ACCESSIBILITY OF SIGN LANGUAGE SERVICES TO THE DEAF IN TERTIARY EDUCATION INSTITUTIONS: A CASE OF THE UNIVERSITY OF ZAMBIA AND ZAMBIA INSTITUTE OF SPECIAL EDUCATION

BY

YOHANNES GETANEH DENEKE

A Dissertation submitted in Partial Fulfillment of the Requirement for the Award of the degree of Master of Education in Special Education to the University Of Zambia

THE UNIVERSITY OF ZAMBIA

LUSAKA

2017

COPYRIGHT

All rights reserved. No part of this dissertation may be reproduced, stored or transmitted in any manner without prior permission in writing from the author or the University of Zambia.

©University of Zambia

DECLARATION

I, **Yohannes Getaneh** declares that this research is my own work and that all the sources that I have used or quoted have been acknowledged by means of complete references and that it has not been submitted at any University for the award of any Degree.

Signature: ..... Date.....

CERTIFICATE OF APPROVAL

This dissertation by Yohannes Getaneh is approved as a partial fulfillment of the requirements for the Award of the Degree of Master of Education in Special Education of the University of Zambia.

1st Examiner

Name: …… Sign: …… Date: ….....

2nd Examiner

Name: …… Sign: …… Date: ….....

3rdExaminer

Name: …… Sign: …… Date: …….....

ABSTRACT

The study sought to establish whether deaf students in tertiary education in Zambia have access to sign language services. Participants were drawn from the University of Zambia, Ministry of Community Development, Mother and Child Health, Zambia Institute of Special Education and Ministry of Higher Education. Four objectives guided the study: namely i) investigate the accessibility of Sign Language interpreting services to deaf students in tertiary institutions; ii) establish the benefits of Sign Language interpreting services to deaf students at tertiary education level; iii) explore the challenges in the provision of Sign Language interpreting at tertiary level; iv) establish measures that had been put in place to ensure sustainability of Sign Language interpreting services in tertiary institutions. The study employed the qualitative methods and a case study research design. Study sample comprised twenty six: nine (9) deaf students, nine lecturers, four sign language interpreters, two administrators and two policy makers, one from Ministry of Higher Education and one from Ministry of Community Development, Mother and Child Health was used. The data was obtained through interview schedules, observations and documentary analysis guides. Data were coded and emerging themes were grouped into categories using thematic approach. The study revealed that deaf students had limited access to Sign Language interpretation service. There is a shortage of SLI in terms of quantity and quality as ZAMISE had one interpreter and UNZA had two to service the whole school population. Lack of job security, specific policy on SLS, poor conditions of service and working conditions, remuneration were some of constraints established. Enhancement of high academic competiveness, academic performance, classroom interaction and participation were some of notable benefits derived from SLS. The study recommended the need for enhancement of professionalism in SLS delivery through manpower development and training, formulation of a policy solely on Sign Language, the use of Total Communication at tertiary level and recognition of SLI as a profession by government and all stakeholders.

DEDICATIONS

This study is dedicated to my Deaf mother, Gomeju. Though am hearing, her deafness made me assume Sign Language as my “mother tongue”. Even though I am hearing, her deafness made me assume Sign Language interpreting my career. My hearing wife and children assumed Sign Language as their communication mode because of her deafness.

ACKNOWLEDGEMENT

I would like to acknowledge with thanks invaluable support and guidance I received when conducting the research from:-

God, whose work of preaching to His Deaf folks in Sign Language enabled me to maintain quality Sign Language interpreting service appreciated by the Deaf Baptist parishioners and beyond. Without them I have not been able to maintain Sign Language interpreting skills.

To my supervisor Dr. Matafwali for making certain that I conducted my research reading and writing thoroughly to enable me achieve quality expected at post-graduate level of training without her guidance I wouldn't have progressed well in this research undertaking.

To my lecturers and post graduates colleagues in the Master of Special Education class, for the time spent together in tutorials interacting and sharing educational experiences. Without them I wouldn't have expended an increase in knowledge in Special Education.

The Zambia Institute of Special Education and the University of Zambia for permitting me to conduct my research at their premises. Without them this research would not have been accomplished.

The Zambia National Association of the Deaf and Mackenzie Mbewe for availing historical information useful for this research.

The Faith Baptist Community School staff for being an excellent staff and supportive during the course of my study. Special thanks go to John Ndhlovu for assisting me with typing and editing.

Last but not the least, to my wife Kidist and our children Leah, Yafet and Bunny for enduring my long absence from home while attending lecture classes, tutorials and conducting field research. Without their patience I wouldn't have accomplished this research undertaking.

TABLE OF CONTENT

COPYRIGHT ..... **i**

DECLARATION ..... **ii**

CERTIFICATE OF APPROVAL ..... **iii**

ABSTRACT ..... **iv**

DEDICATIONS ..... **v**

ACKNOWLEDGEMENT ..... **vi**

LIST OF TABLES ..... **xi**

LIST OF FIGURES ..... **xii**

LIST OF APPENDICES ..... **xiii**

ACRONYMS ..... **xiv**

CHAPTER ONE: INTRODUCTION **1**

1.1 Overview 1
1.2 Background 1
1.3. Statement of the problem 8
1.4 Purpose of the Study 9
1.5 Objectives 9
1.6 Research questions 9
1.7 Significance of the study 10
1.8 Delimitations 10
1.9 Limitations of the study 10
1.10 Conceptual Framework 10
1.11 Definition of key terms 12
1.12 Summary 12

CHAPTER TWO: LITERATURE REVIEW 14

2.1 Overview 14
2.2 The concept of Hearing Impairment 14
2.3 The concept of Sign Language 15
2.4 History of Sign Language Interpreting 18
2.4.1 Accessibility of Sign Language Interpreters in education 19
2.4.2 Benefits of Sign Language Service to deaf students 26
2.4.3 Challenges in the provision of interpreting facility in tertiary institutions 27
2.4.4 Sustainability of sign language interpreting services in tertiary institutions 37
2.5 Summary 41

CHAPTER THREE: METHODOLOGY 43

3.1 Overview 43
3.2 Research design 43
3.4 Sample size 44
3.6. Data collection Instruments 46
3.7 Piloting the Study 46
3.8 Validity of Data Collection Instruments 47
3.9 Procedure for data collection 47
3.10 Data analysis 48
3.11 Ethical consideration 48
3.12 Summary 50

CHAPTER FOUR: PRESENTATION OF THE FINDINGS 51

4.1 Overview 51
4.2 Accessibility of SLS at Institution A and Institution B 51
4.2.1 Accessibility at Institution A 51
4.2.2 Accessibility at Institution B 52
4.3 Deaf Students Access Sign Language Interpreting Services In Tertiary Institutions In Zambia 52
4.3.1 Deaf Students Views on Accessing SLS Facility In Tertiary Institutions 52
4.4 Benefits Deaf Students Derive From SLI Service In Tertiary Institutions 53
4.4.1 Lecturers Views on Benefits of SL Interpreting Services In Tertiary Class 53

4.4.2 Views of Deaf Respondents on Benefits of SLI Services 55
4.5 Challenges on Provision of Interpreting Facility In Tertiary Institutions 55
4.5.1 Motivation 55
4.5.2 Attitudes And Behaviors During Interpreting assignments 56
4.5.3 Variation In Languages 57
4.5.4 Views of Students on Non-Signing Lecturers 57
4.5.4.2 Interpreting Strategies 58
4.5.5 Verbal Communication 58
4.5.6 Non-Verbal Communication 58
4.5.7 SLS Providers and Lecturers Preparedness For SL Interpreting Services 59
4.5.8 Work Experience and Education of SLI 60
4.6 Measures in Place to Sustain Interpreting Services in Tertiary Institutions 61
4.6.1 Role, Responsibility and Interventions of Government 61
4.6.2 Poor Environment 62
4.6.3 Compliance by institutions on SLI provision 63
4.7 Summary 63

CHAPTER FIVE: DISCUSSIONS OF RESEARCH FINDINGS 64

5.1 Overview 64
5.2 Accessibility of Sign Language Interpreting To Deaf Students in Tertiary Institutions 64
5.3 To establish the benefits of Sign Language Services to deaf students at tertiary education level, ... 66
5.4 To explore the challenges in the provision of Sign Language Services at tertiary level. 66
5.4.1 SLIs training and experience 67
5.4.2 Inadequacy of training to educational assignments 67
5.4.3 Working conditions, conditions of service and remuneration 68
5.4.4 Variations in Sign Language 68
5.4.5 Challenge of non-signing lecturers 69
5.4.6 Poor physical accessibility of the classroom 69
5.5 Measures that have been put in place to ensure sustainability of Sign Language Services in tertiary institutions. 70
5.5.1 Institutional, Social, legal and policy frameworks to ensure SLS sustainability ... 70

5.5.3 Lack of clear policy on inclusion in tertiary 72

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS 74

6.1 Overview 74

6.2 Conclusion 74

6.3 Recommendations 75

REFERENCES 77

APPENDICES 89

LIST OF TABLES

Table 4:3	Accessing SLS facility ……	51
Table 4:4	Weather SLS enhances classroom inclusiveness and deaf Participation ……..	53
Table 4.5	If lecturers use Sign Language …….....	57

LIST OF FIGURES

Figure 2.1: Conceptual Framework …… 11

LIST OF APPENDICES

Appendix A: Interview Guides Students 87

Appendix B: Interview Guides For Lecturers 88

Appendix C: Interview Guides For Policy Administrators 89

Appendix D: Interview Guides For Sign Language Interpreters 90

Appendix E: Interview Guides For Policy Makers 91

Appendix F: Observation Check List Sign Language Interpreters during Lecture and Tutorial Time 92

Appendix G: Informed Consent 93

ACRONYMS

ADD	Action on Disability and Development
ASLIZ	Association of Sign Language Interpreters of Zambia
HI	Hearing Impairment
HH	Hard of Hearing
LHI	Learners with Hearing Impairment
PWD	Persons with Disabilities
SL	Sign Language
SLI	Sign Language Interpreter
SLIs	Sign Language Interpreters
SLS	Sign Language Service
UNZA	University of Zambia
WFD	World Federation of the Deaf
ZAMISE	Zambia Institute of Special Education
ZAPD	Zambia Agency for Persons with Disabilities
ZNAD	Zambia National Association of the Deaf
ZNASLI	Zambia National Association of Sign Language Interpreters
ZSL	Zambian Sign Language

CHAPTER ONE: INTRODUCTION

1.1 Overview

Chapter one discusses the background of the study, statement of the problem, the purpose of the study, objectives of the study, study questions, significance of the study, delimitations, limitations of the study and definitions of terms.

1.2 Background

Globally, there is a high prevalence of disabling hearing loss. The World Health Organization (WHO, 2012) estimates that approximately 360 million (5.3% of the world population) are affected of disabling hearing loss. It further reports that Sub – Saharan Africa has the second highest percentage next to Asia. This implies that South and East Asia and sub-Saharan Africa remain the world regions with the highest prevalence of hearing loss both among adults and children. The reasons behind this high prevalent rate is attributed to the high rates of pre- and post-natal childhood infections such as chronic otitis media, meningitis, rubella, measles, use of ototoxic drugs and excessive noise (Gürkov R et al., 2008 p 19: Henderson, 2006 p 19: Mathers, et al. 2000). Among adults high rates are caused by higher rates of infections such as chronic otitis media, and meningitis, excessive noise, ototoxic drugs and ageing populations in developing countries which increase the prevalence of presbyacusis (WHO, 2012).

