness as a medical condition that has a technological solution for which Kushalnagar et al. (2012:7) designate as perhaps the strongest challenge faced by sign bilingual education.

Related to the negative attitudes was lack of knowledge of sign bilingual and a non-committal attitude by the Ministry of Primary and Secondary Education and the Public Service Commission towards the practice of sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. On this issue one participant commented, *'Yes sign bilingual education is there but is not clearly specified in policy documents.'* Another participant blamed the whole situation on policy implementation and enforcement. The participant commented; *'While policies are good and are supportive of sign bilingual education in Zimbabwe, implementation and enforcement procedures are unclear and even the term sign bilingual education is somehow avoided.'* This suggests that many of the challenges facing the practice of sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe stem from lack of clarity and enforcement of policies on sign bilingual education. Humphries et al., (2014:31) identify under-informed professionals and hearing parents due to lack of training and experience as another major challenge for the practice sign bilingual education.

Limited time particularly in view of the congested new curriculum was another identified challenge. *'Using sign bilingual education works well as a strategy for inclusion when you have adequate time. For one it is time consuming. So to catch up especially with the advent of the*

new curriculum which is too congested, I am at times tempted to resort to oral methods. But of course I know that this is unfair to the deaf...' said one specialist teacher. This was a finding unique to this study since the concept of the 'new' curriculum was a recent phenomenon in Zimbabwe then.

Poor literacy skills among deaf children also featured prominently as a challenge affecting the practice of sign bilingual as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. Some young deaf children were reported to come from home with either meaningless home signs or no language at all. A specialist teacher quipped, *'Do you know that the greatest challenge faced in the practice of sign bilingual education in general is that some deaf children themselves are not fluent in Sign language? Some come from home with no Sign Language skills only to be taught by teachers who are not native users of Sign Language themselves. Even as specialist teachers we are not completely fluent in Sign Language you know.'* Another teacher in the same focus group interview added, *'This situation is worsened by the issue of language dilemma whereby the oral language of the home for instance differs from that used at school.'* According to Humphries (2013:14), it is possible to find deaf children who are not fluent in either language. The author says that this causes a challenge for the practice of sign bilingual education. Mayer and Leigh (2010:178) also observe that it is often the case that deaf children begin school with little or no proficiency in Sign Language, or in some cases in any language at all.

The foregoing suggests that one of the main challenges faced in the practice of sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe is that the deaf children at times cannot efficiently read, write or even sign. This challenge is perpetuated by poor Sign Language competency among teachers and administrators themselves as exhibited by quantitative results too. Lack of financial resources or preparedness to train deaf teachers is also a challenge for the practice of sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. The participants bemoaned lack of training and staff development of teachers in sign bilingual skills. In a similar fashion, Pritchard (2014:2) posits that the biggest challenge for sign bilingual

education is whether the mainstream hearing teacher is fluent and familiar with sign bilingual teaching methods or not.

One participant commented, *'If we had deaf teachers it was going to be better. I only know of one deaf teacher in Zimbabwe who teaches at this special school which we were telling you about.'* The other quickly interjected, *'But we hardly have deaf people obtaining 5 'O' Levels including English Language and Mathematics required for teacher training.'* Another answered, *'Perhaps we need affirmative action because sign bilingual education can only work best with the involvement of deaf teachers, otherwise colleges (teacher training) should have a component of sign bilingual education and us practising teachers should continually have staff development programmes.'* According to Tang (2016:9), the success of sign bilingual education programmes in Hong Kong are in effect attributed to the inclusion of a deaf teacher who serves as a Sign Language and social model not only for the deaf but also for the hearing children as well. Hsing (2015:2) then reports that in Hong Kong and the Netherlands, the roles of the sign bilingual model teachers are such that the hearing and the deaf teachers complement each other without repeating each other in the classroom.

On further probing, many of the administrators revealed that by indicating in the questionnaire that deaf teachers were used, they meant instead that it would be ideal to hire deaf teachers if sign bilingual education was to be fully practiced and that the hearing technologies they referred to were no longer accessible for deaf children due to lack of donations after all. Administrators were also unanimous that the minority nature of the deaf children made it difficult to commit resources, time and effort to sign bilingual education as a fully-fledged school wide programme. On the minority nature of deaf children, Tang (2016:3), Hermans et al. (2014:420) and Hsing (2015:2) earlier on each found out that the limited number of deaf children was a serious challenge for the practice of sign bilingual education.

Lack of qualified sign language interpreters was another challenge. Specialist teachers were used for Sign Language interpretation but none of them were qualified Sign Language

interpreters. The results confirm Musengi and Chireshe's (2012:113) conclusion that the Sign Language interpretation used in Zimbabwe is not real. On the issue of using qualified Sign Language interpreters which emerged during the quantitative phase of the study, it turned out that the participants meant use of the 'qualified' specialist teachers as Sign Language interpreters to facilitate the practice of sign bilingual education as a strategy for inclusion.

5.4 INTEGRATED RESULTS

In this study data mixing was done at the data interpretation stage. Cresswell and Plano Clark (2007) define mixing in mixed methods research as meaning either that the qualitative and quantitative data are actually merged on one end of the continuum, kept separate on the other end of the continuum or combined in some way between these two extremes. In this study, the researcher kept the two sets of data separate but connected. Cresswell (2009:208) implores that 'connected' in mixed methods research means that, a mixing of the quantitative and qualitative research is connected between a data analysis of the first phase of the research and the data collection of the second phase of the study. At the same time, the mixing of data in this research consisted of integrating the two data sets by actually merging the quantitative with the qualitative data in a complementary fashion. This was done by using qualitative data to complement quantitative data.

It is reasonable to note that the cultural diversity that exists in Zimbabwe could promote the practice of sign bilingual education. The recognition of the legitimacy of plurality of cultures as evidenced by the recognition of 16 official languages (Constitution of Zimbabwe, 2013) is clear testimony of the prospects for practising efficient sign bilingual education as a strategy for inclusion in the country. The existing policy frameworks especially those that support the use and teaching of Sign Language could also be reviewed in line with the Sign Bilingual Education Framework for Zimbabwe proposed elsewhere in this thesis. This will ensure that inclusion of deaf children in mainstream schools is achieved and reinforced. However, the

constrained socioeconomic environment is likely to mitigate the implementation of the model that has been proposed based on the integrated results.

From both quantitative and qualitative data, results show that sign bilingual education in Zimbabwe is conceived as use of both sign and oral language supported by the use of blended methods such as fingerspelling and Total Communication. The participants rightfully pointed out that oral language is in the form of reading and writing. Other factors involved in the conception of sign bilingual education such as equality of status between the two languages and Sign Language being the first language and oral language being the second language were not clearly conceived in both phases of the study.

In terms of the methods that are used to facilitate sign bilingual education as a strategy for inclusion, both sets of data pointed to Sign Language interpretation as the main one. This is despite the fact that qualitative results revealed that is no properly done specialist teacher who were not professional Sign Language interpreters were used. Translanguaging was the other popular method of facilitating the practice of sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe which featured eminently in both phases of the study. The use of blended methods such as fingerspelling and Total Communication were also found to be part of the methods for practicing sign bilingual education in mainstream schools.

The major benefits of sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe that were common to both phases of the study were increased social acceptance, peer interaction and classroom participation. The study further revealed that sign bilingual education led to better communication and positive attitudes towards deaf children. Unique to this study was that sign bilingual education as a strategy for inclusion leads to engendered tolerance and social development and generates a sense of belongingness for deaf children. Both phases consequently confirmed that sign bilingual education facilitates the inclusion of deaf children in mainstream schools.

Despite the benefits that were revealed in the two phases of the study, there were also challenges that were noted in both cases. These challenges included negative attitudes towards sign bilingual education, poor sign language proficiency, lack of training and staff development in sign bilingual skills and lack of deaf teachers and deaf adult models who could teach proper Sign language and Deaf culture to both deaf and hearing children as well as lack of qualified Sign Language interpreters. Unique to this study was home-school language controversy necessitated by the multiplicity of languages in Zimbabwe coupled with engendered language attitudes. There was also a noticeable lack of literacy as well as Sign Language skills among deaf children themselves. The other common and dominant challenge was that sign bilingual education as a strategy for inclusion of deaf children is new but is not clearly articulated in policy guidelines.

5.5 CHAPTER SUMMARY

This chapter firstly presented, analysed and discussed demographic data of teachers and administrators that are significant to sign bilingual education as a strategy for inclusion. The data mainly involved qualification, area of specialisation and experience with deaf children. Secondly, the chapter dealt with quantitative results that were generated from questionnaire responses and analysed using SPSS. The third part of the chapter explored qualitative data obtained via focus group and personal face-to-face interviews while the third part integrated the quantitative and qualitative results. The results were discussed in relation to the first four research questions. The next chapter draws conclusions, proffers recommendations and proposes a framework for the practice of sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. The proposal of the framework is meant to respond to the fifth research question of the study. The chapter also assesses limitations that might have characterised the study.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

The foregoing chapter presented data and provided a detailed analysis and interpretation of results of how sign bilingual education is used as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. The results were presented and discussed in three phases, that is the quantitative, qualitative and data integration phases. In the current chapter, which is the last of the study, a summary is provided, conclusions drawn and recommendations proffered. A framework for sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe is also proposed in this chapter. Ultimately, limitations that characterized the study are briefly examined and strategies for minimizing them are put forward. The chapter closes with final remarks and a chapter summary.

6.2 SUMMARY

This study was aimed at coming up with an exposition of how sign bilingual education is used as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. Chapter one of the study provides the background to the study, articulates the statement of the problem and formulates the objectives and research questions that guided the study. The chapter also presents the general framework of how the study was to be accomplished by briefly reviewing literature, proposing the theoretical framework, identifying methodological frames and defining key terms. This study is premised on the mixed methods research paradigm and guided by the sequential explanatory design. The research questions were used to guide literature review, discussion of results and ultimately to draw conclusions.

Chapter two examines wide ranging international literature relating to sign bilingual education as a strategy for inclusion of deaf children in mainstream schools. Literature that was reviewed in the chapter is about the conceptions, rationale, foundations, international

and best practices as well as challenges of sign bilingual education as a strategy for inclusion. The chapter also contextualizes sign bilingual education within inclusive education discourses. Literature review was continued into chapter three which examines the theoretical framework of sign bilingual education. Cummins' Linguistic Interdependence Theory which is underpinned by the idea of the Common Underlying Proficiency (CUP) was identified as the major premises for this study. Various models and practices related to this study were examined in the context of Cummins' theory in Chapter three.

In chapter four, the methods and methodologies that guided the study are articulated. The mixed methods paradigm which is framed within the philosophy of pragmatism was identified as the most appropriate for this study. The chapter also justifies the sequential explanatory design which was used for this study. It is in this chapter that instruments are also identified and validation processes explicated. The chapter also outlines data presentation and analysis methods and reviews the ethical guidelines that punctuated the study. Chapter five provides a detail analysis and interpretation of the results as per the four sub-questions. The fifth sub-question which elicited for a theoretical framework for sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe is addressed in the current chapter. Quantitative results were first presented and for confirmatory purposes, qualitative results were then presented next. The two sets of results were integrated to provide a holistic picture of how sign bilingual education is used as a strategy for inclusion of deaf children in Zimbabwe in the same chapter. Consequently, the current chapter provides the summary of the study report draws conclusions and proffers recommendations based on the findings of the study. The chapter also presents the proposed framework and examines the limitations that tended to characterize the study. Strategies that were used to mitigate these limitations are also put forward in this chapter which closes with concluding remarks and a chapter summary.

6.3 CONCLUSIONS

On the question of how sign bilingual education is conceived as a strategy for inclusion of deaf children, the study concluded that the conception did not constitute real sign bilingual

education in its entirety. This is because the conception was founded on beliefs that oral methods such as fingerspelling and Total Communication were dominant in the practice of sign bilingual education. In addition, the study concluded that since there was limited exposure of deaf children to Deaf culture within the mainstream schools, the conception of sign bilingual education as a strategy for inclusion was limited in scope. Such a conception was also seen as posing challenges to the practice of sign bilingual education. There was need for conceiving sign bilingual education as constituting use of a natural Sign Language and a dominant oral language, equality of status of the two languages and respect for and exposure to Deaf culture (**See 2.3**). Although conditions that supported the proper conception of sign bilingual education existed in the Zimbabwe Constitution and several education policy circulars (**See 2.10.6.3**) the policy guidelines lacked specificity in terms of how exactly sign bilingual education should be used as a strategy for inclusion of deaf children.

With regards to methods used to practice sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe, the study concluded that while internationally acclaimed methods such as Sign Language interpretation and translanguaging were used, they were not well polished and supported. The methods were not policy driven and were not prioritized in training and staff development programmes. The Sign Language Bill did imply support of Sign Language interpretation services in schools but since it was not a fully-fledged law then, its provisions were not significant in promoting the practice of sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe. There were no deliberate efforts to explore other methods of practicing sign bilingual education as a strategy for inclusion such as translation which tends to embrace ICT (**See 3.5.5.2**) and transliteration. Other methods such as code switching were also not properly conceptualized and used.

The benefits of sign bilingual education all pointed to facilitation of inclusion of deaf children in mainstream schools in Zimbabwe. However, these benefits were not totally evident due to policies that were not overly specific about how sign bilingual education could be used as a strategy for inclusion. The limited scope of the conception of sign bilingual education could also have clouded the wholesome benefit of the strategy. This can be further explained by

the omission of such important attributes in the conception of sign bilingual education as exposure to and recognition of both the Deaf and the hearing cultures, equality of the status of the two languages and the L1 nature of Sign Language in this arrangement. The study concluded that if sign bilingual education were to be properly conceived and practiced it could be the best strategy for achieving the inclusion of deaf children in mainstream schools in Zimbabwe.

According to the results of this study, the challenges of the practice of sign bilingual as a strategy for inclusion of deaf children in Zimbabwe seem to have stemmed from lack of strong policy backing, negative and non-committal attitudes, ignorance due to lack of training and poor arrangements for the full implementation of the strategy. From this, the study further concluded that many of these challenges were in existence because there were no deliberate strategies for their mitigation. In other words, many of the challenges were a result of lack of an operational framework in the country hence the need to propose such a framework in this study. In the ultimate, the study concluded that despite the challenges, sign bilingual education as a strategy for inclusion of deaf children which is practiced through unskilled translanguaging and Sign Language interpretation together with fingerspelling and TC in Zimbabwe holds the greatest potential for successful inclusion of deaf children which has been elusive for a long time. However, the limited scope in the conception of sign bilingual education had created challenges for its practice which hitherto could be mitigated.

6.4 RECOMMENDATIONS

Following on the conclusions of this study, recommendations were proffered. These recommendations relate to issues of training, practice, policy and further research. Training and policy issues dominated the findings of the study with participants implying that there were gaps that existed in the practice of sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe. Therefore, the purpose of these recommendations is to close these gaps by proposing mitigatory actions that would improve the practice of sign bilingual

education as a strategy for inclusion of deaf children in Zimbabwe. These recommendations formed the basis of the proposed framework which is presented later in this chapter.

6.4.1 Recommendations for Training and Staff Development

The study recommends that teacher trainees and practicing teachers be trained in sign bilingual education skills. Trainee specialist teachers of the deaf in particular should be trained in native like Sign Language and Deaf culture while their mainstream counterparts are taught basic Sign Language and are exposed to the practice of sign bilingual education as a strategy for inclusion. A deliberate affirmative action should be put in place for the training of deaf teachers for which English Language should not be a pre-requisite for teacher training. Practicing teachers in schools that use sign bilingual education should be staff developed in the skills and practice of the strategy. Training in basic Sign Language and other sign bilingual skills should be extended to administrators of schools that practice sign bilingual education. Development of skills in methods such as translanguaging and code switching should be part of this training. There should also be a system of training and credentialing Sign Language interpreters instead of relying on unskilled specialist teachers. Meanwhile, parents must be given free Sign Language training and be conscientised in sign bilingual education skills. Training of parents for free is in tune with the UN declaration and the proposals of the WFD (See 2.11.2). All hearing partners and stakeholders should be sensitized on Deaf culture, hence on sign bilingual education through training and awareness campaigns that should be intensified by the SPS & SNE Department in the Ministry of Primary and Secondary Education.

6.4.2 Recommendations for Practice

Related to the recommendations for training and staff development of teachers, school administrators and parents are the recommendations for embracing best practices in line with the current international dispensation. Thus, over and above training, there should be deliberate pre and post-natal assessment of deafness which should then manifest in early exposure to sign bilingualism. Co-teaching which entails that deaf children using sign bilingual education be taught by one deaf and one hearing teacher should be introduced. ICT should

also be embraced, for instance, through use of computer software based translation methods (See 3.5.5). Co-enrollment should be capacitated and supported, for instance, through government sponsorship of resources for ensuring that all deaf children from a larger catchment area have access to a school devoted to sign bilingual education in order to achieve a 1:3 recommended for effective sign bilingual education to be practised. This should be coupled with deliberate teaching of Sign Language and Deaf culture to deaf and hearing children alike. In line with this, special schools for the deaf should be converted to resource centers to support sign bilingual education and inclusion. Deaf communities should be sensitized and adult deaf models that are attuned to the expectations of the school system should be trained and involved in Deaf culture awareness campaigns for both deaf and hearing. In addition, home-school partnerships should be strengthened as part of streamlining of sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe. In other words, a multi-stakeholder approach strategy should be adopted.

6.4.3 Recommendations for Policy Review

The study further recommended that policies on sign bilingual education should express the term sign bilingual education and clearly articulate its conception, and strategies for its practice. Clear enforcement procedures should be promulgated in the policies. In addition, financial resources for such deliverables as training of both professionals and parents and financing of transport to facilitate co-enrolment should be provided for in the policy framework. The policies should also guide the use of sign and oral language, recognition of Deaf and hearing cultures and specification of the L1, - L2 nexus of the languages in terms of equalisation of their statuses. The policy should promote the training of deaf teachers through deliberate relaxation of entry requirements particularly that of English Language. Sign Language proficiency should instead be a basic requirement in place of English Language.

6.4.4 Recommendation for Further Research

Based on the finding that sign bilingual education as a strategy for inclusion is relatively new in Zimbabwe and is not clearly articulated, there is need for further research on the subject.

A similar research of a larger dimension is required so that findings could be better generalized. Other researchers in Zimbabwe are implored to directly use the term sign bilingual education in their studies in order to popularize the term and its conceptualization and practice as a strategy for inclusion of deaf children.

6.4.5 Recommendation for a Sign Bilingual Education Framework

In order to intensify and adopt sign bilingual education as the main strategy for inclusion of deaf children in Zimbabwe, an operational framework has to be put in place. The framework is, therefore, proposed in Figure 6.1. The framework presumes that effective sign bilingual starts with pre-, peri- and post-natal assessment of deafness supported by a strong referral system. This assessment manifests in early exposure to sign bilingualism that is at home and ECD level. For those identified late, various entry levels into sign bilingual education will be recognised. Relevant stake holders including parents will be involved and the conception, methods of practice and best practices will be internalized by these stakeholders and be part of the comprehensive sign bilingual education policy and training framework in Zimbabwe. Zimbabwe Sign Language and oral language as well as Deaf and hearing cultural inputs will be ensured through use of Deaf culture sensitive teachers and deaf adult models. Through such a network, the proposed framework pre-supposes output benefits that would ultimately lead to successful inclusion of deaf children, improved academic performance and hence holistic child development for both hearing and deaf children.

6.4.5.1 Possible Strengths and Limitations of the Framework

The strengths of this framework lie in its multidisciplinary, multicultural and its technological orientation. Meanwhile, one of the most obvious challenges the framework is likely to experience relate to the constrained socioeconomic environment within which it was proposed. It would be difficult for instance for the country to afford sophisticated hearing technologies to facilitate sign bilingual education practice. Going forward, the government of Zimbabwe would need to revamp its economy so that it would increase funding of inclusive education for the benefit of deaf children when the framework is implemented.