The 2010 census estimated that there are 2,619,000 disabled people in Zambia, 6.2% of this estimation are Deaf translating into about 162,378 (Central Statistics Office, 2010). It further stated that only 24.1% of the Deaf have been to secondary school and only 8% of them have been through tertiary education. Although the Hard of Hearing (HH) have a mild hearing impairment with a certain level of residual hearing, Fernandez-Viader & Fuentes(2004) hypothesized that many Deaf and Hard-of-Hearing students require the provision of an interpreted education in order to support classroom communication. This means the number of the deaf students requiring SLI can even be much higher if the HH group is included as beneficiaries of SLS.

The provision of tertiary education to Deaf students through inclusive schooling is nowadays more pronounced in Zambia. This inclusive philosophy could be traced back from 1990 Jomtien World Conference in Thailand that resolved that every person;

child, youth and adult shall be able to benefit from educational opportunities which would meet their basic learning needs, hence Education For All (EFA). Although EFA resolution did not explicitly state persons with disabilities, it was meant for all including persons with disabilities. The idea was to promote inclusion of persons with disabilities in mainstreams. In 1994 again the UNESCO World conference on Special Needs Education held in Salamanca, Spain, at which commitment to Education For All and the urgent need for providing education for children, youth and adults with special educational needs within the regular education system were made. Marginalization and exclusion of learners from an educational system was addressed at the Dakar World Education forum in April 2000. Dakar gathering noted that the key challenge was to ensure that a broad vision of Education for All as an inclusive concept is reflected in national government and funding agency policies. Against this backdrop in 2000 Inclusive Education was adopted in Africa as one of the strategies for meeting the goals of the Dakar framework for Action (Education for All Framework (EFA) 2000). The term inclusion therefore marked the new dawn on the rights perspective, social participation and paradigm shift in the disability perspective.

The inclusive education philosophy draws its importance from recognition and appreciation that all human beings have a right to social services regardless of their orientation. It accepts individuals as exceptional, recognizing that all have a right to develop their abilities or capabilities (Cameron & Valentine, 2001). However, adequate social participation in all social activities cannot be guaranteed in the absence of a conducive learning environment to enhance participation. It is for this consideration that Zambian government has adopted a number of legal and policy frameworks (Matafwali, 2007). The Persons with Disabilities Act of 2012 that guarantees accessibility to information and communication to all persons with disabilities including those with hearing impairments is one such legal instrument. The same Act further guarantees that the Ministry responsible for Education shall by statutory order designate public educational institutions to provide the necessary facilities and equipment to enable persons with disabilities to fully benefit from the public educational institutions. Although the Act does not explitictly state what the necessary facilities are, these facilities are intepreted to mean such facilities as Sign Language Service (SLS). The other legal instrument that aims at facilitating social participation is the constitution of Zambia Article 23 (3) that prohibits discriminating against persons with disabilities. It

provides for just and fair distribution of social benefits to meet the needs of people with disabilities. Such social benefits in accordance with this study, could be interpreted to mean such services as sign language interpreting.

Zambia has also fared well in terms of social policy as a vehicle for social partcipation. It began with the Educational Reform of 1977 with which the government had hoped to transform education as a potent instrument of providing real equality of educational opportunitiy among others (MOE,1997). This equality was also extended to persons with disabilities. Neverthless, the reforms were not backed by legislation and lacked government commitment to implement them.Thereafter,government adopted the National Policy on Education (Educating Our Future) of 1996 that recognizes the importance of people's right to education regardless of their abilities. Learners with hearing impairments were also expected to benefit under this policy. Nevertheless it was also not backed by legislation hence lacked government commitment to implement it.

There is the National Policy on Disabilities (2010) enacted with a view of ensuring full integration of persons with disabilities within the mainstream society such as inclusive tertiary education. This National Policy also strives to promote Sign Language Services to enhance social integration. There is also the Ministry of General Education Policy (2011) that requires that education should be provided through inclusive schooling where students with hearing impairments learn alongside the hearing students. All these legal and policy frameworks conform to the international instruments that Zambia signed and ratified- such as the United Nations Convention on the Rights of people with Disabilities which has subsequently been domesticated through then enactment of the Disability Act of 2012 No.6. The Salamanca Statement on Principles, Policy and Practices on Special Needs Education further provides the global policy bedrock on inclusion. At national level the Persons with Disability Act in Zambia of 2012, PART V: Sections 22 to 25 spells out, the need for an inclusive type of education system at all levels of education in Zambia and provision of quality education to children with disability.

Besides legal and policy frameworks, institutional frameworks also have been adopted to ensure a conducive environment is available for social participation of persons with disabilities. The Zambia Agency for Persons with Disabilities is by Disability Act of

2012 mandated with the responsibility of supervisory and monitoring role on implementation of the activities for social participation. The Act requires that Persons with Disabilities (PWDs) have access to information and communication. This means that all persons with disabilities including those with hearing impairments would have access to information and communication. The Act further explains that the Ministry responsible for education shall by statutory order, designate public educational institutions to provide the necessary facilities and equipment to enable persons with disabilities to fully benefit from the public educational institutions. At global level, the United State of America has the Individual with Disability Act (IDEA, 1997) that has provisions that mandated an end to educational discrimination against children with disabilities; required fair and appropriate public education and appropriate academic support services; and, in the case of deaf children, required school districts to take into consideration linguistic, social, and cultural needs related to functioning within the family and the Deaf community. The American Disability Act (ADA) and IDEA guarantees 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.

In New Zealand, several researchers (Hyde et al., 2009; Knox, 2006; Komesaroff, 2005; Russell & Demko, 2006; Sameshima, 1999) have concluded that the upswing in demand for tertiary education among deaf scholars has resulted in higher demand for SL facility than the country can supply. The resultant shortage of SL interpreting seems primarily due to the increase in demand for interpreters' services at the post-secondary level and the limited availability of interpreters with the appropriate skills to work effectively in tertiary education settings. Thus, it was assumed this enabling environment among other factors as stipulated above expected to increase the number of hearing impaired students accessing tertiary education in Zambia and create a shortage of sign language interpreters in terms of quality and quantity.

To ameliorate the shortage of SLS facility, the Ministry of General Education (2011) in its educational policy proposes the provision of necessary facilities and equipment to enable persons with disabilities to fully benefit from the public educational institutions. This seems to be a welcome development as it denoted that the Ministry of General Education would endeavor to facilitate the provision of SLS to deaf students to enable them access tertiary education. Thus far, this development is commendable as it seeks

to recognize the long traditional belief that the movement to educate Deaf students in tertiary institutions alongside with the non-deaf has been facilitated by interpreters (Shchein (1992). With this policy in place, the government has a firm belief that it would result into SLS being readily accessible to hearing impaired learners in those inclusive settings.

Nevertheless to enable SLS to be accessible to the HI students is one aspect and to have enough skilled and experienced facilitators is another. Therefore for SLS to be accessible means that the facility should not only be readily available, but it should be available and accessible in both quantitative terms and qualitative terms to provide excellent interpreting services to deaf consumers (Saur, 1992). Thus, although the important aspects of SLS such educational interpreting are widely acknowledged, most deaf students have expressed some concern over poor accessibility due to poor quality, shortage, and lack of experienced and trained interpreters.

In a study carried out in Zambia on Sign Language as a medium of instruction in education of the Hearing Impaired pupils, Mbewe (2009) concluded that the medium of instruction in use in deaf education in Zambia today is to a large extent what is termed as "total communication". Total Communication means of communication are voicing, mouthing, signing, gesturing, writing, pictures, pointing, lip reading, speech mimicking the mouth shapes, face expressions, just to mention a few are used. This means total communication is a combination of manualism and oralism. Neisser (1983) clarifies oralism as the education of deaf children through oral language by using lip- reading, speech and mimicking the mouth shapes and breathing patterns of speech instead of using Sign Language within the class room.

Several researchers such as Cummins, (2000) and Drasgow, (1998) have shown that using the mother tongue in the teaching of literacy skills in the second language is the best option. Similarly, the MoE in 2003 embarked on a language policy called the New Breakthrough to Literacy (NBTL). Children being are taught literacy skills in their first languages in the first year of schooling which in the case of deaf children would mean using Sign Language to learn English. NBTL programme involved learning the vocabulary, culture and grammar of their mother tongues before learning English. In deaf education, it is argued that the medium of instruction in the classroom should be Sign Language which was also their mother tongue. In Grade Three when pupils in

general classroom were switching from one spoken language to another as a medium of instruction, are expected to continue to use Sign Language as a medium of instruction and use it to learn the second, third or more spoken languages. Thus transferring linguistic skills acquired in mother tongue to a second language. In this case, children with hearing impairments in Zambia should use Sign Language throughout their academic life (Zambia Country Profile, 2006).

Kamukwamba (2017) is also of the view that deaf students learn new concepts easily when they are taught in Sign Language than other modes such as total communication at all levels of education. Additionally, Wakumelo (2010), observes that the profound hearings impaired children learn concepts through Sign Language and not by using Sign Language which is used by the community they live in. She further holds that hearing children in speaking communities learn concepts through their verbal languages and not through the written words and or spellings. Both Kamukwamba (2017) and Mwakumelo (2010) are supportive of the use of sign language in deaf education. It is also the view of Kamukwamba (2017.p28) that currently, there is no language policy to promote the use of Sign Language as a medium of instruction in schools for the hearing impaired.

However, it remains to be documented whether SLI should be in form of Total Communication or whether it should be strictly manual in other Sign Language oriented.

Moreover, there is emphasis by the Ministry of Education, Science, Vocational Training and Early Education (MoESVTEE) on teachers who teach learners with hearing impairments to engage as many classroom communication techniques such as sign language, voice amplification, finger spelling, lip-reading, writing, gesture, visual imagery and body language) as possible (MoESTVEE, 2002). MoESTVEE has even gone a step further by making it mandatory for each and every lesson to have talking walls and visual aids. Talking walls are educational resources that teachers hang on classroom walls to stimulate continuous visual influence. These include maps, diagrams, learners work, portraits and pictures. The MoESVTEE was therefore emphasizing with the need for the use of total communication in deaf education. However, it is the view of Kamukwamba (2017.p28) that currently, there is no language

policy to promote the use of Sign Language as a medium of instruction in schools for the hearing impaired.

Chibwe (2015) carried out a study on the effects of Sign Language variations to academic performance of learners with Hearing Impairments in some of Primary Special Schools on the Copper-belt and in Lusaka among learners and teachers in Primary Schools. The study concluded that Sign Language Variation has contributed towards the academic performance of learners with hearing impairments negatively. This is because sign language variations contribute to misunderstandings in sign language communication. One same sign might present two different meaning resulting in miscommunication. It also concluded that the learners with hearing impairments faced challenges to access SLS as a result of sign Language variations which are caused by various developmental stages of Sign Language acquisition, environment, different in culture, and training institutions one attended and teachers' incompetence.

However, the study was conducted only in segregated Primary Schools and its sample composed only of hearing impaired pupils, parents, senior and specialist teachers. The present study assumes that SLS accessibility is negatively affected by Sign Language variations among teachers, students and interpreters alike.