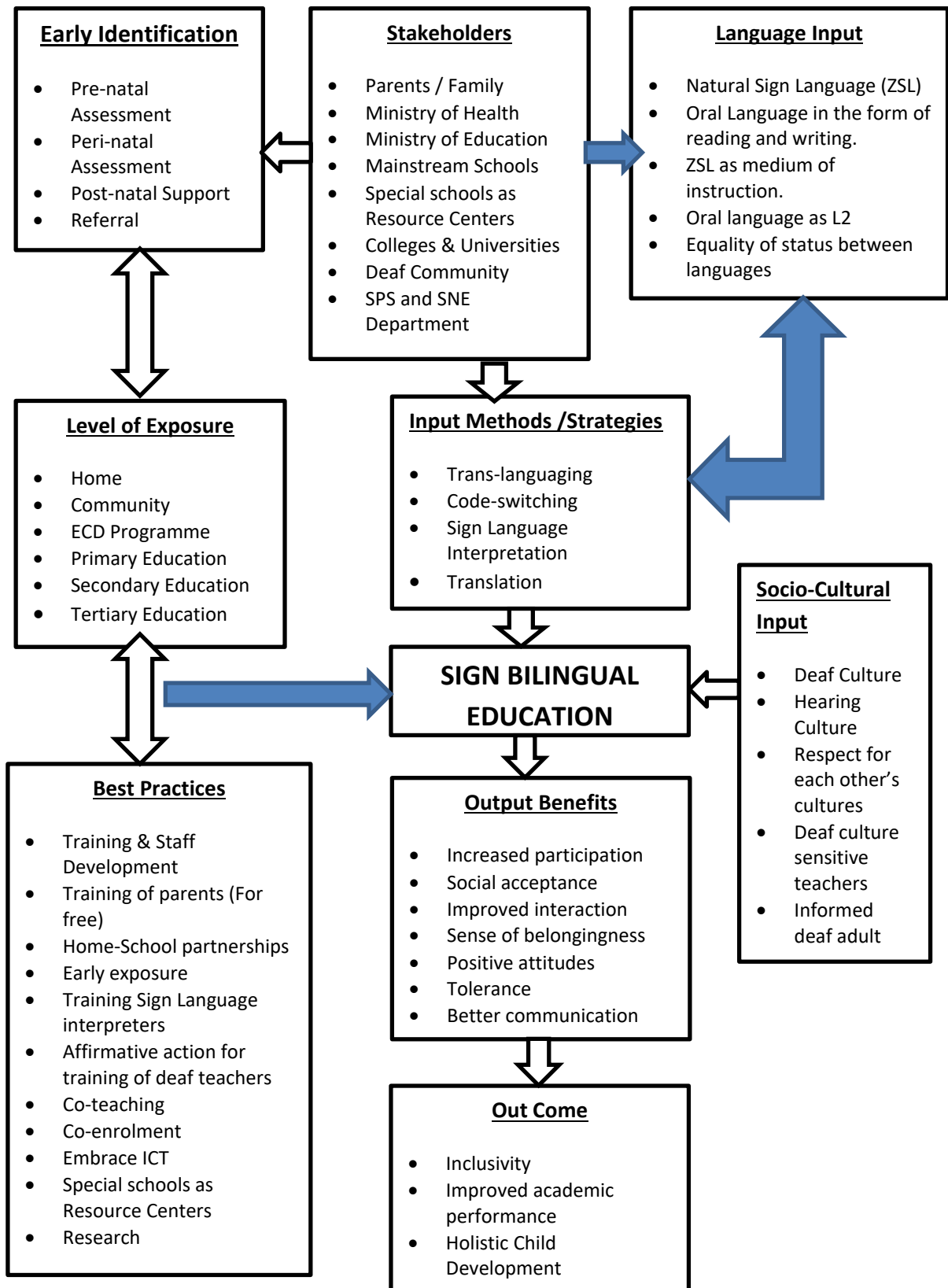


Figure 6.1: Sibanda's Framework for SBE as a Strategy for Inclusion in Zimbabwe

6.5 LIMITATIONS OF THE STUDY

One major limitation of this study was the sample size which was smaller than otherwise could be ideal. The sample was obtained from one out of 10 provinces of Zimbabwe. The ideal sample size could have been obtained across all the 10 provinces. One consolation on the issue of sample size was that Bulawayo had the second highest number of schools that used sign bilingual education after Harare while many of the provinces had relatively fewer of such schools. Triangulation and use of multiple sources which are inherent in mixed methods research were used to ensure in-depth analysis and corroboration of data types to mitigate biases often associated with the use of smaller samples (Silverman, 2010:63). In addition, the researcher conducted interviews to the point of data saturation (Fusch & Ness, 2015:1411) and used the same interview guide for the same category of the sample to ensure consistency. Unit analysis was also used during qualitative data analysis to generate an in-depth understanding of how sign bilingual education was used as a strategy for inclusion of deaf children in Zimbabwe as a way of minimizing sample size effect.

The other limitation was related to time constraints. Creswell et al. (2011:8) confirm that mixed methods research by its very nature requires extensive time and resources to carry out the multiple steps involved. Rigorous quantitative analysis as well as persuasive qualitative procedures that were used for case to case thematic development and generation of cross-case comparison (Cresswell, 2012:543) needed more time and concentration. At the same time, the researcher had to contend with convincing some administrators and teachers who felt that they had no time to respond to the questionnaire and also be involved in interviews. The issue of time constraint on the part of the researcher was dealt with by way of using a manageable instead of a very large sample which could have needed even more time to deal with. For participants, the researcher maintained good rapport with them and consistently explicated the need to gain an in-depth understanding of sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe from their own point of view since they were the main stakeholders.

Just as Cresswell (2012:543) puts it, the other limitations were attributable to the methodology used. These included the challenges of determining the quantitative aspects that needed follow up in qualitative phase, re-selecting participants for the qualitative interviews without causing anxiety, deciding on the qualitative questions to ask and maintaining a consistent unit analysis. By using the same instrument for all the participants in the same category of the sample and by coding these instruments as a way of ensuring anonymity while at the same time remaining conscious of unit responses were strategies used to mitigate these limitations. Conflicting results were let to flow and then resolved at the integration phase.

The possibility of subjectivity linked to the use of qualitative research methods was eminent in the qualitative phase of this study. Alshenqeeti (2014:43) admits that, while interviews which were used at the qualitative stage of this study are most central, revealing and enjoyable qualitative methods, they have a propensity for subjectivity. That is, the closeness of this researcher to the participants and to the topic could have lead to biased interpretation of results. This subjectivity according to Hofisi et al. (2014:62) has an impact on the reconstruction of experiences by the participants. One reason for methodological triangulation and thereby using multiple instruments was to limit subjectivity. The use of different methods in concert compensates for their individual limitations and and exploits their respective benefits (Shenton, 2004:65).

The paucity of literature on sign bilingual education as a strategy for inclusion of deaf children mainly in Zimbabwe and other African countries was one other limitation of the study which was quite frustrating. In order to mitigate this limitation, the researcher consulted wide ranging international literature and transcended issues to the current study. During the discussion of the results of this study, the researcher compared with the previous international studies and attempted to explain all the variances noted.

6.6 FINAL REMARKS

Literature is replete with evidence pointing to the benefits of sign bilingual education. While most of the literature relates to literacy development and academic performance benefits, there are strong implications for sign bilingual education as a strategy for inclusion. Most of the literature relates to Scandinavian countries, the UK, the USA, Canada, Italy and Hong Kong. When it comes to Africa, literature on sign bilingual education is very scarce hence the need for this study which could help in closing the existing void in literature. The current study interrogated how sign bilingual education is used as a strategy for inclusion of deaf children. Although the study found gaps in how sign bilingual education is conceived and practiced in Zimbabwe, it showed that the practice has great potential for achieving the inclusivity of deaf children in mainstream schools. Should the proposed framework be put in place, this research envisages that sign bilingual could be popularized through further research and its practice could be improved for maximal inclusion of deaf children in mainstream schools in Zimbabwe.

6.7 CHAPTER SUMMARY

This chapter, which is the last of this research report, provided a recap of the study chapter by chapter. The chapter also drew conclusions guided by the sub-questions as well as the main research questions. The conclusions in this chapter explored answers to the research questions based on the findings of the study. The chapter further proffered recommendations meant to close gaps in the practice of sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe. The recommendations were also meant to mitigate some of the many challenges that were part of the findings of this study. Based on these recommendations, Sibanda's Framework for the Practice of Sign Bilingual Education as a strategy for Inclusion of Deaf Children in Zimbabwe was presented and explicated. This was followed by an outline of the limitations of the study and the mitigatory strategies thereof. The chapter closed with general remarks on the efficacy and need for sign bilingual education as a strategy for inclusion of deaf children.

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Appendices

Appendix A

UNISA COLLEGE OF EDUCATION ETHICS REVIEW COMMITTEE

2017/05/17

Dear Mr Sibanda,

REC Ref#: 2017/04/12/32025769/18/MC
Name: Mr P Sibanda
Student#: 32025769

**Decision: Ethics Approval from
2017/05/17 to 2022/05/17**

Researcher: Name: Mr P Sibanda
Telephone#: +2639884060
E-mail address: 32025769@mylife.unisa.ac.za

Supervisor: Name: Prof LDN Tlale
Telephone#: 012 429 2064
E-mail address: tlaled@unisa.ac.za

Working title of research:

**Sign bilingual education as a strategy for inclusion of deaf children in
Zimbabwe**

Qualification: D Ed in Inclusive Education

Thank you for the application for research ethics clearance by the UNISA College of Education Ethics Review Committee for the above mentioned research. Ethics approval is granted for 5 years.

The low risk application was reviewed by the College of Education Ethics Review Committee on 2017/05/17 in compliance with the UNISA Policy on Research Ethics and

the Standard Operating Procedure on Research Ethics Risk Assessment. The decision was approved on 2017/05/17.

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the UNISA College of Education Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
7. No field work activities may continue after the expiry date 2022/05/17. Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

The reference number 2017/04/12/32025769/18/MC should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.