Mulonda (2013) carried a study on a situational analysis on the use of Sign Language in the education of the Deaf in Zambia at deaf schools, Magwero Basic School in the Eastern Province and St. Joseph's Basic School on the Copper-belt. The study also aimed at establishing the levels of training for teachers of the Deaf, and challenges which teachers, pupils and parents face in the education of the Deaf. The study established that most teachers of the Deaf were not adequately trained and lacked signing skills to teach Deaf children and that Sign language is not considered as a fully-fledged language for the Deaf but simply as a remedial measure of communicating with the Deaf. However, the study sample was limited to deaf pupils, parents, teachers, standards Officers and NGOs, focused on signing competence of specialist teachers and was carried out at a segregated special school. No sign language interpreters were included. The study did not take into consideration Sign Language interpreting services.

Omugur (2007) carried out a study on Sign Language Interpreting Services in inclusive secondary schools in Uganda. The study analyzed four sign language interpreters

employed at some secondary schools to determine the extent of accessibility of SLS to Deaf students at secondary school inclusive classrooms. Hearing pupils, teachers and sign language interpreters were used as respondents in the study. The study identified such factors as negative attitudes, inadequate development of sign language communication among educationalists, lack of interpreter professional development and ignorance on the part of classroom teachers as some of the challenges to SLS accessibility by Deaf students in mainstream classrooms.

However, the study by Omugur (2007) only looked at challenges on SLI operation in secondary schools and made some recommendations from this point of view on how best those challenges could be minimized. These challenges were mainly operational issues of sign language interpreting. The study does not document some legal, social and institutional frameworks issues which are also important components that could facilitate Sign Language accessibility. The study also assumes that those challenges could to a limited extent also be applicable to deaf students in tertiary institutions in Zambia.

However, there are little or no studies that have been carried out in Zambia to establish accessibility of SLS to deaf students in the tertiary institutions in Zambia.

1.3. Statement of the problem

From the review of literature, there are adequate laws and policies in Zambia concerning the accessibility of educational services for deaf learners. With these enabling laws and policies, more deaf students are likely to enroll in tertiary institutions. Therefore the demand for quality and professional interpreting service is expected to increase (MoE, 2011: Disability Act, 2012).

Despite having an enabling environment several complaints from the deaf students on lack of Sign Language Services (SLS) in tertiary education institutions were received. One of the Deaf said, “The lack of SLS in tertiary education hindered me from pursuing my dream to become a lawyer (Musukwa, 2012).

The few studies that have been carried out such as Chibwe (2015) and Mulonda (2013) have mainly focused on special schools for the Deaf and signing competences among specialist teachers in primary and secondary schools. These studies also made

recommendations on how best deaf education could be improve from point of view of segregated special schools.

Therefore this study sought to investigate the accessibility of SLS to deaf student in tertiary institutions.

1.4 Purpose of the Study

The purpose of the study was to investigate the accessibility of SLS among deaf students at the University of Zambia and Zambia Institute of Special Education.

1.5 Objectives

The objectives of the research were as follows:

1.5.1 To investigate the accessibility to which deaf students access Sign Language Services in tertiary institutions,

1.5.2 To establish the benefits of Sign Language Services to deaf students at tertiary education level,

1.5.3 To explore the challenges in the provision of Sign Language Services at tertiary level,

1.5.4 To establish measures put in place to ensure sustainability of Sign Language Services in tertiary institutions in Zambia.

1.6 Research questions

Specific research questions that guided the research were:

1.6.1 How accessible is SLS to the deaf students in tertiary institution in Zambia?

1.6.2 What benefits can be derived from the use of SLS in tertiary institutions?

1.6.3 What challenges in the provision of SLS in tertiary institutions?

1.6.4 What measures have been established to sustain SLS in tertiary institutions?

1.7 Significance of the study

The importance of the study was conducted on the premises that SLS was a new phenomenon in Zambia and not much had been researched on the SLS especially in tertiary institutions. The significance of this study could be drawn from the understanding that the study had brought to the fore some challenges to accessibility of interpreting facility in higher institutions. It has also made some workable recommendations to some of the challenges. It is hoped that its findings would inform policy makers and the general public on how best the deaf students could be integrated in tertiary institutions and how best the provision of SLS could be improved.

1.8 Delimitations

The study was confined to two tertiary institutions in one province namely Lusaka Province. For more exhaustive results all ten provinces should have been studied. However, this was not possible because of financial, time and other logistical constraints

1.9 Limitations of the study

Limitation according to Orodlio (2008), is an aspect of the study that the researcher knows may adversely affect the results or generalizability of the results of the study, but over which he or she has no direct control over. In this study, the following factors therefore, constituted limitations of the study: time constraint that the duration for data collection with the institutions prolonged because of the school holiday. The two study sites were based in Lusaka hence its findings may not be generalized to other part of the Zambia.

1.10 Conceptual Framework

The study was based on the factors influencing accessibility of SLS in the inclusive classroom given that all variables are manipulated adequately. The conceptual framework indicates the effect of independent variables on dependent variables such as the availability of quality sign language interpreter (SLI) could lead to classroom active interaction in inclusive classroom among lecturers, Deaf and hearing students while

lack of quality SLI could impede active classroom interaction. The main variables under study are reflected in Figure 2.1.

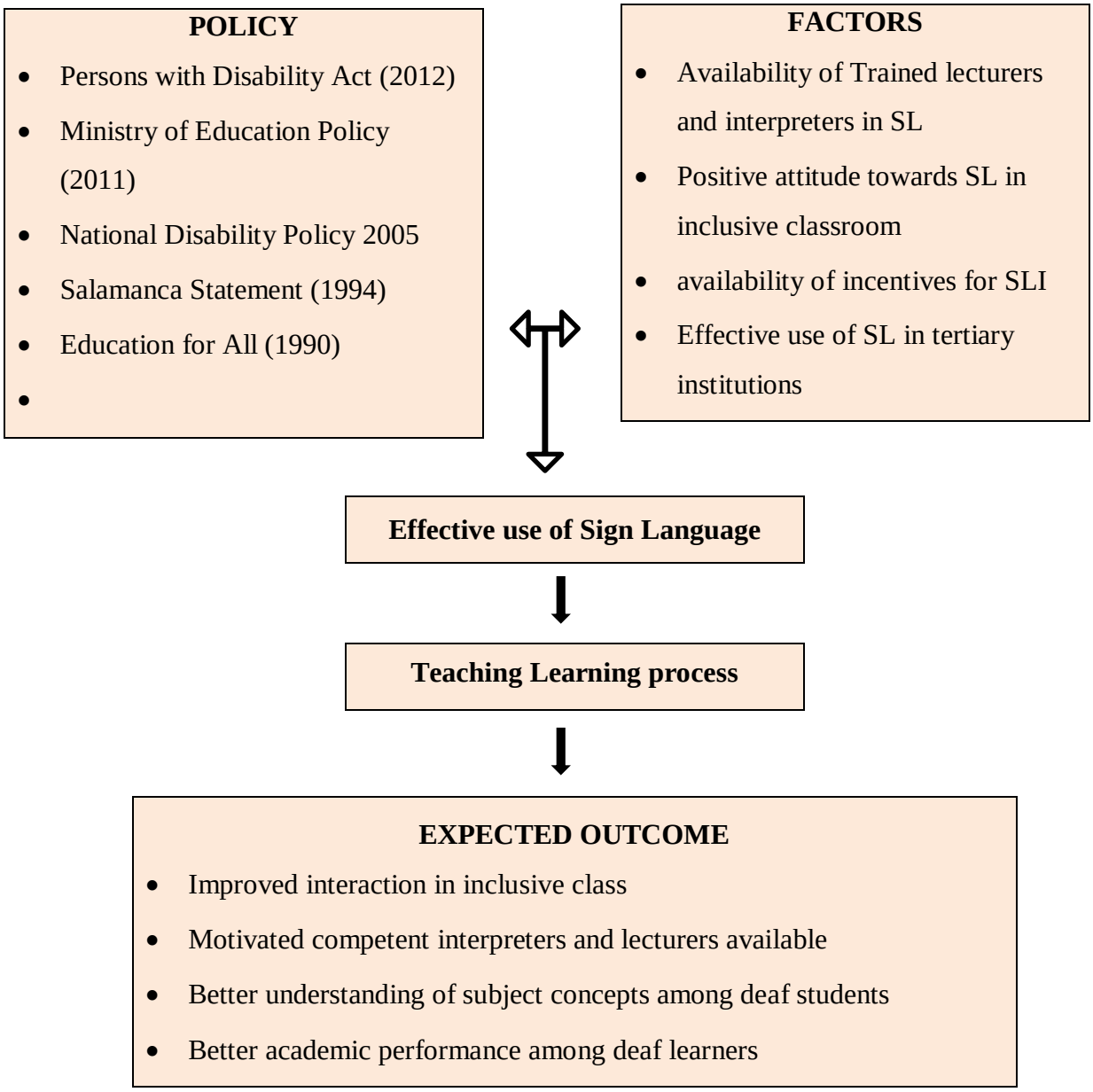

Figure 2.1: Factors influencing the use of sign language service in tertiary Institutions

Figure 2.1 shows that Sign Language Service is influenced by independent variables like policy, factors like availability of SLS and if these factors are affected there will be limited accessibility to use of Sign Language in tertiary institutions.

1.11 Definition of key terms

Accessibility: In this study accessibility means the ease with which SLS is available in terms of quantity and quality.

Total Communication: means the use of oralism and manualism system such as pointing, signing, voicing, speaking, mouthing and spellings in the communication process to convey thoughts and ideas to communicators.

Deaf people: people who may be Deaf or hearing impaired but predominantly manifest the deaf culture through their use of Sign Language.

Educational interpreter: means a person who uses Sign Language in an administrative unit, a state-operated program, or an eligible facility for purposes of facilitating communication between users and nonusers of sign language and who is fluent in the languages used by both deaf and non-deaf persons.

Sign language Services (SLS): in this study means the provision of Sign Language services through the use of either Sign Language interpreters or lecturers.

Zambian Sign Language: Sign Language used in Zambia by the Deaf and hearing people.

1.12 Summary

This chapter has provided the background to the study. It has shown legal and policy frameworks adopted by the government to ensure a conducive environment for SLS delivery. It has also provided the institutional framework the government has put in place to guarantee social participation of persons with disabilities. It has brought to the fore some of the studies so far carried out in Zambia. It has stated that these studies are limited to the extent to which SLS is accessible through special teachers signing competence. It has also shown that these studies were carried out at segregated Primary and Secondary Schools. It has also brought to the fore one study undertaken in Uganda that focused on accessibility of SLS at Secondary Schools through Sign Language Interpreting. It has further argued that although the Ugandan study is almost similar in all aspects with the present study, the former focuses on Secondary schools not tertiary institutions. The chapter has also outlined the objectives and the research questions of

the study that facilitated the collection of data. It has also outlined the purpose of the study which is to find out to what extent SLS were accessible through sign language interpreting in Zambia. The chapter further stated that the significance of the current study is to highlight some challenges, factors and make recommendations to facilitate accessibility of SLS. Finally the chapter concludes by stating the limitations of the study. These include the limited study sites and choice of respondents. The next Chapter will deal with relevant literature related to accessibility of SLS.

CHAPTER TWO: LITERATURE REVIEW

2.1 Overview

Literature review was discussed according to themes based on the study objectives as follows: (1) To investigate the accessibility to which deaf students access SLS in tertiary institutions, (2) to establish the benefits of SLS to deaf students at tertiary education level, (3) to explore the challenges in the provision of SLS at tertiary level, (4) and to establish measures put in place to insure sustainability of SLS in tertiary institutions in Zambia.

In defining the concept literature review, Kombo and Tromp (2006.p70) postulated that literature review is a "systematic, critical, and summary of existing literature that is relevant to the research topic". It entails reading appropriate selection of available literature such as books, magazines, articles, dissertations and newspaper reports in which new events have been reported and opinions expressed on the matter under investigation. Accordingly, the review was done as presented below.

2.2 The concept of Hearing Impairment

The concept Hearing Impairment has been defined by several scholars taking into consideration such factors as the degree of hearing loss, the onset of hearing loss and the type of the hearing loss to determine its meaning. The concept covers the entire range of auditory impairment from mild to profound or severe hearing loss (Moors, 1996). Tigerman (1997) in Okwaput (2000), tabulated hearing levels from mild to profound measured in decibel as follows:

Hearing level	Category
26-40 db	mild
41-55 db	moderate
56-70 db	moderately severe
71-95 db	severe
96 decibels and above	profound

Although the term Hearing Impaired (HI) is the preferred among educators to refer to Deaf people, in the Deaf Community the term "Deaf" is widely used. The largest groups of people who are considered "Deaf" are referred to as Hard of Hearing (HH). These groups have a mild hearing impairment with a certain level of residual hearing which can be stimulated by the use of a hearing aid.

Hard of Hearing however can process linguistic information with or without amplification. Kirk *et al* (1989) notes that sign language interpreters face challenges with the hard of hearing group as they mostly depend on lip-reading. Simultaneous interpreting also dictates that sign language interpreters should use the element of speaking and signing simultaneously to enable the HH group access interpreted information. This style of interpreting often interferes with interpreter's perception ability and message delivery. However, despite hearing ability, HH like the profoundly deaf students require SLS facility. In supporting this assertion, Fernandez-Viader & Fuentes (2004) argued that for many Deaf and Hard-of-Hearing students, provision of an interpreted education is a requirement in order to support classroom communication. This implies that the number of deaf students requiring Sign Language Interpreting could be much higher than anticipated hence the importance of this study.

2.3 The concept of Sign Language

Sign language is a language recognized as a fully developed human language, independent of oral languages (Armstrong et. al, 1995). Sign Language differs from oral languages in that it is conceived through sight while oral languages are purely auditory. It is a visual-gestured language which involves the use of hands, face expressions such as eyes, mouthing, mimics and body movements (World Federation of the Deaf, 1993).

Sign Language is used in interactive communication with or by persons who experience difficulties in spoken communication. There is also other manually coded system called a manual alphabet or finger-spelling that is used alongside sign language. It has a linguistic structure, which can be learnt through interaction with people in the deaf community. It has its own special characteristics that are important to know in order understand how it is used in greater detail.

In Zambia, the standard Sign Language in use is known as Zambian Sign Language (ZSL). Urquhart and Jean-Baptiste (2009) postulated that Zambian Sign Language is a language in the like manner in which English and local languages like Cinyanja or Chibemba are languages. Zambian Sign Language is not universal in the sense that it is not identical to American Sign Language (ASL) or British Sign Language (BSL). In other words ZSL in comparison to other Sign Languages like ASL is not similar. Sign Language (SL) has its own phonology, vocabulary and grammar and this assertion agrees with Bloom and Layeh (1978) Theory that a language is sub-divided into three important components namely content, form and use. This review underscores the importance of sign language as it is the language being used by those with difficult with spoken communication and it is the main language being used in the interpreting process.

The review above also underscores why SLSs should be well trained in the use of Sign Language and English as they are the language being used in the interpreting process in tertiary education in Zambia. Saur (1992) notes some of the challenges deaf consumers encounter to access quality interpreting services as lack of special skills, incentives and training on the part of interpreters. Therefore lack of signing skills attributed to Sign Language interpreters makes it difficult for interpreters to interpret clear instructions and information to deaf students in school. However, it is yet to be established through this study whether these requirements are available as enabling environment for SLI to take place in accordance with conceptual framework or weather these requirements are lacking therefore are challenges to deaf students accessing SLI in tertiary institutions.

Moreover, Mbewe (2009) continued further to argue that most teachers who teach learners with hearing impairment in Zambia are not specialized in Sign Language signing skills making it difficult for learners with hearing impairment to understand them. In other words it implies that most hearing teachers have little or no knowledge of the pedagogical implications of teaching Sign Language skills to learners with hearing impairment whether by means of oral or sign language instruction (Bell, 2005).

In a study carried out in Zambia on Sign Language as a medium of instruction in education of the Hearing Impaired pupils, Mbewe (2009) concluded that the medium of instruction in use in deaf education in Zambia today is to a large extent what is termed as "total communication". Total Communication means of communication are voicing,

mouthing, signing, gesturing, writing, pictures, pointing, lip reading, speech mimicking the mouth shapes, face expressions, just to mention a few are used. This means total communication is a combination of manualism and oralism. Neisser (1983) clarifies oralism as the education of deaf children through oral language by using lip- reading, speech and mimicking the mouth shapes and breathing patterns of speech instead of using Sign Language within the class room. MoESVTEE is of view of the need for teachers who teach learners with hearing impairments to engage as many classroom communication techniques such as sign language, voice amplification, finger spelling, lip-reading, writing, gesture, visual imagery and body language) as possible (MoESTVEE, 2002).

Several researchers such as Cummins, (2000) and Drasgow, (1998) have shown that using the mother tongue in the teaching of literacy skills in the second language is the best option. Similarly, the MoE in 2003 embarked on a language policy called the New Breakthrough to Literacy (NBTL). Children being are taught literacy skills in their first languages in the first year of schooling which in the case of deaf children would mean using Sign Language to learn English. NBTL programme involved learning the vocabulary, culture and grammar of their mother tongues before learning English. In deaf education, it is argued that the medium of instruction in the classroom should be Sign Language which was also their mother tongue. In Grade Three when pupils in general classroom were switching from one spoken language to another as a medium of instruction, are expected to continue to use Sign Language as a medium of instruction and use it to learn the second, third or more spoken languages. Thus transferring linguistic skills acquired in mother tongue to a second language. In this case, children with hearing impairments in Zambia should use Sign Language throughout their academic life (ZAFOD, 2006). It is expected that deaf students should continue to learn through sign language as their medium of instruction from nursery to university.

Kamukwamba (2017) is also of the view that deaf students learn new concepts easily when they are taught in Sign Language than other modes such as total communication at all levels of education. Additionally, Wakumelo (2010), observes that the profound hearings impaired children learn concepts through Sign Language and not by using Sign Language which is used by the community they live in. She further holds that hearing children in speaking communities learn concepts through their verbal languages and not

through the written words and or spellings. Both Kamukwamba (2017) and Mwakumelo (2010) are supportive of the use of sign language in deaf education. It is also the view of Kamukwamba (2017.p28) that currently, there is no language policy to promote the use of Sign Language as a medium of instruction in schools for the hearing impaired.

However, it remains to be documented whether SLI should be in form of Total Communication or whether it should be strictly manual in other Sign Language oriented.

2.4 History of Sign Language Interpreting

History of Sign Language interpreting is as old as the existence of deaf persons who need to communicate with non-signing people. During early times evidence available from early records points to the fact that in Canada and the United States interpreters were mostly hearing relatives of a deaf person, teachers of the deaf, or clergy (Groce, 1985; Frishberg, 1986). In the USA before the 1950's there were no interpreter preparation programs or sign language classes, however the linguistic interest in ASL began with William Stokoe's research at Gallaudet University during that decade.

At international level, in America history of professional sign language interpreting can be traced back to a national meeting at Ball State Teachers College in Muncie, Indiana in 1964. At this landmark gathering, the interpreters who were initially hired to interpret at this historic conference ended up staying to discuss the general growing demand of sign language interpreters and to establish a list of qualified interpreters (Humpries & Alcorn, 2001). Shortly thereafter the National Registry of Professional Interpreters and Translators for the Deaf was founded, but its name was later changed to the Registry of Interpreters for the Deaf (RID). RID was incorporated in 1972. The founders of the organization drafted bylaws, a constitution, a national list of interpreters, began discussing an evaluation and certification process, and actively worked to educate the public about the need for and use of sign language interpreters.

In New Zealand, there were only three trained interpreters working and they were trained in 1985 by an American, Dan Levitt, who provided a three-month crash course, supported by the New Zealand Association for the Deaf (Dugdale 2001).

In Zambia just like in USA, initially teachers, parents and siblings of the deaf were used as interpreters. It was only in the early 1990's with the arrival of the Finnish Association of the Deaf experts that SL training program was started. Initially 10 Sign Language Interpreters were trained. The Development Cooperation between Zambia National Association of the Deaf and Finnish Deaf Association lasted from 1988 until 1998(ZNAD Brochure, 2010). However, it remains to be established whether the training being provided since then is adequate for the required assignments in tertiary institutions.

Kanyanta (2003) reports that the Zambia National Association of the Deaf (ZNAD) entered into an agreement with the Danish Deaf Association in Denmark to continue from where the Finnish Association of the Deaf stopped. ZNAD recruited four Ministry of Education teachers and two ZNAD personnel to train as Sign Language experts in the area of Sign Language teaching and SLI training in East Africa in Uganda. Danish instructors provided course work and supervised the teaching practice during the two year period. Upon completion, the trained Sign Language experts returned home to train Training of Trainers (TOT).Zambia National Association of the Deaf has to date continued conducting SL training activities on a three month basis using the same personnel trained under the Danish project. Some of hearing students were pioneers of the establishment of Zambia National Association of Sign Language Interpreters (ZNASLI) (ZNAD Brochure, 2010). This study is however interested to establish how SLI is accessible to deaf students as a result of training those Trainer of Trainers provided to SLIs to enable deaf students' access the facility in tertiary institutions in Zambia.

2.4.1 Accessibility of Sign Language Interpreters in education

In determining the accessibility of educational interpreting, Ramsey (1997) proposed the need to consider the interpreter, student, instructor and the setting in which SL interpreting occurs. According to history, educational provision for learners with hearing impairments has not been viewed as a success. Initially, the traditional method called Oralism was applied in deaf education. This method focused on the use of spoken languages as a medium of instruction and prohibited the use of sign languages. It was widely used for teaching academic subjects to learners with hearing impairments. Nevertheless, during the 1970 oralism school gave way to the total communication

approach (Beattie, 2006). This method utilized the simultaneous manual and oral components. Educators believed that the communication barriers that learners with hearing impairment encountered in the inclusive institutions could be broken simply by employing total communication as a means of communicating with them. However, this study is yet to document how accessible SLI is to deaf students in tertiary institution through the use of total communication.

Omugur (2007) carried out a study on Sign Language Interpreting Services in inclusive secondary schools in Uganda. The study analyzed four sign language interpreters employed at some secondary schools to determine the extent of accessibility of SLS to Deaf students at secondary school inclusive classrooms. Hearing pupils, teachers and sign language interpreters were used as respondents in the study. The study identified such factors as negative attitudes, inadequate development of sign language communication among educationalists, lack of interpreter professional development and ignorance on the part of classroom teachers as some of the challenges to SLS accessibility by Deaf students in mainstream classrooms.

However, the study by Omugur (2007) only looked at challenges on SLI operation in secondary schools and made some recommendations from this point of view on how best those challenges could be minimized. These challenges were mainly operational issues of sign language interpreting. The study does not document some legal, social and institutional frameworks issues which are also important components that could facilitate Sign Language accessibility. The study also assumes that those challenges could to a limited extent also be applicable to deaf students in tertiary institutions.