Yours sincerely,

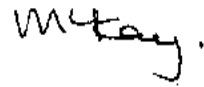
Handwritten signature of M Claassens in black ink, with a horizontal line underneath.

Signature

Chair of CEDU ERC: Dr M Claassens

E-mail: mcdtc@netactive.co.za

Tel: (012) 429 8750

Handwritten signature of McKay in black ink.

Signature

Executive Dean: Prof VI McKay

E-mail: mckayvi@unisa.ac.za

Tel: (012) 429-4979

APPENDIX B



College of Education

P.O. Box 392

UNISA

0003, Pretoria

RSA

19 May 2017

The Provincial Education Director

Ministry of Primary and Secondary Education

Bulawayo Region

P.O. Box 555

Bulawayo

Zimbabwe

Dear Sir/Madam

Ref: Request for Permission to Conduct Research Entitled: “Sign Bilingual Education as a Strategy for Inclusion of Deaf Children in Zimbabwe”

My name is **Patrick Sibanda** and I am doing research with **Professor LDN Tlale** my supervisor and Senior Lecturer in the Department of Educational Psychology towards a Philosophy of Education Degree (PHD) in Inclusive Education at the University Of South Africa (UNISA). We have funding from the Department of Student Funding at UNISA by way of a bursary which is accorded to well deserving candidates. We are requesting for permission to conduct a study entitled “**Sign Bilingual Education as a Strategy for Inclusion of Deaf Children in Zimbabwe**” in the mainstream schools that use sign bilingual education in your province. The schools are as follows: Baines Junior, Helemu, Insukamini, Lobengula, Malindela, Mbizo, Mtshede, Sigombe, Manondwane and Tategulu Primary schools as well as Founders and Njube High schools. Heads of schools and their deputies and Teachers in Charge/Senior Teachers, Schools Psychological Services remedial tutors, and teachers of the deaf

and the children who are deaf are invited, through your office, to take part in this important study. The aim of the study is to examine how sign bilingual education is a strategy for the inclusion of children who are deaf in the schools. The efficacy of sign bilingual education is well documented in many parts of the world. Your province has been selected because of its passion for deaf education as evidenced by the number of schools that enrol children who are deaf and because of the vast experience the province has in this area of education. The study will entail requesting education practitioners to give their expert opinions about how sign bilingual education is a strategy for inclusion in the schools by way of completing a questionnaire and participating in personal and focus group interviews.

The benefits of this study include staff development and professional growth in the use of sign bilingual education as a strategy for inclusion among deaf education practitioners including mainstream teachers of the deaf, more informed practices and policy reviews in line with the use of sign bilingual education as a strategy for inclusion, improved inclusion of children who are deaf, increased learning opportunities and better academic and social participation for the children as well as provision of baseline data for future studies of national magnitude. In order to achieve these benefits, the results and recommendations of this study will be presented to the Permanent Secretary in the Ministry of Primary and Secondary Education through your office. There are no foreseeable potential risks of the study since all information gathered during the study will be treated with strictest confidentiality and the participants will not be coerced to take part. Copies of the results of this study will be relayed to your office both electronically and in hard copy format for consideration and further distribution. The summary of results will also be availed to Heads of schools, remedial tutors and teachers of the deaf in both soft and hard copies. The researcher will also be happy to be given opportunity to present the results at some of your staff development workshops both at provincial and district levels. For any further details regarding this study, you are free to contact me on +263772316078 or at patricksibandac@gmail.com or my supervisor on +27124292064 or at tlaleldn@unisa.ac.za.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'Patrick Sibanda', is written over a light-colored rectangular background.

PATRICK SIBANDA

all communications should be addressed to
"The Provincial Education Director"
Telephone: 09-69511
Telegraphic: "SCHOLASTIC"
Telex: 50531 MPSEM ZW
Fax: 09-77027

Ministry of Primary and Secondary Education
Bulawayo Metropolitan Province
P O Box 555
Bulawayo
Zimbabwe

30 May 2017

Mr Patrick Sibanda
UNIVERSITY OF SOUTH AFRICA

**RE: PERMISSION TO CARRY OUT A RESEARCH: SIGN BILINGUAL
EDUCATION AS A STRATEGY FOR INCLUSION OF DEAF CHILDREN
IN ZIMBABWE**

With reference to your application to carry out a research on the above mentioned topic in the Education Institutions under the jurisdiction of the Bulawayo Province permission is hereby granted. However, you should liaise with the Head of the Institution/School for clearance before carrying out your research.

It will also be appreciated if you could supply the Bulawayo Province with a final copy of your research which may contain information useful to the development of education in the province.

H.R.O. LEGAL & DISCIPLINARY
SERVICES
MIN. OF PRY. & SEC. EDUCATION
N MUNGA
30 MAY 2017
**For: PROVINCIAL EDUCATION DIRECTOR
BULAWAYO METROPOLITAN PROVINCE**
P.O. BOX 555, BULAWAYO
ZIMBABWE

APPENDIX D



College of Education

PO Box 392

UNISA

0003, Pretoria

RSA

19 May 2017

Dear Prospective Participant

Ref: PARTICIPANT INFORMATION SHEET

My name is **Patrick Sibanda** and I am doing research with **Professor LDN Tlale** my supervisor and Senior Lecturer in the Department of Inclusive Education towards a Philosophy of Education Degree (PHD) in Inclusive Education at the University Of South Africa (UNISA). We have funding in form of a bursary from the Department of Student Funding which is given to deserving post graduate candidates at UNISA. I am inviting you to participate in a study entitled “**Sign Bilingual Education as a Strategy for Inclusion of Deaf Children in Zimbabwe.**” The focus of the study is to interrogate how sign bilingual education is a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. Thus, the study intends to establish how the use of Sign Language and oral languages facilitate the inclusion of deaf children in mainstream schools. The envisaged benefits of the study include staff development and professional growth in the use of sign bilingual education as a strategy for inclusion among deaf education practitioners including mainstream teachers of the deaf, adoption of best practices in sign bilingual education as a strategy for inclusion, positive policy review, and improved inclusion of children who are deaf, increased learning opportunities and better academic and social participation for the children as well as provision of baseline data for future studies of national magnitude. The study will also sensitise education practitioners on the efficacy of sign bilingual education which has been found to be an effective strategy for the inclusion of children who are deaf in many parts of the world. In order to achieve these benefits, the results and recommendations of this study will be presented to the Education Permanent Secretary through the Bulawayo Provincial Education office.

You have been chosen for this study because of your strategic involvement, vast experience and influence in deaf education. The researcher was able to obtain your contact details from the Provincial Education Office. The study will involve other participants including 12 Heads of Schools and their deputies and Teachers in Charge, 120 teachers (both specialist and mainstream) and 36 children who are deaf from 12 mainstream schools in Bulawayo that use sign bilingual education. The study involves

responding to a structured questionnaire which should not take more than 20 minutes to complete and taking part in a face-to-face or focus group interview which should be 30 minutes long on average. The questions relate to issues about using sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. The researcher will remain at the school for an average of 3 days while engaging the other participants and may occasionally seek for your assistance during that time.

The researcher wishes to clarify that participation in this study is voluntary and that you are under no obligation to consent to participation. Should you decide to take part in this important study, you will be given this information sheet to keep and be asked to sign a written consent form. Also note that you will not be obliged to continue participating in the study against your will. You are free to withdraw from the study at any stage before returning the completed questionnaire. However, once the questionnaire has been completed and returned to the researcher, it will be impossible to retrieve it because of its anonymous nature. By participating in this study, you will gain more insight into sign bilingual education as a strategy for inclusion of children who are deaf and your responses will contribute to the improvement of the current status quo. The other benefits of this study as has already been suggested include influence of staff development and professional growth among deaf education practitioners, positive policy review, and improved inclusion of children who are deaf, increased learning opportunities and better academic and social participation for the children as well as provision of baseline data for future studies of national magnitude.

Your anonymous contributions will provide useful information which may ultimately influence improved conditions for the inclusion of children who are deaf in mainstream primary schools in Zimbabwe and inform future studies on the area. The study does not pose any potential harm or injury to you and other participants since all information gathered will be anonymous and kept with strictest confidentiality. The only anticipated inconvenience could be the temporary disruption of your routine work schedule. Your name will not be recorded anywhere and no one will be able to connect you to the answers you give. Your answers will be coded and you will be referred in this way in the data, any publications or conference proceedings. Thus the research report may be submitted for publication in a journal or the results presented at a conference but individual participants will not be identifiable in these processes. In some circumstances, your answers may be reviewed by the Research Ethics Review Committee in South Africa. This is a professional body whose work is to ensure that your rights are respected before, during and after the research exercise and which ensures that research is conducted properly and within the confines of human rights and social justice systems. Otherwise, records that identify you will be available only to people working on the study, unless you give written permission for other people to view the records. For instance, an assistant researcher will be in attendance to audio-tape record the proceedings of the interview in order to ensure that your contributions are accurately captured. This will be done with your permission. To ensure confidentiality, the assistant researcher will be required to sign a confidentiality agreement form prior to the interview. With regards to the focus group interview, which will be a discussion involving 10 teachers of the deaf from the same school, every effort will be made by the researcher to ensure that you will not be connected to the information that you share during the discussions. It will however be impossible for the researcher to guarantee that the other participants in the focus group will treat all information confidentially. All the same, I shall encourage all the participants to do so. For this reason, I advise you not to disclose personally sensitive information in the focus group.

Hard copies of your answers will be stored by the researcher in a secured lockable steel cabinet and soft copies of the data will be stored in a password protected computer for future research or academic purposes only for the next 5 years. Future use of the stored data will be subject to further Research

Ethics Review and approval if applicable. After the 5-year period elapses, hard copies will be shredded and soft copies permanently deleted from the computer hard drive using appropriate software. You will not receive any payment or financial rewards for participating in this study since it will be conducted in context of your usual work schedules. This study has received written approval from the Research Ethics Review Committee of the School of Education, UNISA and has been authorised by the Zimbabwe Ministry of Primary and Secondary Education. A copy of the approval letter can be obtained from the researcher if you so wish. If you would like to be informed of the final research findings, please contact Patrick Sibanda on +263772316078 or patrickssibandac@gmail.com. For school administrators, remedial tutors and teachers a summary of results will be available electronically or in hard copy. Specialist teachers of the deaf will be requested to interpret the results to the deaf children who participated in the study. The findings will be accessible for as long as you wish. Should you require any further information or have concerns about the way in which the research will be conducted, you may contact **Professor LDN Tlale** on +27124292064 or tlaleldn@unisa.ac.za. Alternatively, you may contact the Research Ethics Committee chairperson of School of Education, Doctor Madaleen Claassens at mcdtc@netactive.co.za.

Thank you for taking time to read this information sheet and for participating in this study.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'Patrick Sibanda', is written over a light-colored rectangular background.

PATRICK SIBANDA (PHD Student)

CONSENT TO PARTICIPATE IN THIS STUDY (Return slip)

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation. I have read/ The researcher has explained to me and have understood the study as explained in the information sheet. I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty. I am aware that the findings of this study will be processed into a research report, journal publication and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified. I agree to the recording of the interview proceedings. I have received a signed copy of the informed consent agreement.

Participant Name and Surname (Please print) _____

Participant Signature _____ **Date** _____

Researcher's Name and Surname (Please print) _____

Researcher's Signature _____ **Date** _____

APPENDIX E



College of Education

PO Box 392

UNISA

0003, Pretoria

RSA

19 May 2017

Dear Prospective Participant

LETTER REQUESTING AN ADULT TO PARTICIPATE IN AN INTERVIEW

This letter is an invitation to consider participating in a research project entitled “**Sign Bilingual Education as a Strategy for Inclusion of Deaf Children in Zimbabwe**” which I, **Patrick Sibanda**, am conducting as part of my doctoral studies at the University Of South Africa (UNISA) with **Professor LDN Tlale** my study supervisor. The focus of the study is to interrogate how sign bilingual education is a strategy for inclusion in mainstream schools in Zimbabwe. Thus, the study intends to establish how use of both Sign Language and oral languages promotes inclusion of deaf children in mainstream schools. Permission for the research project has been given by the Department of Inclusive Education and the Ethics Committee of the College of Education, UNISA as well as by the Ministry of Primary and Secondary Education in Zimbabwe. I have purposefully identified you as a possible participant because of your valuable experience and expertise related to my research topic. I would like to provide you with more information about this project and what your involvement would entail if you would agree to take part. The importance of sign bilingual education in deaf education is substantial and well documented in international literature. In this interview I would like to have your opinions on this topic. The information that you are going to provide if you agree to participate will be related to how sign bilingual education is used as a strategy for inclusion of deaf children in mainstream schools in the country. The participants in this study include Heads of schools and their deputies and Teachers in Charge teachers and the deaf children in mainstream schools. Your participation in this study is voluntary. It will involve an interview of not more than 30 minutes to take place in a mutually agreed upon location at a time convenient to you. The envisaged benefits of the study include staff development and professional growth in the use of sign bilingual education as a strategy for inclusion among deaf education practitioners including mainstream teachers of the deaf, adoption of best practices in sign bilingual education as a strategy for inclusion, positive policy review with regards sign bilingual education as a strategy for inclusion, and improved inclusion of children who are deaf, increased learning opportunities and better academic and social participation for the children as well as provision

of baseline data for future studies of national magnitude. The study will also sensitise education practitioners on the efficacy of sign bilingual education which has been found to be an effective strategy for the inclusion of children who are deaf in many parts of the world. In order to achieve these benefits, the results and recommendations of this study will be presented to the Education Permanent Secretary through the Bulawayo Provincial Education office. You will not be paid or receive rewards for participating in the study since the study will be conducted during your usual work routine. You may choose to decline to answer any of the interview questions if you so wish. You also have the freedom to withdraw from this study at any time without any negative consequences.

With your kind permission, the interview will be audio-recorded to facilitate collection of accurate information and later transcribed for analysis. Shortly after the transcription has been completed, I will send you a copy of the transcript to give you an opportunity to confirm the accuracy of our conversation and to add or to clarify any points. All the information you provide will be treated with strictest confidentiality. Your name will not appear in any publication resulting from this study and any identifying information will be omitted from the report. However, with your permission, anonymous quotations may be used for analysis. Any electronic data collected for this study will be retained on a password protected computer and any hard copy data locked up in a steel cabinet in my office for 5 years. Thereafter, the records shall be destroyed or permanently deleted using appropriate software. There are no anticipated risks to you as a participant in this study. The summary of results of this study will be availed to Bulawayo Provincial Education office, Heads of schools, remedial tutors and teachers of the deaf both electronically and in hard copy. Specialist teachers will be requested to interpret the summary of the results to the deaf children who participated in the study. If you have any questions regarding this study or would like additional information to assist you in reaching a decision about participation, please feel free to contact me on +263772316078 or at patrickssibandac@gmail.com or my study supervisor **Professor LDN Tlale** on +27124292064 or at tlaleldn@unisa.ac.za. I look forward to speaking with you very much and thank you in advance for your assistance in this research project. If you accept my invitation to participate, I will request you to sign the consent form which is attached to this letter.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'Patrick Sibanda', is written over a light-colored rectangular background.

PATRICK SIBANDA

CONSENT FORM

I have read the information presented in the information letter about the study on sign bilingual education. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions and any additional details I wanted. I am aware that I have the option of allowing my interview to be audio recorded to ensure an accurate recording of my responses. I am also aware that excerpts from the interview may be included in publications to come from this research, with the understanding that the quotations will be anonymous. I was informed that I may withdraw my consent at any time without penalty by advising the researcher. With full knowledge of all the foregoing, I agree, of my own will, to participate in this study.

Name of Participant (Please print) _____

Signature of Participant _____ **Date** _____

Name of Researcher (Please print) _____

Signature of Researcher _____ **Date** _____

APPENDIX F



College of Education

PO Box 392

UNISA

0003, Pretoria

RSA

19 May 2017

Dear Participant

Ref: COVER LETTER FOR A QUESTIONNAIRE

Title of Questionnaire: Opinions of Education Practitioners on Sign Bilingual Education as a Strategy for Inclusion

This questionnaire forms part of my doctoral research entitled “**Sign Bilingual Education as a Strategy for Inclusion of Deaf Children in Zimbabwe**” for the Philosophy of Education Degree (PHD) at the University Of South Africa (UNISA) which I am conducting with my study supervisor **Professor LDN Tlale**. You have been selected by means of purposive sampling because of your vast experience and strategic involvement in deaf education. I therefore hereby invite you to take part in this important study. The aim of this study is to investigate how sign bilingual education is used as a strategy for the inclusion of deaf children in mainstream schools in Zimbabwe. The findings of this study will benefit schools that use sign bilingual education, School Psychological Services remedial tutors, teachers of the deaf and deaf children in mainstream schools. The study is likely to influence improved conditions of inclusion of deaf children as a function of sign bilingual education. You are kindly requested to complete this survey questionnaire comprising 5 sections as honestly and frankly as possible and according to your own personal views and experiences. No foreseeable risks are associated with the completion of the questionnaire which is for research and academic purposes only. The questionnaire may not take more than 15 minutes to complete. You are not required to indicate your name or the name of your school or Department anywhere on this questionnaire in order to ensure absolute anonymity. However, indication of your other bio data related to your age, gender, qualifications and experience is only meant to facilitate comprehensive analysis and will be kept strictly confidential. All information obtained from this questionnaire will be used for research and scholarly purposes only and will remain confidential. Your participation in this survey is voluntary and you have the right to omit any question if so desired, or to withdraw from answering this survey at any stage without penalty. Soon after the completion of the study, an electronic summary of the findings will be

made available to you on request. Hard copies of your answers will be stored by the researcher in a secured lockable steel cabinet and soft copies of the data will be stored in a password protected computer for five years for future research or academic purposes only. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. After the five-year period elapses, hard copies will be shredded and soft copies permanently deleted from the computer hard drive using appropriate software.

You will not receive any payment or financial rewards for participating since the study will be conducted during your routine work schedule. The envisaged benefits of the study include staff development and professional growth in the use of sign bilingual education as a strategy for inclusion among deaf education practitioners including mainstream teachers of the deaf, adoption of best practices in sign bilingual education as strategy for inclusion, positive policy review with regards sign bilingual education as a strategy for inclusion, and improved inclusion of children who are deaf, increased learning opportunities and better academic and social participation for the children as well as provision of baseline data for future studies of national magnitude. The study will also sensitise education practitioners on the efficacy of sign bilingual education which has been found to be an effective strategy for the inclusion of children who are deaf in many parts of the world. In order to achieve these benefits, the results and recommendations of the study will be presented to the Education Permanent Secretary through the Bulawayo Provincial Education office. This study has received written approval from the Research Ethics Review Committee of the School of Education, UNISA and the Zimbabwe Ministry of Primary and Secondary Education. A copy of the approval letters can be obtained from the researcher if you so wish. If you would like to be informed of the final research findings, please contact me on +263772316078 or at patricksibandac@gmail.com. The findings will be relayed to you both electronically and in hard copy format and will be accessible for as long as you wish. Should you require any further information or have concerns about the way in which the research has been conducted, you may contact my study supervisor **Professor LDN Tlale** on +27124292064 or at tlaleldn@unisa.ac.za. By completing the questionnaire, you imply that you have agreed to participate in this research. Kindly complete the questionnaire within 3 days of delivery. I will personally collect the questionnaire at a time that is most convenient to you.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'Patrick Sibanda', is written over a light-colored rectangular background.

PATRICK SIBANDA

APPENDIX G



FOCUS GROUP/INTERVIEW CONSENT AND CONFIDENTIALITY AGREEMENT

I _____ grant consent that the information I share during the focus group may be used by **Patrick Sibanda** for research purposes. I am aware that the group discussions will be digitally recorded and grant consent to these recordings, provided that my privacy will be protected. I undertake not to divulge any information that is shared in the group discussions to any person outside the group in order to maintain confidentiality.