Mulonda (2013) carried a study on a situational analysis on the use of Sign Language in the education of the Deaf in Zambia at deaf schools, Magwero Basic School in the Eastern Province and St. Joseph's Basic School on the Copper-belt. The study also aimed at establishing the levels of training for teachers of the Deaf, and challenges which teachers, pupils and parents face in the education of the Deaf. The study established that most teachers of the Deaf were not adequately trained and lacked signing skills to teach Deaf children and that Sign language is not considered as a fully-fledged language for the Deaf but simply as a remedial measure of communicating with the Deaf. However, the study sample was limited to deaf pupils, parents, teachers, standards Officers and NGOs, focused on signing competence of specialist teachers and

was carried out at a segregated special school. The study did not take into consideration Sign Language interpreting services.

Chibwe (2015) carried out a study on the effects of Sign Language variations to academic performance of learners with Hearing Impairments in some of Primary Special Schools on the Copper-belt and in Lusaka among learners and teachers in Primary Schools. The study concluded that Sign Language Variation has contributed towards the academic performance of learners with hearing impairments negatively. It also concluded that the learners with hearing impairments faced challenges to access SLS as a result of sign Language variations which are caused by various developmental stages of Sign Language acquisition, environment, different in culture, and training institutions one attended and teachers' incompetence.

However, the study was conducted only in segregated Primary Schools and its sample composed only of hearing impaired pupils, parents, senior and specialist teachers. The present study assumes that SLS accessibility is negatively affected by Sign Language variations among teachers, students and interpreters alike.

Fernandez-Viader & Fuentes (2004) note educational interpreters need to have special professional knowledge and skill and professional qualifications for SLS as SLI work is a complex assignment. Whilst this study acknowledge the importance of SLIs to have special professional knowledge such as specialization in subjects being interpreted, the need for signing –voicing skills and professional qualifications, it is yet to examine whether these requirements are available among SLIs in tertiary institutions in Zambia. It is also yet to determine how the availability of these factors influences SLS accessibility to deaf students in tertiary institutions. This is in line with the conceptual framework of this study that guides that when favorable factors such as subject knowledge on the part of SLI are available, SLS would be accessible to deaf students.

Additionally, Sign Language Interpreters are expected to be bilingual, meaning that they are expected to be fluent in two or more languages of communication, thus in this case they need to be fluent in the Zambia Sign Language (ZSL) and spoken languages like English and Chinyanja. This assertion is in line with Bloom and Layer (1978) Language Theory that communicators should be bilingual. Interpreters should be bi-cultural professionals as well who are sensitive and responsive to environmental factors

which foster the message to be conveyed. They are expected to take the message as expressed in the source language and express the meaning in the target language to enable it to be accessible to the users. Moreover, SLIs are expected to follow a specific code of ethics in their work. In the tertiary institutions educational interpreting can occur anywhere such as in the classroom during lectures or tutorials, laboratory and dining hall. These are some of the places where students with hearing impairments learn and where interaction takes place with those without signing skills. However, this study is yet to determine whether SLIs are bi-lingual and Bi-cultural in Sign Language and English the main languages used in the interpreting process in tertiary institutions. These competencies assist in delivering SLI to deaf students.

Interpreting is an interactive exchange of information between two languages. In the process interpreters spontaneously create a target interpretation and maintain the content and intent of the source material (Cerney, 2005). Sign language interpretation process requires that the interpreter comprehends the source language, drop the original lexical form and syntax in order to determine the meaning of the overall message, and then restructure this meaning using the target language (Cerney, 2005; Colonomos, 2004;Seleskovitch, 1978) or the source material to be interpreted. Their knowledge and competence in the target language enable them to have a wider choice of signs, or words, and other aspects such as tone. This contention is in line with Bloom Language Theory which states that SL interpreters should be competent in the source and target languages for effective communication to occur. However, being competent in bilingual alone is one thing. It remains to be established whether such factors as a conducive physical environment like as good lighting, good seating arrangement, positive attitudes, laws and policies in place would influence SLI accessibility to deaf students.

Therefore, SL interpreting service to be effective Sign Language interpreters should be bilingual so as to facilitate communication among Deaf students, lecturers and non-signing hearing students. Richard et al (1992) in supporting this assertion argued that Communication between the Deaf and hearing people, who do not understand the common language, often got support from Sign Language Interpreters. Sign language interpreters are typically hearing people who translate either voiced information or signed information from a person sending the information into any linguistic

vocabulary, to facilitate communication between the Deaf and hearing people who do not understand a common language.

At international level, in a study Marschark et al. (2004) carried out an experiment to determine factors affecting comprehension of SLI among Deaf students. Their study sample composed of 17 students reported learning to sign from birth and 31 reported learning it later. In the study they established that students who reported starting to learn sign at one year of age or before obtained significantly higher scores on the comprehension test than the later signers (81% vs. 73%), although they still scored significantly lower than the hearing students (89%). They also found out that content knowledge is only one of several factors affecting comprehension of sign language interpreting. Therefore student sign language skill, interpreter skill and the setting (Johnson, 1991) are some of the factors that interact in the interpreting process.

Mayberry & Eichen (1991) carried out a study to determine the long-term benefits of early sign language acquisition. A similar analysis was conducted using the data from the Marschark et al (2004). In preparatory study in which students saw two different lectures. Using comprehension test scores on two content-knowledge pretests and both comprehension tests, no differences were observed between the comprehension of 23 students who had two deaf parents and 60 others who had either one or no deaf parents. The same result was obtained if a criterion of one rather than two deaf parents was employed. The implication this study has on the present study is that all deaf students regardless of the stage at which sign language was acquired could benefit from sign language interpreting. However, this remains to be established.

Berent (2003) notes that Sign languages and spoken languages have contrasting modalities, while spoken languages are conveyed through an auditory channel, sign language are communicated through a visual-spatial sense. It is also followed that in interpreting process, the placing of lexical items from one language into the grammatical structure of another is normally viewed as a sequential process. However, since Sign language interpreters are bilingual and bimodal they are able to insert an English morpheme into a Zambian Sign Language (ZSL) sentence. The English morpheme can come in the form of a silent production on the lips of the bimodal, while the hands can produce a ZSL sign. Nevertheless, given the fact that we possess only one

set of oral articulators, it is physically impossible for a bilingual speaker to simultaneously say:-

"My mother in English and "Ba mama ba ine in Chibemba".
In the sentence My mother...

In contrast, ZSL-English bilingual could articulate in English 'My mother' either by whispering or mouthing, while concurrently producing the ZSL signs for 'my mother.'

For Example:

ZSL sentence 1: YESTERDAY MY MOTHER ARRIVED.

Mouthing sentence 2: +M……□ (whispering, mouthing)

Simultaneous mouthing and signing is not restricted to ZSL-English or ASL-English samples. SL interpreters can mouth Chibemba words while signing the same words simultaneously. The special characteristic spatial nature of sign language permits layering ofmorphosyntactic information from two different languages such as sign language and English.

In addition, the entire process is very interactive, and places the interpreter in a strategic position with heavy responsibilities and decision-making. Because every interpreter's experience is different and skill level in ZSL and English varies, no two interpreters can render the same target interpretation despite being given the same source.

Moreover to provide a conducive environment, Zambia has adopted the philosophy of inclusion in education. The philosophy of inclusive education has captured the field of education during the 1990s. The twentieth century therefore marked the new dawn on the rights perspective, social participation and a new disability perspective (Levin, 1994). The term referred to a dynamic process of people's participation within their social networks, regardless of their abilities. This means that Deaf students participation in inclusive tertiary institutions enhance social participation. It also means that modern inclusion takes into consideration new disability perspective based on equal social participation.

In this respect, the World Conference on Special Needs Education in Salamanca in 1994, with the adoption of the Salamanca Statement and Framework for Action on

Special Needs Education, represents the event that definitely set the policy agenda for inclusive education on a global basis (UNESCO, 1994). According to the UNESCO documents, inclusive education: a) challenges all exclusionary policies and practices in education, b) is based on a growing international consensus of the right of all children to a common education in their locality regardless of their background, attainment or disability, and c) aims at providing good-quality education for learners and a community-based education for all. Inclusive schooling recognizes that special learning needs can arise from social, psychological, economic, linguistic, cultural as well as physical (or disability) factors; hence the use of the term children with special needs' rather than children with disabilities'(Smith, 2004; Ainscow, 1991; and Rogers, 1993).

According to Skjorten, (1996), inclusive education means;

> "... Adjusting the home, the school and society so that all children can have the opportunity to interact, play, learn, and experience the feeling of belonging, and develop in accordance to their potentials and difficulties and thereby obtain a good quality of life within their natural environments."

Skjorten (1996) advocated for change of attitudes and evaluation of the existing knowledge and school structures to accommodate learners with special educational needs. Further predicted that when that does not happen, the service of Sign Language Interpreters as the third parties meets some challenges.

Therefore, governments world over, including Zambia, are enacting laws and social policies that are meant to incorporate children with disabilities into the mainstream society by ensuring that all people are accorded equal opportunities in all spheres of society (MOE, 1996).

The special Rapporteur in a UN Human Rights report made the following observations on accessibility:

> *"The Zambian kwacha is accessible to blind persons, that sign language interpretation is provided in the main news program twice a day and that a few mainstream public health awareness-raising campaigns are accessible to deaf persons. However, there are no medicines or other essential products in Braille, the Zambian sign language has not yet been recognized as an official language,*

and interpretation services for deaf persons are non-existent in public hospitals, police stations, courts and other public locations, thus denying them the possibility of communicating effectively and accessing basic goods and services."(UN 2016, p10)

However, although laws and policies such as Education Act of 2011 and Disability Act of 2012 acknowledge the importance of sign language interpreting, it is not clear how accessible the facility is to deaf students in tertiary institutions.

2.4.2 Benefits of Sign Language Service to deaf students

Public schools, some colleges and universities need to provide SLS for deaf students who are linguistically, socially and academically ready to benefit from it. It is estimated that deaf students who are placed in academic settings with excellent interpreters and whose classroom have been adapted to meet their visual needs may perform better. Fernandez-Viader and Fuentes, (2004) argue that for many Deaf and Hard-of-Hearing students provision of an interpreted education is a requirement in order to support classroom communication. Fernandez-Viader and Fuentes further emphasized interpreting as one aspect of providing access to all teachers and peers communication in a school. They maintained that the presence of interpreters allows Deaf students to learn in the same manner as their hearing peers in inclusive classes. Therefore sign language facility enables deaf students to have access to general classroom curriculum as their typical peers. This factor could be one of the benefit of SLI.

In another study, Fernandez-Viader and Fuentes, (2004) interviewed deaf students on the important role of SL interpreter and established that sign language interpreter play an important role in inclusive education as the students were able to follow the teachers' instruction and communication best when there are interpreters to assist them. Student respondents in the study reported that they are always frustrated in the absence of interpreters. The study further indicated that hearing impaired students have cordial relations with their deaf and hearing students. It verified the vision of Thomas (1997) who explained inclusion as a viewpoint of acceptance and love, presenting framework with which all students are valued and provided equal opportunities. As noted in this paragraph, deaf students acknowledge the importance role interpreters play in enabling deaf students to follow instructions and communication in classroom communication,

the mere presence of SLI as a motivator which results in cordial relations with hearing peers and importance of inclusion in that regard, this study is yet to document the benefits of SLI and factors that facilitate it.

Therefore, for effective SL interpreting service delivery to deaf students, interpreters require special skills (Spur, 1992), incentives and training. Special skills are necessary as SL interpreting is a complex assignment that requires special skills. SL interpreters should have listening skills to provide effective interpreting for both signed and voiced communication. In addition SLIs should have special expressive skills to be able to communicate messages from the source to the target without minimal difficulty such as sign production, finger spellings, good articulation and pronunciations. However, the present study assumes that the Zambian sign language interpreters too might have listening, signing and speaking skills challenges to be able to provide effective SLI service and enable deaf students access the facility in tertiary institutions.

In a study, Schein et al. (1991) in their study findings showed that one reason for high level of academic competitiveness among the deaf and hard of hearing and their success was driven by the availability of interpreting services. This shows that one of the merits of having SLIs in tertiary education is to enhance academic competitiveness among hearing impaired students This study assumes that access to sign language interpreting might enhances competitiveness among deaf students in tertiary education and is one of the benefits deaf students could derive from SLI.

Another study by Barefoot (2003) reported that when classroom communication was effective, learning was easier, goals were met, opportunities emerged for expanded learning, learners and teachers connected better and more positive perceptions influenced the overall learning experience. This implied effective SL interpreting delivery was a mover of effective learning and teaching thus promotes academic performance.

2.4.3 Challenges in the provision of interpreting facility in tertiary institutions

Although for many Deaf and Hard-of-Hearing students the provision of an interpreted education is a requirement in order to support classroom communication (Fernandez-Viader & Fuentes, 2004), there are some factors that limit accessibility to SLS In order to establish the challenges that impede accessibility of SLS in tertiary institutions, it is

necessary to consider the views of key players in the interpreting process. Ramsey (1997) argued that questions concerning the effectiveness of educational interpreting need to consider the interpreter, student, instructor and the setting.

Some of challenges are attributed to the classroom setting. In their study Schick, Williams, & Bolster, (1999), identified that many Deaf students accessed general education curriculum in an inclusive school environment in part, by using the services of a sign language interpreter(s). Those researchers argued that even with the services of a highly qualified interpreter, it was believed that, full access by students with hearing impairment to the content and social life in a hearing classroom or school environment, could be challenging to sign language interpreters. Schick et al.(1999) criticized that representation of all classroom communication as extremely challenging especially when class room communication is distributed amongst many speakers, and an understanding of the content requires an interpreter, to integrate simultaneously what many individuals have to say, not only the teacher.

The above observation reinforces a challenging fact to represent all kinds of discourse which often results in the shift in register as well as the speaker. In this case much time lag can be registered, a process this tires the interpreters. Schick et al (1999) maintained that this type of information seemed difficult for the interpreters to convey as accurately as possible without distorting its meaning. There is therefore need for lecturers to have a good class management. This allows for a much clearer message, as finger spelling of longer words can be difficult to make out, especially at speed or from a distant seat.

Minimal language competence among deaf students could impose a challenge in the interpreting process. A major constraint in an effective interpreting is that each person in the communication setting must already have a language. By virtue of their isolation from the hearing community and linguistic vocabulary, deaf students were bound to pose challenges for the interpreters during communication. These categories might have developed their "home signs "or local gestures and therefore comprehending interpreted messages becomes problematic. McCay et al (1990) admitted that Deaf learners, who enrolled in school at a later age with no linguistic backgrounds, posed the most difficulties to the work of Sign Language Interpreters. In this case, it is an obligation for all Sign Language Interpreters to adjust their signing and voicing styles to suit the levels of their understanding. However, in a classroom situation, repetitions and

pardons disrupts the communication process in this regard. McCay et al (1990) acknowledged that this had an effect on the interpreters' span of short term and long term memories and lag time that causes a delay in message delivery from the source language to the target language or audience. This implies that relevant information is sometimes lost or ignored in this regard. This implies sign language interpreting can pose a challenge in classroom if consumers didn't have sign language. This situation depicts to Zambia as Zambian Sign Language is not yet taught as a school subject in school.

In the study by McCay et al (1990) argued that Deaf people with minimal language competence are those who did not speak well, did not read or write well, and are therefore not familiar with English as a common medium of instruction and were not easily followed by interpreters. McCay et al (1990) did not however, emphasize that English as a foreign language from the mother tongue which needed to be learnt just like sign language. This did not mean that either the deaf or Interpreters were not intelligent.

In other instance interpreting settings can impose a challenge. The designs of the classroom are not user-friendly to students with disabilities (Alahmadi, 2001). For instance deaf students to benefit from inclusive schooling careful attention should be given to classroom space, design, location, lights, elevations and supportive material (Schmidt et al (2008), as cited in Alqaryovti, (2010). In this way deaf students would be able to access SLS.

Fuller, et al (2004) conducted a study on inclusive education in the United Kingdom and reported that there were many obstacles faced by the deaf students at university level. The results of their study indicated that there were many barriers to inclusive instruction such as the fast rate of teachers' speech during lectures, difficulty in participating in discussions and answering the questions. Moving children and objects through the class windows, audio and visual noise in the school compound. They concluded that these obstacles distorted effective interpreting assignments. Those challenges act as a limitation to SLI accessibility.

In another study focusing on setting as a constraint, Johnson (1991) investigated challenges faced by deaf students and interpreters in the classroom in the USA,

reflecting the interactions of all of the contributing factors noted above. She videotaped graduate level, interpreted classes and described several situations in which even when interpreters understood the instructors' message, communication breakdowns occurred. Of particular difficulty were situations in which classes involved material that was unfamiliar to students and interpreters and those in which diagrams and ambiguous descriptions of visual-spatial scenes were involved. Beyond the issue of divided attention between visual materials and the interpreter, Johnson noted that communication via sign language requires visual-spatial detail not required in spoken communication. For instance: In interpreting the description of a house built on a platform, for example, an interpreter should establish characteristics of the platform, the house, and other details, some of which conflicted with later information. Not only was the student confused as to the description, but attempts at repair -when the student was unaware that they were repairs, only increased confusion. Further, assumptions on the part of instructors, hearing classmates, and interpreters about what deaf students saw and understood resulted in miscommunications due to the asynchronous nature of "simultaneous interpreting." The present study assumes that some subject matters were too difficult for SLI and hence imposes a challenge, it assumes that this factor could be one of the challenges.

Marschark et at, (2004) observed that lack of trust and negative attitudes exhibited by stakeholders in the inclusive schools seems to be problematic to deaf accessing SLS. Most of the mistrusts and negative attitudes arose from lack of clear distinctive roles and responsibilities of sign language interpreters, lecturers and the school administrators. There are some instances where SLI are tasked with dual role of being an interpreter and a lecturer. Burdening interpreters with extra role and responsibilities including that of lecturers were demoralizing and indicative of overworking the interpreters because a shift of roles and responsibilities on the part of interpreters on behalf of clients with Hearing Impairment brings misunderstandings and poor relationship between them (World Federation of the Deaf, 1993). Although lack of trust and negative attitudes exhibited by stake holders such as headmasters in inclusive institutions, the present study assumes that there could be other challenges.

The World Federation of the Deaf (WFD) in its Code of Ethics advocates that comprehension, monitoring and negotiating, and clarifications are the consumer's

responsibility. The interpreter only provides a faithful rendition, and if there are any related problems in class or this case, the teacher and Deaf students should handle it only through the interpreter (International Registry of Interpreters Publication, 2006). In addition, the deaf and interpreter relationship is a dimension of hostile-dependence (McCay et al, 1990). Hostile-dependence feelings emerge when a person must depend on another for some need yet feels angry toward that person at the same time due to conflicting expectations. It is difficult for any human being to be as dependent on another as a Deaf person is on an interpreter for his education. Inevitable, this power leads to consequent anger on the part of the deaf persons and interpreters as well. When things go wrong, the deaf person may blame the interpreter not himself/herself or the person whose speech was interpreted.

Other challenge could be attributed skills on the part of sign language interpreter. In a study by Schick, Williams, and Bolster (1999) suggested that educational interpreting is unlikely to provide deaf students with full access to instruction. They evaluated Interpreters' skills in American K-12 educational settings, by using videotaped samples of expressive production of classroom content and receptive performance from a standardized interview with a deaf student. Their assessments took into account factors such as students' grade levels and modes of communication. Schicket al (1999).found that less than half of the 59 interpreters they evaluated performed at a level considered minimally acceptable for educational interpreting. The study concluded that many deaf students are denied access to classroom communication because of the skills of their interpreters. However it remains to be seen if the challenges attributed to skills on the part of SLI could be applied in the present study.

Similar studies were done by Langer & Schick, (2004) in an inclusive school setting. Their findings suggested that educational interpreters had considerable difficulties representing all aspects in the message that had direct relevance to classroom instruction. They argued that interpreters with inadequate interpreting skills rendered the classroom content incoherent. Those suggestions emphasize the fact that sign language interpreters with weak linguistic skills did not simply modify or use a resume approach to simplify the teacher's messages. This kind of omission of concepts that were not understood in an interpreted version by deaf students was considered to be a challenge to academic performance. Moreover, sign language interpreters and teachers

in inclusive classroom have to face the problem of interpreting certain concepts and, as a result, the students with hearing impairment fall academically far behind their hearing peers (Moores, 1996).

Another very important concern must be lack of skilled, qualified interpreters to work in educational settings. The skills, knowledge and experience of interpreters working in educational settings are often much less than required to provide even minimally satisfactory interpreting for Deaf students. Ideally, interpreting in educational settings should be more skilled than community interpreters, but most often education attracts inexperienced, unskilled interpreters. Bernhardt (1993) presents a thorough history of interpreters and interpreting in education. To address some of the weaknesses of the notion on inclusion comments that:-

> "Without qualified interpreted deaf students are not allowed to access the mainstream. Without qualified interpreters full inclusion is a myth for those students (p. 123)"

Bernhardt (1993) further argues that because the effect of interpreting is poorly understood, interpreters are often hired without consideration of their skills and qualifications. School system all over the country hire interpreters without even evaluating their signing and interpreting skills, let alone ensuring that they meet the standards and qualifications set forth in the Model Standards for the Certification of Educational Interpreters for Deaf Students that has been presented by the Registry of Interpreters for the Deaf and the council on Education of the Deaf (CED). These college systems require little or no certification or other evidence that interpreters are qualified to be the main access to education for deaf students. This situation applies to Zambia where there is not any institution in the country that offers interpreters courses either at bachelor of degree or diploma level or to offer certification.

This resultant shortage seems primarily due to the increase in demand for interpreters' services at the post-secondary level, as well as the limited availability of interpreters with the appropriate skill levels to work effectively in tertiary education settings. Several researchers in New Zealand have echoed this finding (Hyde et al., 2009; Knox, 2006; Komesaroff, 2005; Russell & Demko, 2006; Sameshima, 1999; Traynor & Harrington, 2003). Yet, there is a well-documented shortage of qualified interpreters

(Baily & Straub, 1992; Jones, Clark, & Stoltz, 1997). Due to an increase in the number of deaf students entering post -secondary studies in inclusive tertiary institutions in Zambia, there is a likelihood of shortage of professional interpreters. Therefore the scenario obtainable in New Zealand can be applicable to Zambia.

Richard (1992) noted that at one time interpreters can easily be misunderstood and hence possibilities of changing the meaning during simultaneous and consecutive interpreting processes with competing voices are therefore inevitable. Simultaneous interpreting here means when an interpreter voices or signs the information at the same time when a conversation is in progress. While consecutive interpreting allows lag time between the sender and receiver during message delivery. This argument supported the fact that the interpreter's perception and his/her cognitive abilities diminishes if there is no co-interpreting in all the assignments involving signing and voicing.