Participant Name and Surname (Please print) _____

Participant Signature _____ **Date** _____

Researcher's Name and Surname (Please print) _____

Researcher's Signature _____ **Date** _____

APPENDIX H



CONFIDENTIALITY AGREEMENT BY ASSISTANT RESEARCHER

I _____ undertake not to divulge any information obtained during the study except to the researcher, **Patrick Sibanda** on request in order to maintain confidentiality. I engage in this study fully aware that breach of the ethical principle of confidentiality or any other principle in research, for that matter, is a serious act of misconduct which can attract a litigation process against me.

Name of Assistant Researcher (Please print) _____

Signature of Assistant Researcher _____ Date _____

Name of Researcher (Please print) _____

Signature of Researcher _____ Date _____

UNISA



university
of south africa

QUESTIONNAIRE FOR TEACHERS ON SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION OF DEAF CHILDREN

INTRODUCTION

My name is **Patrick Sibanda** and I am conducting a study entitled, '**Sign bilingual education as strategy for inclusion of deaf children in Zimbabwe**' for my doctoral studies at the University of South Africa (UNISA). This questionnaire seeks to solicit information on how sign bilingual education is a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. The questionnaire is arranged into 5 sections and may not take more than 15 minutes to complete. Please answer all the questions as honestly as possible by placing a tick in each of the boxes that correspond to your answer. Where comments are requested, please write in the spaces provided. In order to ensure absolute anonymity, you are kindly requested not to indicate your name, the name of your school or any form of identification on this questionnaire.

SECTION A: BIODATA

1. Gender:

	Tick	Code
Male		1
Female		2

2. Highest Professional Qualification:

	Tick	Code
None/Untrained		1
Certificate/Diploma in General Education		2
Certificate/Diploma in Special Education		3
Bachelor's Degree in General Education		4
Bachelor's Degree in Special Education		5
Post Graduate Degree in General Education		6
Post Graduate Degree in Special Education		7
Other (Please specify).....		8

3. If you have any professional qualification in Special Education, please indicate your area of specialisation:

	Tick	Code
Intellectual Disability/Mental Retardation		1
Visual impairment		2
Learning Disability		3
Hearing Impairment		4
Other (Please specify).....		5

4. Experience with children who are deaf:

	Tick	Code
Less Than 1 Year		1
1-5 Years		2
6-10 Years		3
11-15 Years		4
16-20 Years		5
More Than 20 Years		6

SECTION B: CONCEPTIONS OF SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION OF DEAF CHILDREN

NB: Indicate your level of agreement with each of the statements about your understanding of sign bilingual education as a strategy for inclusion of deaf children using the following key:

KEY: Strongly Agree = 1; Agree=2; Neutral=3; Disagree=4; Strongly Disagree=5

	1	2	3	4	5
5. Use of sign and oral languages for which Sign Language is the medium of instruction.					
6. Use of blended methods such as fingerspelling					
7. Use of total communication					
8. Use of sign and oral languages for which the oral language is the medium of instruction.					
9. In sign bilingual education oral language is in the form of speech.					
10. In sign bilingual education oral language is in the form of reading and writing.					
11. Sign Language and spoken language are given equal status.					

SECTION C: BENEFITS OF SIGN BILINGUAL EDUCATION TO DEAF CHILDREN

NB: Indicate your level of agreement about the benefits of sign bilingual education to deaf children by ticking in the appropriate box.

KEY: Strongly Agree = 1; Agree=2; Neutral=3; Disagree=4; Strongly Disagree=5

Statement	1	2	3	4	5
12. Sign bilingual education enables better recognition of deaf children by their hearing peers and teachers in a mainstream class.					
13. Sign bilingual education improves attitudes toward deaf children in a mainstream class.					
14. Sign bilingual education improves social acceptance of the deaf by their hearing peers and teachers in a mainstream class.					
15. Sign bilingual education improves communication between deaf and hearing children and teachers in a mainstream class.					
16. Sign bilingual education increases participation of deaf children in a mainstream class.					
17. Ultimately sign bilingual education facilitates inclusion of deaf children in the mainstream school.					

SECTION C: PRACTICE OF SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION OF DEAF CHILDREN

Using your experience indicate the extent to which the following practices are used in sign bilingual education as a strategy for inclusion at your school. Use the following key:

KEY: More Often=1; Often=2; Not Aware=3; Less Often=4; Never=5

Practice/Strategy	1	2	3	4	5
18. Concurrent use of sign and oral language					
19. Separation of sign and oral language					
20. Code switching between manual and oral modalities					
21. Translanguaging between sign and oral language					
22. Use of qualified Sign Language interpreters					
23. Use of specialist teachers as Sign Language interpreters					
24. Use of deaf adults as models					
25. Exposing children to both hearing and Deaf cultures					
26. Use of blended methods such as finger spelling					
27. Use of total communication					
28. Training of parents in sign bilingual strategies					

SECTION D: CHALLENGES OF USING SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION

NB: To what extent do you agree or disagree that the following are challenges for sign bilingual education as a strategy for inclusion at your school. Use the following key:

KEY: Strongly Agree = 1; Agree=2; Neutral=3; Disagree=4; Strongly Disagree=5

Statement	1	2	3	4	5
29. Lack of qualified Sign Language interpreters					
30. Lack of deaf adult models in the community					
31. Lack of deaf teachers in the school					
32. Lack of hearing aid and cochlear technology					
33. Lack of Sign Language proficiency among hearing teachers					
34. Lack of oral language proficiency among deaf children					
35. Lack of Sign Language proficiency among deaf children					
36. Lack of Sign Language proficiency among hearing children					
37. Negative attitudes toward sign bilingual education.					
38. Sign bilingual education is new and has not been clearly articulated.					
39. Home-school language dilemma					
40. Lack of support from school administrators					

SECTION E: GENERAL COMMENTS ON SIGN BILINGUAL EDUCATION AS STRATEGY FOR INCLUSION

41. Which other strategies have you used to facilitate the inclusion of deaf children in your school:

.....

42. What other challenges mitigate sign bilingual education as a strategy for inclusion of deaf children at your school?

.....

43. What could be done to improve sign bilingual education as a strategy for inclusion?

.....
.....
.....
.....
.....
.....

THANK YOU FOR TAKING TIME TO COMPLETE THIS QUESTIONNAIRE

UNISA



QUESTIONNAIRE FOR SCHOOL ADMINISTRATORS ON SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION OF DEAF CHILDREN

INTRODUCTION

My name is **Patrick Sibanda** and I am conducting a study entitled, ‘**Sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe**’ for my doctoral studies at the University of South Africa (UNISA). This questionnaire seeks to solicit information on sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe. The questionnaire is arranged into 5 sections. Please answer all the questions as honestly as possible by placing a tick in each of the boxes that correspond to your answer. Where comments are requested, please write in the spaces provided. In order to ensure absolute anonymity, you are kindly requested not to indicate your name or any form of identification on this questionnaire.

SECTION A: BIODATA

1. Gender

	Tick	Code
Male		1
Female		2

2. Highest Professional Qualification

	Tick	Code
Certificate/Diploma in General Education		1
Certificate/Diploma in Special Education		2
Bachelor’s Degree in General Education		3
Bachelor’s Degree in Special Education		4
Post Graduate Degree in General Education		5
Post Graduate Degree in Special Education		6
Other (Please specify).....		7

3. If you have any professional qualification in Special Education, please indicate your area of specialisation:

	Tick	Code
Intellectual Disability/Mental Retardation		1
Visual impairment		2
Learning Disability		3
Hearing Impairment		4
Other (Please specify.....)		5

4. Experience with children who are deaf:

	Tick	Code
Less Than 1 Year		1
1-5 Years		2
6-10 Years		3
11-15 Years		4
16-20 Years		5
More Than 20 Years		6

SECTION B: CONCEPTION OF SIGN BILINGUAL EDUCATION

NB: Indicate your level of agreement with each of the statements about your understanding of sign bilingual education as a strategy for the inclusion of deaf children using the following key:

KEY: Strongly Agree = 1; Agree=2; Neutral=3; Disagree=4; Strongly Disagree=5

1. Use of sign and oral languages for which Sign Language is the medium of instruction.	1	2	3	4	5
2. Use of blended methods such as fingerspelling and cued speech					
3. Use of total communication					
4. Use of sign and oral languages for which the oral language is the medium of instruction.					
5. In sign bilingual education oral language is in the form of speech.					
6. In sign bilingual education oral language is in the form of reading and writing.					
7. Sign Language and spoken language are given equal status in sign bilingual education.					

SECTION C: BENEFITS OF SIGN BILINGUAL EDUCATION IS A STRATEGY FOR INCLUSION OF DEAF CHILDREN

NB: Basing on your conception of sign bilingual education as a strategy for inclusion of the deaf children in Section B, indicate your level of agreement about its benefits to deaf children using the following key:

KEY: Strongly Agree = 1; Agree=2; Neutral=3; Disagree=4; Strongly Disagree=5

Statement	1	2	3	4	5
8. Sign bilingual education enables creation of better peer relations between deaf and hearing children.					
9. Sign bilingual education facilitates better interaction between deaf children and their teachers in the mainstream classes					
10. Sign bilingual education improves attitudes toward deaf children					
11. Sign bilingual education improves participation by deaf children in all school activities (class, assemblies and co-curricular activities).					
12. Sign bilingual education promotes acceptance of both the deaf and hearing cultures					
13. Sign bilingual education increases social acceptance of deaf children by all hearing people in the school					
14. Sign bilingual education increases the sense of belongingness for deaf children in the mainstream school activities					
15. Sign bilingual education facilitates recognition of deaf children as able beings					
16. Sign bilingual education makes mainstream schools more accessible to deaf children					
17. Sign bilingual education improves the inclusion of deaf children into the school					

SECTION C: PRACTICES IN SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION

Indicate the extent to which you agree or disagree that the following are the practices in sign bilingual education as a strategy for inclusion of deaf children in the school using the following key:

KEY: Strongly Agree= 1; Agree= 2; Not Sure= 3; Disagree= 4; Strongly Disagree= 5

Practices	1	2	3	4	5
18. Concurrent use of sign and oral language					
19. Separation of sign and oral language					
20. Code switching between manual and oral modalities					
21. Use of qualified Sign Language interpreters					
22. Use of specialist teachers as Sign Language interpreters					
23. Use of Sign Language translation					
24. Promoting both hearing and deaf cultures					
25. Use of deaf adults as models					
26. Engagement of deaf teachers					
27. Use of blended methods such as finger spelling					
28. Use of hearing and cochlear technology to support sign bilingual education as a strategy for inclusion					
29. Training of parents in sign bilingual strategies					

SECTION D: CHALLENGES OF USING SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION OF DEAF CHILDREN

To what extent do you agree or disagree that each of the following are challenges to sign bilingual education as a strategy for inclusion of deaf children at your school?

KEY: Strongly Agree= 1; Agree= 2; Not Sure= 3; Disagree= 4; Strongly Disagree= 5

Statement	1	2	3	4	5
30. Lack of Sign Language proficiency					
31. Limited knowledge of sign bilingual education among teachers					
32. Home-school language controversy for deaf children					
33. Lack of qualified Sign Language interpreters					
34. Lack of adult deaf models in the school					
35. Lack of trained deaf teachers					
36. Lack of training in sign bilingual education					
37. Lack of cochlear technology					
38. Negative attitudes among mainstream teachers					
39. Unclear policy guidelines					
40. Sign bilingual education is a new concept and has not been clearly articulated.					

SECTION E

41. In your own opinion, how else is sign bilingual education facilitating the inclusion of deaf children in mainstream schools in Zimbabwe?

.....

42. What do you think can be done to improve sign bilingual education as a strategy for inclusion?

.....

THANK YOU FOR TAKING TIME TO COMPLETE THIS QUESTIONNAIRE



PERSONAL INTERVIEW GUIDE FOR SCHOOL ADMINISTRATORS ON SIGN BILINGUAL EDUCATION AS A STRATEGY FOR INCLUSION OF DEAF CHILDREN

- From your experience in supervising deaf education how does sign bilingual education work as a strategy for inclusion of deaf children at your school?
- In comparison to other strategies, what benefits does sign bilingual education have as a strategy for inclusion of deaf children in the mainstream schools?
- What methods have you observed teachers in the school using to facilitate sign bilingual education as a strategy for inclusion? (code-switching, Sign Language interpretation/translation, used of deaf adult models etc)
- How have the teachers utilised these methods in making sign bilingual education work as a strategy for inclusion of the deaf?
- What other practices do you recommend to teachers to try in using sign bilingual education as a strategy for inclusion of deaf children in the school? Let us talk about these practices and see how they could help sign bilingual education as a strategy for inclusion.
- What support measures do you think are needed for promoting sign bilingual education as a strategy for inclusion of deaf children in the school? (In terms of policy guidelines, resources, training and practices? etc) Let's talk more about each of these.
- So what challenges have been faced in using sign bilingual education as a strategy for inclusion in the school? How can we mitigate each one of these challenges?
- Finally, what would you like to see improved with regards sign bilingual education as a strategy for inclusion of deaf children in mainstream schools in Zimbabwe?

THANK YOU FOR TAKING PART IN THIS INTERVIEW

APPENDIX L



FOCUS GROUP INTERVIEW GUIDE FOR TEACHERS OF THE DEAF ON SIGN BILINGUAL EDUCATION AS STRATEGY FOR INCLUSION OF DEAF CHILDREN

1. From your experience, how can you explain sign bilingual education?
2. How do you regard sign bilingual education as a strategy for inclusion?
3. Let us talk about how sign bilingual education works in facilitating
 - Communication
 - social interaction
 - social acceptance
 - cultural interchanges including recognition of the deaf culture
 - change of attitudes
 - respect for each other between deaf and hearing children and
 - equal participation between deaf children and their hearing peers?
4. To what extent has sign bilingual education made each of these indicators of inclusion of deaf children possible at your school?
5. Meanwhile how have school administrators regarded sign bilingual education as a strategy for inclusion? What about the other teachers, parents deaf and children?
6. In the classroom, how has sign bilingual education been used as a strategy for inclusion of deaf children? What about in play and extra-curricular activities?
7. Let's talk about some specific strategies that you have used to make sure that sign bilingual education works as a strategy for inclusion of deaf children. Which are the other possible methods? Why could these not be used at your school?
8. What challenges have you experienced in using sign bilingual education as a strategy for inclusion of deaf children at your school? Let's discuss these challenges more.
9. On the whole, how best could sign bilingual education be used as a strategy for the inclusion of deaf children in mainstream primary schools in Zimbabwe?
10. What could be done to improve the current situation of sign bilingual education as a strategy for inclusion? (In terms of policy, practice and resourcing).

THANK YOU FOR TAKING PART IN THIS FOCUS GROUP INTERVIEW

UNISA

university
of south africa**QUESTIONNAIRE FOR CHILDREN WHO ARE DEAF ON SIGN BILINGUAL
EDUCATION AS A STRATEGY FOR INCLUSION**

My name is Mr P. Sibanda. I am also a teacher of the deaf. I would like you to answer the simple but interesting questions below by putting a tick (✓) in the box. I want to understand how signing and writing make deaf and hearing children live happily together in the school.

Key: Yes=1; Not sure=2; No=3

	Yes	Not sure	No
1. I feel good when we all sign and write with hearing children and teachers			
2. I understand teachers better when they sign and write			
3. Teachers understand me better when I sign and write			
4. I learn better in the main class when we all sign and write			
5. It is easy to make hearing friends when we all sign and write			
6. I enjoy playing with hearing friends when we all sign and write			
7. I can fully take part in group work when all members of the group sign and write			
8. I feel loved when hearing children and teachers sign and write for me.			
9. I communicate better with hearing children and teachers when we all sign and write.			
10. Everyone understands deaf culture when we all sign and write.			

Thank you for being such a good child!

APPENDIX N



College of Education

PO Box 392

UNISA

0003, Pretoria

RSA

19 May 2017

Dear Parent

Ref: LETTER REQUESTING PARENTAL CONSENT FOR MINORS TO PARTICIPATE IN THE RESEARCH PROJECT

My name is **Patrick Sibanda** and I am doing research with **Professor LDN Tlale** my supervisor and Senior Lecturer in the Department of Inclusive Education towards a Doctor of Education in Inclusive Education Degree at the University Of South Africa (UNISA). Your child is invited to participate in the study entitled “**Sign Bilingual Education as a Strategy for Inclusion of Deaf Children in Zimbabwe.**” I am undertaking this study as part of my doctoral research at the University Of South Africa (UNISA). The purpose of the study is to find out how sign bilingual education is used as a strategy for the inclusion of deaf children in mainstream schools in Zimbabwe. The possible benefits of this study include staff development and professional growth for deaf education practitioners including mainstream teachers of your child, more informed practices and policy reviews with regards sign bilingual education as a strategy for inclusion, improved inclusion of children who are deaf, increased learning opportunities and better academic and social participation for the children as well as provision of baseline data for future studies of national magnitude. I am asking permission to include your child in this study because s/he attends a school which uses sign bilingual education and which has been selected for the study. In addition, your child stands to directly benefit from the results of this study as has been pointed out above. I expect 35 other children who are deaf in Bulawayo to participate in the study. The other participants of the study are Heads of schools, remedial tutors and teachers of the deaf. If you allow your child to participate, I shall request to directly observe him/her during lessons, assemblies, breaks and extra curricula activities to determine how sign bilingual education is used to improve inclusion of the child in the mainstream of the school.

Any information that is obtained in connection with this study and can be identified with your child will remain confidential and will only be disclosed with your permission. The information will not be linked to his or her name or the school’s name in any written or verbal report based on this study. Such

a report will be used for research purposes only. There are no foreseeable risks to your child by participating in the study. Your child will not receive direct benefit from participating in the study. However, the possible benefits to education, as has already been highlighted, are staff development and professional growth of deaf education practitioners including mainstream teachers, more informed practices and policy reviews, full inclusion of children who are deaf, increased learning opportunities and better academic and social participation for the children as well as provision of baseline data for future studies of national magnitude. Neither your child nor you will receive any type of payment for participating in this study but any costs incurred as a result of the study. Your child's participation in this study is voluntary. Your child may decline to participate or may choose to withdraw from participation at any stage of the research. Withdrawal or refusal to participate will not affect him/her in any way. Similarly, you can agree to allow your child to participate in the study now and change your mind later without any penalty. The study will take place during regular classroom activities with the prior approval of the school and your child's teacher. However, if you do not want your child to participate during classroom activities, an alternative arrangement can be made. A simplified version of the results of this study will be interpreted to your child by the researcher with the help of the specialist teacher in the school.

In addition to your permission, your child must also agree to participate in the study and will also be asked to sign an assent form. You are also requested to sign the consent form which accompanies this letter. If your child does not wish to participate in the study, s/he will not be included and there will be no penalty. The information gathered from the study will be stored securely on a password locked computer or locked up in a steel cabinet in my office for 5 years after the study. Thereafter, the records will be permanently deleted or destroyed. If you have any questions about this study please feel free to contact me on +263772316078 or at patrickbandac@gmail.com or my study supervisor, Professor LDN Tlale on +27124292064 or at tlaleldn@unisa.ac.za. Permission to conduct the study has already been secured from the Ministry of Primary and Secondary Education and the Ethics Committee of the College of Education, University of South Africa (UNISA). You are making a decision about allowing your child to participate in this important study. Your signature below indicates that you have read the information provided above and decided to allow him/her to participate in the study. You may keep a copy of this letter.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'P. Sibanda', is written over a light-colored rectangular background.