Powell (2013) pointed out that post-secondary interpreting is very different from community interpreting and that the nature of lecture styles means that the interpreter really needs to be familiar with the discourse environment and preferably have subject-specific knowledge. For example some interpreters need to have subject knowledge in such subjects as Mathematics, English and Science to be able to interpret effectively. Lack of specialization therefore contributes to challenges in accessing the facility.

Gordon (2008) in America conducted a study on contribution of Sign Language variation. The Study focus that American Sign Language convention of March 2008 in Austin, Texas interestingly, because of the early influence of the Sign Language of France upon the school, the vocabularies of ASL and Modern Sign Language are approximately 60% shared, whereas ASL and British Sign Language, for example, are almost completely dissimilar. From its synthesis at this first public school for the deaf in the North America, the language went onto grow. Many of the graduates of this school went on and found schools of their own in many other states, thus spreading the methods of Gallaudet and Clerc and serving to expand and standardize the language, as with most languages, though there are regional variations.

Sign language variations are differences in phonology, vocabulary and grammar usage that are a result of the language developing independently in different regions, with different cultures, at different schools and different individuals. Mbewe (2010) in

Zambia conducted a Study on Sign Language Variation. The Study found that learners faced a challenge as a result of Sign Language Variation because signs are made according to one's culture. Those learners from different provinces have their own Signs according to their culture. It is believed that each culture has its own Sign Language. Therefore, as learners come to college, the Sign Language they use also varies, hence, academic performance is affected. Thus, different cultures with different environments have different sign languages. For example, in the Northern Province part of Zambia, the Bemba people are not cattle keepers therefore; the sign for milk is made by mimicking a woman squeezing the breast. In this case, the culture of the Bemba creates a sign variation in Zambian Sign Language in that it is only seen in the Northern Province or by those who are Bemba. In other provinces such as Eastern and Southern where cattle are kept the sign for milk is produced by mimicking the action of squeezing milk from a cow's udder (Mbewe, 2010).

In another illustration from the Eastern Province of Zambia where it is a customary practice for people to drink beer from a calabash learners from the Eastern Province perform the sign of beer by mimicking the action of shaking the beer container in a circular motion with two hands and bringing it to the mouth as if to sip. In the Northern Province of Zambia people drink beer by sucking it from a container with a copper rod or holed reed. In turn learners with Hearing Impairments from Northern Province make the sign of beer by imitating the action of lips sucking from the rod or reed Mbewe (2009).

Mulrooney (2002) in Washington conducted a Study on contribution of Sign Language Variations. The Study found that Sign Language has many regional and sub-cultural varieties and accounts. Just as there are accents in speech, there are regional accents in Sign Language. People from the south part of the United States of America sign slower than people in the north. Even people from Northern and Southern Indian have different styles of signing. For example others sign "man" by touching the chin where beards grow from while others sign the word "man" by trying to put on a "pair of trousers".

In a Study conducted by Bailey (2002) in America on contribution of Signing Language variations, it was found that there are five broad regions of American Sign Language Variation in Canadian Pacific, Prairies, Ontorio, Quebec and Atlantic Regions. Carnoy et al (2008) in America conducted a study on contribution of Sign Language Variation.

The Study found that throughout Pacific, Prairies, Ontorio, Quebec and Atlantic Regions only Lexical Variations have been explored. For example the word “Learn” can be signed two different ways. There is the standard way to sign the word “lear” that seems to be used by most Signers of ASL in Canada, and there is also an Atlantic Regional Variation.

Another example is “about” which has three different ways of signing it, these are the standard ways and two Regional Variations (Atlantic and Ontario). The most obvious regional difference is in Local Signs. For example, there are more than six signs for birthday in American Sign Language just as in English one can say couch and sofa or soda and pop, to mean the same thing.

In a Study conducted by Mayberry (2007) in Canada on contribution of Sign Language Variation among Primary Learners with hearing impairments, it was found that the sign for rabbit provides a good example of Variation between black and white signers while both communities use the forehead location and neutral space location with „H“ hand-shape, black signers also have a separate sign for “rabbit” with a bent „V“ hand-shape and different hand movement.

Lucas et al (2003) in New York conducted a Study on contribution of Sign Language Variation. The Study found that each Sign has a hand-shape and these hand-shapes can resemble signs of numbers or letters. Some Signs that are created with an „I“ hand-shape, can also be made using an „L“ or a „5“ hand-shape (open hand-shape). There is a variation among regions in the United States when it comes to which hand-shape signers prefer to use Signers from California Missouri, Massachusetts and Louisiana favor the „1“ hand-shape over „L“ hand-shape and open hand-shape over the I“ hand-shape.

A study conducted by Corson (2010) in Ghana on Sign Language Variation, found that learners faced a lot of challenges when teachers dictate work to them as a result of sign language variations. The same dilemma can be applicable to SLIs. These Sign Variations deaf students faced during dictation lead them to write wrong words or sentences. These Sign Variations raise concern as to what extent SLS accessibility was met in inclusive setting in Zambia.

In a study conducted by Gordon (2005) in America on Sign Language Variation, it was found that learners with hearing impairment faced challenges in Sign Language because they meet different friends with different Signs. This makes communication breakdown as these Sign Language Variations make understanding of interpreted information difficult. These Sign Variations become a barrier in communication therefore a challenge to SLS accessibility because they raise some misunderstanding of the meaning of some signs. This study is concerned that the same scenario might be problematic in Zambia.

Hills and Lucas (2009) in South Africa conducted a Study on Sign Language Variation. The Study found that learners faced challenges in class as teachers used different signs which they had learnt from their Training Institutions while learners use Signs they learnt from their friends around them. Communication from the two parties was a challenge therefore it affected their academic performance. The same scenario can be applicable to sign language interpreting. These Sign Variations become a barrier in communication therefore a challenge to SLS accessibility.

In a Study conducted by Stokoe (2001) in America contributed Language Variation among deaf students to communication breakdown. The Sign Variation is making learners to collect wrong information from facilitators like interpreters in the field. It acts as a limitation to SLS accessibility. Some challenges can be attributed to lack of incentives to sign language interpreters. According to NZSL (2013) interpreters are usually paid on an hourly basis as casual or permanent part-time employees and it is quite rare for interpreters to be employed full-time. A number of researchers in New Zealand have echoed this finding (Hyde et al., 2009; Knox, 2006; Komesaroff, 2005; Russell & Demko, 2006; Sameshima, 1999). This scenario depicts the situation in Zambia where until now there are no full time interpreters in learning institutions.

Lack of specialization in subjects being interpreted could attribute to challenge to SLS accessibility. Powell (2013) pointed out that post-secondary interpreting is very different from community interpreting and that the nature of lecture styles means that the interpreter really needs to be familiar with the discourse environment and preferably have subject-specific knowledge. For example some interpreters need to have subject knowledge in such subjects as Mathematics, English and Science to be able to interpret

perfectly. Lack of specialization therefore contributes to challenges in accessing the facility.

Kortesalo (2015) conducted a study on qualification processes and competencies of sign language interpreters in African context. The objectives of the study were to determine the required competencies of graduating SL interpreters in countries like Ethiopia, Kenya and others including Zambia. The second objective was to find out the process of qualifying SL interpreters. The study found that there were no required competencies of graduating SL in those countries including Zambia. The study also established that in those countries SL interpreters were recruited on the basis of signing skills and completing a 3 month course in basic interpreting.

Moreover, financial pressures are some of challenges to implementation of inclusive education. The most obvious financial barrier to implementation of successful inclusive practices in schools is the growing inadequacy of finding for education, in general, let alone for special education (WHO &World Bank, 2011). Indeed, lack of specialized materials and equipment for the education of the children with disabilities is very much connected to lack of or inadequate funding. In a study carried out in North of London, Glazz (2011) notes lack of funding was one of the key barriers to inclusion. Similarly, inclusion implementation Africa is hindered by lack of or inadequate financial resources from the governments (Ametepee &Anastasiou, 2015; Musukwa, 2013, Muwana, 2012). These researchers claim that economic barriers lead to lack of or inadequate provision of education support services such as technical and mechanical appliances and equipment that need to be available to all learners with disabilities.

2.4.4 Sustainability of sign language interpreting services in tertiary institutions

There are a number of guidelines and conventions the international community has put in place as standard practices for member states to adopt to ensure the sustainability of various social services to support inclusion of persons with disabilities in tertiary institutions.

a). Legal and Policy Frameworks

To sustain the various social activities that aim at enhancing inclusion and participation among persons with disabilities, the Zambian government has adopted a number of

policy and legal frameworks (Matafwali, 2007). These legal instruments include the Persons with Disabilities Act of 2012 that guarantees accessibility to information and communication to all persons with disabilities including those with hearing impairments. The Act further guarantees that the Ministry responsible for Education shall by statutory order designate public educational institutions to provide the necessary facilities and equipment to enable persons with disabilities to fully benefit from the public educational institutions. Although the Act does not explitictly state what the necessary facilities are, these facilities are intepreted to mean such facilities as Sign Language Services among others. The Ministry of General Education Policy (2011) requires that education should be provided through inclusive schooling where students with Hearing Impairmentslearn alongside their hearing peers.

There is then the National Policy on Disabilities (2010) that was enacted with a view of ensuring full integration of persons with disabilities within the mainstream society. And the National Policy on Education (Educating Our Future) of 1996 which recognizes the importance of people's right to education regardless of their abilities. Above all the constitution of Zambia Article 23 (3) prohibits discriminating against persons with disabilities. It provides for just and fair distribution of social benefits to meet the needs of people with disabilities. The above legal and policy frameworks are in line with the international instruments that Zambia signed and ratified- such as the United Nations Convention on the Rights of people with Disabilities and the Salamanca Statement on Principles, Policy and Practices on Special Needs Education. However, the country does not have a policy specifically on inclusive education (Noyoo, 2000; Mubita, 2009).

b). International Instruments on Disability

Priestly (2003) asserts that within the framework of the rights and resources, issues of social inclusion of people with disabilities in the social activities have taken a center stage at global level. He makes reference to the Convention on Rights of People with Disabilities (CRPD) - this is aimed at protecting, promoting and ensuring that people with disabilities enjoy all the basic rights irrespective of their abilities. The Salamanca Statement on Principles, Policy and Practices in Special Needs Education emphasis on the need to educate all children together regardless of their circumstances. The Standard Rules on the Equalization of Opportunities for Persons with Disabilities on the other

hand aims at ensuring that all barriers to effective participation of persons with disabilities in social activities are removed (UN, 1993; Guernsey, Nicoli & Ninio, 2007; Barron & Amerena, 2007; Clement & Read, 2008; Croft, 2010;). For instance the United Nations' Convention on the Rights of Persons with Disabilities obliges the states who have signed and ratified the treaty to:-

> *"promote the training of professionals working with persons with disabilities as well as provide forms of live assistance and intermediaries, including guides, readers and professional sign language interpreters, to facilitate accessibility to buildings and other facilities open to the public."* (United Nations, 2006. p11)

Therefore it is obliged upon the states including Zambia to promote the training of SL interpreters to enhance professionalism among them. In Japan, for instance, the Ministry of Welfare which is now Ministry of Welfare and Labor introduced a certification program of sign language interpreters and initiation by the Japan Broadcasting Corporation of several sign language television programs to ensure sustainability of SLS. Coupled with this, a comprehensive research project on Deaf Education which resulted into the introduction of early sign language instruction and translation of textbooks of spoken Japanese used at deaf schools into Sign Language and SLS has been undertaken (Nobuyuki & Mihoko, 2013).