Mr P. SIBANDA

RETURN SLIP

Name of Child _____

Name of Parent/Guardian _____

Signature of Parent/Guardian _____ **Date** _____

Name of Researcher _____

Signature of Researcher _____ **Date** _____

APPENDIX O



College of Education

PO Box 392

UNISA

0003, Pretoria

RSA

19 May 2017

LETTER REQUESTING ASSENT FROM LEARNERS IN A PRIMARY SCHOOL TO PARTICIPATE IN THE STUDY

Dear Learner

My name is Mr P. Sibanda. I am also a teacher of the deaf. I would like to ask if I can come and watch you do classroom activities with your teacher; attend assembly and play with peers during breaks and sports. I am trying to learn more about how sign bilingual education is used to help deaf children like you make friends and live happily with hearing peers. Other people who will take part include 35 other deaf children in mainstream schools in Bulawayo, Heads of schools, remedial tutors and the teachers. Taking part may help trying to make mainstream schools happier places to learn for you and other deaf children. To make sure that this happens, I will write to the education offices telling them how signing and writing together help deaf children like you make friends and learn together with their hearing peers. If you agree to do this, then I will ask you simple questions about how you feel about using Sign Language and writing in school. We will do some fun game where you have to answer a few questions for me. I will not ask you to do anything that might hurt you or that you do not want to do. I will also ask your parents if you can take part. If you do not want to take part, it will also be fine with me. Remember, you can say yes or you can say no and no one will be upset if you do not want to take part or even when you change your mind later and you want to stop. You can ask any questions now if you have them. If you think of a question after I have left for now, ask me next time I visit your school. Once we have finished all the activities, I will ask your teacher to share with you about what I learnt during my visits to your school.

Please speak to mommy, daddy, aunt, uncle or granny about taking part before you sign this letter. Signing your name at the bottom of this letter means that you agree to be in this study. A copy of this letter will be given to your parents/guardians. If you or your parents still have any questions regarding this study or would like additional information tell them to phone me on +263772316078 or at

patrickssibandac@gmail.com or my study supervisor Professor LDN Tlale on +27124292064 or at tlaleldn@unisa.ac.za.

Regards



Mr P.Sibanda

ASSENT FORM

	Yes, I will take part	No I don't want to take part
Name of Researcher: Mr P. Sibanda		
Date: 19 May 2017 <hr/>		
Name of Witness:		

APPENDIX P



College of Education

PO Box 392

UNISA

0003, Pretoria

RSA

19 May 2017

LETTER REQUESTING ASSENT FROM LEARNERS IN A SECONDARY SCHOOL TO PARTICIPATE IN THE STUDY

Dear Learner

Title of Study: Sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe.

I am doing research on ‘**Sign bilingual education as a strategy for inclusion of deaf children in Zimbabwe.**’ This is part of my doctoral studies at the University of South Africa. Your Head has given me permission to do this study at your school. I would like to invite you to be a very special part of my study. I am doing this study so that I can find ways that your teachers can use to make sure that you live and learn happily among your hearing peers. This will help you and other learners who are deaf in different mainstream schools in Zimbabwe.

This letter explains what I would like you to do as part of the study. There may be words that you do not understand in this letter. You can ask me or your teacher to explain them to you. You may take this letter home to think about my invitation and talk to your parents about this before you decide if you want to take part. I would like you to answer a few simple but interesting questions in form of a questionnaire. I will also ask you to explain to me some of your answers using the language you understand best. Answering these questions may not take more than 15 minutes.

I will write a report on the study but I will not use your name in the report or say anything that will let other people know your answers. You do not have to be part of this study if you do not want. If you choose to be in this study but you later feel you cannot continue, you are still free to stop participating. No one will blame or criticise you for that. When I am finished with the study, I shall return to your school to explain some of the helpful and interesting things found in the study. I will ask your teacher to help me explain this to you. If you decide to be in the study, I will ask you to sign the form at the end of this letter. If you have any other questions, please you or your parent can contact me on +263772316078.

Yours Sincerely



Mr P. Sibanda

ASSENT FORM

	Yes, I will take part	No I don't want to take part
Name of Researcher: Mr P. Sibanda		
Date: 19 May 2017 <hr/>		
Name of Witness:		



MASVINGO

Department of Languages and Literature

23 October 2017

To whom it may concern

This serves to certify that Patrick Sibanda's PhD thesis entitled 'Sign Bilingual Education as a Strategy for Inclusion of Deaf Children in Zimbabwe' was edited by an experienced editor. I have edited the thesis and advised the author to effect various changes in the mechanics of language, text formatting, citation and referencing style. I have worked as an Editor for PhD and MPhil theses for various Universities' students including the Zimbabwe Open University, UNISA and Great Zimbabwe University from 2011 to date. I also edit journals including Issues of the Journal of African Indigenous Languages and Literature by the Africa Institute for Culture, Peace, Dialogue and Tolerance Studies.

Thank you.

Mhute I. (PhD)

Zimbabwe Open University

P. O Box 1210, Masvingo

0772856351 / 0738618366

isaacmhute@gmail.com

APPENDIX R

Reliability Coefficients

Cronbach's Alpha	N of Items
.897	40

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Use of sign and oral for which sign is the medium	15.2909	7.766	.936	.975
Use of blended methods	14.9273	7.365	.854	.902
Use of total communication	14.8182	6.374	.899	.900
Use of sign and oral for which oral is the medium	13.3818	6.796	.876	.891
In sign bilingual education oral in form of speech	13.3818	8.129	.713	.782
In sign bilingual education oral in form of reading	14.7091	8.506	.767	.808
Sign and spoken language given equal status	14.4000	6.874	.163	.397

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
enables better recognition	7.6271	9.307	.574	.900
improves attitudes	7.5763	9.110	.768	.875
improves social acceptance	7.5593	8.906	.744	.877
improves communication	7.4576	8.459	.735	.877
increases participation	7.5424	8.218	.739	.877
facilitates inclusion	7.3220	7.981	.806	.865

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
concurrent separation	25.5000	40.383	.399	.701
code switching	25.1458	43.574	.252	.721
translanguaging	25.3125	42.390	.458	.698
use of interpreters	25.3750	40.410	.527	.686
use of specialist teachers	25.1875	40.198	.344	.712
use of deaf adults	26.0417	46.211	.074	.745
use of blended methods	24.2083	40.041	.341	.712
exposing children	25.3333	39.163	.482	.688
use of total communication	25.6875	38.773	.569	.677
training of parents	25.9792	45.510	.191	.726
	24.5625	38.592	.497	.685

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
qualified interpreters	22.9375	44.570	.395	.741
deaf adult models	22.8958	47.287	.315	.749
insufficient time	22.8958	43.670	.522	.724
hearing aid	23.1667	48.227	.236	.759
sign language proficiency among hearing teachers	23.4375	48.805	.296	.750
oral language proficiency among deaf children	22.7292	43.946	.581	.720
sign language proficiency among deaf children	22.5625	47.996	.261	.755
sign language proficiency among hearing children	23.2708	45.521	.486	.731
negative attitudes	23.0000	46.894	.333	.747
sign bilingual education is new	22.9792	47.723	.276	.754
home-school language dilemma	22.9375	43.592	.606	.717
support from school administrators	22.6458	43.893	.440	.735

Reliability Statistics

Cronbach's Alpha	N of Items
.757	39

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Use of sign and oral for which sign is the medium	15.2909	7.766	.936	.946
Use of blended methods	14.9273	7.365	.854	.892
Use of total communication	14.8182	6.374	.899	.903
Use of sign and oral for which oral is the medium	13.3818	6.796	.876	.888
In sign bilingual education oral in form of speech	13.3818	8.129	.713	.782
In sign bilingual education oral in form of reading	14.7091	8.506	.767	.842
Sign and spoken language given equal status	14.4000	6.874	.163	.498

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
enables better recognition	7.6271	9.307	.574	.900
improves attitudes	7.5763	9.110	.768	.875
improves social acceptance	7.5593	8.906	.744	.877
improves communication	7.4576	8.459	.735	.877
increases participation	7.5424	8.218	.739	.877
facilitates inclusion	7.3220	7.981	.806	.865

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
concurrent separation	25.5000	40.383	.399	.701
code switching	25.1458	43.574	.252	.721
translanguaging	25.3125	42.390	.458	.698
use of interpreters	25.3750	40.410	.527	.686
use of specialist teachers	25.1875	40.198	.344	.712
use of deaf adults	26.0417	46.211	.074	.745
use of blended methods	24.2083	40.041	.341	.712
exposing children	25.3333	39.163	.482	.688
use of total communication	25.6875	38.773	.569	.677
training of parents	25.9792	45.510	.191	.726
	24.5625	38.592	.497	.685

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
qualified interpreters	22.9375	44.570	.395	.741
deaf adult models	22.8958	47.287	.315	.749
insufficient time	22.8958	43.670	.522	.724
hearing aid	23.1667	48.227	.236	.759
sign language proficiency among hearing teachers	23.4375	48.805	.296	.750
oral language proficiency among deaf children	22.7292	43.946	.581	.720
sign language proficiency among deaf children	22.5625	47.996	.261	.755
sign language proficiency among hearing children	23.2708	45.521	.486	.731
negative attitudes	23.0000	46.894	.333	.747
sign bilingual education is new	22.9792	47.723	.276	.754
home-school language dilemma	22.9375	43.592	.606	.717
support from school administrators	22.6458	43.893	.440	.735

Reliability Statistics

Cronbach's Alpha	N of Items
.725	10

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I feel good when we all sign and write	15.2909	7.766	.736	.775
I understand teachers better	14.9273	7.365	.754	.802
Teachers understand me better	14.8182	6.374	.899	.900
I learn better	13.3818	6.796	.886	.904
It is easy to make hearing friends	13.3818	8.129	.613	.682
I enjoy playing with hearing friends	14.7091	8.506	.667	.688
I can fully take part in group work	14.4000	6.874	.663	.697

APPENDIX S

TESTS FOR SIGNIFICANCE (p=0.005)

Teachers

Correlations		
	benefits	practice
Pearson Correlation	1	.862
benefits Sig. (2-tailed) p-value		.002
N	100	100
Pearson Correlation	.862	1
practice Sig. (2-tailed) p-value	.002	
N	100	100

Administrators

Correlations		
	benefits	methods
Pearson Correlation	1	0.805
benefits Sig. (2-tailed) p-value		.002
N	29	29
Pearson Correlation	0.805	1
methods Sig. (2-tailed) p-value	0.002	
N	30	30