Other example in the USA In the United States the Individual with Disability Act (IDEA, 1990) has provisions that mandated an end to educational discrimination against children with disabilities; required fair and appropriate public education and appropriate academic support services; and, in the case of deaf children, required school districts to take into consideration linguistic, social, and cultural needs related to functioning within the family and the Deaf community. The American Disability Act (ADA) and IDEA guarantees 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.

c). Institutional Frameworks

In terms of institutional frameworks, some of the many organizations dealing with the issues of people with disabilities are the Ministry of Community Development and Social Services (MCDSS) which is responsible for policy formulation and

implementation dealing with people with disabilities. Zambia Agency for Persons with Disabilities which coordinates and supervisors all organizations dealing with people with disabilities. It is also responsible for overseeing the implementation of policy on disability.

d). **Sign Language Interpreters Training**

The importance of SLI training is widely acknowledged. To underscore the significance of SLI training, Saur (1992) notes some of the challenges deaf consumers encounter to access quality interpreting services as lack of special skills, incentives and training on the part of interpreters. Therefore lack of signing skills attributed to Sign Language interpreters makes it difficult for interpreters to interpret clear instructions and information to deaf students in school. However it remains to be established whether SLI training is one of the sustainable measures put in place to ensure continuity of SLI.

According to ZNAD Brochure (2010) the Finnish Association of the Deaf were pioneers of SLI training in Zambia and Kanyanta (2003) also reports that the Zambia National Association of the Deaf (ZNAD) later entered into an agreement with the Danish Deaf Association in Denmark to continue from where the Finnish Association of the Deaf stopped. ZNAD recruited four Ministry of Education teachers and two ZNAD personnel to train as Sign Language experts in the area of Sign Language teaching and SLI training in East Africa in Uganda. Danish instructors provided course work and supervised the teaching practice during the two year period. Zambia National Association of the Deaf has to date continued conducting SL training activities on a three month basis using the same personnel trained under the Danish project. However, this study assumes that training by Finns and Danish was one of the measures to sustain SLI.

e). Growth and Standardization of Sign Language

Gordon (2008) in America conducted a study on contribution of Sign Language variation. The Study looked an early influence of the Sign Language of France upon the school in USA, the vocabularies of AST and Modern Sign Language are approximately 60% shared, whereas ASL and British Sign Language, for example, are almost completely dissimilar. From its synthesis at this first public school for the deaf in the North America, the language went onto grow. Many of the graduates of this school

went to found schools of their own in many other states, thus reading the methods of Gallaudet and Clerc and serving to expand and standardize the language, as with most languages, though there are regional variations.

Mbewe (2009) in Zambia conducted a Study on contribution of Sign Language among Primary school learners with hearing impairments. The Study found that Sign Language Clubs have been introduced throughout schools for learners with hearing impairments. In addition to that Zambian dictionary also has been supplied throughout schools. The aim is to have the standard Zambian Sign Language to all learners with hearing impairments. However, the study is yet to establish whether standardization of Sign language through sign language dictionaries results one of the sustainable measures put in place to ensure SLS accessibility.

2.5 Summary

This chapter has reviewed relevant literature based on the objectives of the study. It has brought to the fore the concepts of Sign Language interpreting, deaf and hearing impaired. It also looked at sign language interpreting history. It has noted the need for interpreters to be bilingual and bicultural that is in Deaf culture and hearing culture. The history has looked at how sign language has evolved over the decades from tradition where family members or teachers were volunteering as interpreters to modern time where some interpreters could be trained and contracted to interpret.

The review has noted some of the measures that were put in place to ensure SLI sustainability. It has presented policies and laws enacted in Zambia that aimed at facilitating inclusive schooling. These are National Policy on Persons with Disabilities of Zambia, Disability Act of 2012 and Education Act of 2011. It has also looked at institutional framework and how it has contributed to sustainability of SLI. The United Nations instruments that Zambia has ratified and domesticated to ensure provision of SLS were also reviewed. Among them Convention on the Rights of Persons with Disabilities

It has analyzed researches that were carried in the west, Africa and Zambia among others. Chibwe (2015) and Mulonda (2013) carried out studies on accessibility of SLS in some of deaf units at Primary Schools and special two Secondary Schools respectively. However, both studies focused solely on special schools. Chibwe looked

at effects of on sign language variations on sign language as a medium of instruction in primary school Deaf units. However, how much sign language variation affects SLI at tertiary level is unknown. Mbewe (2009) studied total communication as the medium of instruction in use in deaf education in Zambia. However, the study only looked at sign language as the medium of instruction from point of view of a specialist teacher. At continental level, Omugur (2007) carried out a study on SLI in inclusive Secondary Schools in Uganda. The study identified such factors as negative attitudes, inadequate development of sign language communication among educationalists, lack of interpreter professional development and ignorance on the part of classroom teachers as some of the challenges to SLS accessibility by Deaf students in mainstream classrooms. However, it remains to be established if these findings were similar to Zambia. Additionally, those challenges were mainly operational issues of sign language interpreting. The study is devoid of institutional frameworks, and legal and social policy frameworks adopted by the government to ensure social participation as challenges to SLI accessibility. The next Chapter will deal with methodology of the study. It will outline how the study was conducted in terms of research design, the sample and sampling procedure, data collection and analysis procedure.

CHAPTER THREE: METHODOLOGY

3.1 Overview

This chapter presents the research methods used in the study. It presents the study site, the research design, the target population, sample and sampling procedure methods and the instruments that were used to arrive at the findings. Sign language and English were the two languages that were used to collect data. Sign Language was used to communicate with deaf respondents, while verbal English language was used to interview hearing informants.

3.2 Research design

Kombo and Tromp (2006) describe research design as "the glue that holds all the elements in a research project together". It guides a research in the process of collecting, analyzing and interpreting the data. It is also viewed as the conceptual structure within which research is conducted.

In this research, a case study design was used. Two (2) two inclusive tertiary institutions were involved as were the main tertiary institution providing tertiary education through SLI. Lusaka district was the study area and the two (2) selected tertiary institutions were the cases studied. A case study design was preferred because it focused on a smaller unit, group or community (Merriam and Simpson, 1995). The other reason for this preference of research design was that it provided background data for a larger study (Yin, 2003).

Moreover, a single research methodology was employed in this study comprising of qualitative research. Qualitative research method was selected because it was particularly suitable for gaining an in-depth understanding of underlying reasons and motivations. It provided insight into the setting of a problem (Mason, 1994). This technique was also used because it was not based on unstructured or semi-structured but methodologically flexible techniques, for example, individual depth interviews or group discussions. It was suitable for eliciting great detail and comprehensive view (Punch, 1998). Therefore qualitative research strategy was employed because there was need to capture only a single facet of the study, which would not be possible if different strategies of research were to be used.

3.3 Target Population

According to Best and Kahn (2006:13) population is “any group that has one or more characteristics in common and is of interest to the researcher.” It therefore refers to a large group of objects, people or events that have at least one thing in common, from which the study sample is drawn. It also means a set of people or entities to which findings are to be generalized (Merriam and Simpson, 1985). The target population for this study consisted of lecturers, deaf students, interpreters, administrators at institutions providing inclusive tertiary education, Standards officer of Ministry of Higher Education and Ministry of Community Development, all from Lusaka District.

3.4 Sample size

The research participants comprised of twenty six respondents namely nine deaf tertiary students, nine lecturers, four Sign language Interpreters, two administrators and two policy makers. The decision to involve additional informants was to get additional and balanced responses through a triangulation approach for validity and reliability purposes. Aware of the aim of the study, purposive sampling was considered to achieve the aim of the research. According to Kombo & Tromp (2013:82) purposive sampling is a “sample method the researcher purposively targets a group of people believed to be reliable for the study.” It is for this reason that the study intended to use the stated categories of people who were believed were information-rich.

The sample gave a sample size of twenty six drawn from the lecturers, interpreters, students, policy makers and administrators as follows:-

a) Lecturers and interpreters

Of the twenty six study population nine (9) were lecturers and four (4) were interpreters. Lecturers were chosen on the basis of experience teaching in inclusive tertiary institutions. Whereas four (4) sign language interpreters were included because of experience in providing SLS from UNZA and ZAMISE. The working experience among SLI varied between 4 and 6 years while that of lecturers varied between 2 to 20 years respectively. The lecturers constituted secondary informants or respondents because they have worked with interpreters for quite a long time.

b) Deaf respondents

Of the twenty six study population, (9) were deaf students. The students were drawn from UNZA and ZAMISE which were main institutions providing tertiary education through SLI. They were chosen because of experience at the institutions and were the main beneficiaries of SLS. None of the respondents were born in a signing family. Their years at college or university varied between 1st and 4th year. All of them were pursuing either a diploma or a degree in Special Education. None of the deaf respondents was born in a deaf family where sign language is a mother tongue.

c) Administrators

Of the twenty six (26) study population, two (2) were administrators one from each of the study sites. They were included in the study to assist in establishing the measurers that were in place with regard to sustainability of SLS at their respective institutions. The two were chosen because they were information rich with experience of working experience 10 and 15 years. Further they were in charge of the institution or department.

d) Policy makers

Of the twenty six, two (2) were policy makers one drawn from Ministry of Higher Education and from Zambia Persons with Disabilities (ZAPD). The policy experts were included in the study to assist in establishing the measures that were put in place with regard to policy formulation and implementation on inclusive schooling. The two were chosen because the position they hold as a decision maker and very conversant with policy and implementation on inclusive schooling.

3.5. Sampling Procedure

Sampling is a process of selecting a number of individuals or objects from a population such that the selected group contains elements representative of the characteristics found in the entire group (Orodho and Kombo, 2002). Therefore, the sampling procedure is simply the method used to select these individuals or objects from a population which contains the elements representative of the characteristics found in the entire group.

In this study, purposive sampling procedure was used to select pupil and teacher-participants. This method was referred to as purposive sampling which is a non – probability sampling method and it occurs where the elements selected for the sample are chosen by the judgment of the researcher.

Furthermore, purposive sampling was also used to select lecturers, Policy specialists, administrators, deaf students and sign language interpreters. This was a rich sample where the researcher chose a few individuals who were considered to be knowledgeable about the issue under study (Morten, 1997). Purposive sampling depended on the researcher to choose these individuals, raising the question, how does someone choose some individuals and exclude others? In light of this, if properly used, purposive sampling can be a powerful tool in research to obtain necessary knowledge of the problem under study (Mortens, 1997) as it appeared to be in this study.

3.6. Data collection Instruments

A number of techniques were used in data collection. Among the instruments were: interview guides, focus group discussion guide and observation matrices. The researcher used interview guides to the students, lecturers, Heads of Department, policy makers and SLIs. In-depth interviews were conducted based on the semi-structured and open-ended interview guide as they provided the freedom and flexibility to adapt the content (items) and probe in depth on the items. Focus Group Guide was used to gather data from deaf students. Lastly, observation check list was used to make observations on some interactive activities in classroom such as classroom discussions, lectures and tutorials. The observation schedule was used to establish the environment suitability for SLS.

3.7 Piloting the Study

The data collecting instruments that were used were subjected to a pilot study before being used in this study. This aimed at testing the instruments on how well they were to support the collection of data and the identified weaknesses in the instruments were attended to thereafter they were used in the main study.

3.8 Validity of Data Collection Instruments

The researcher took long time in collecting data with a following observation and interviews so as to collect rich and valid data. Both long term and involvement of interviews enabled the researcher to collect data that was detailed and varied enough that it provided a full and revealing picture of what was going on (Maxwell, 2003). After collecting data the researcher gave feedback to the people who were studied to reduce misinterpreting the meaning of what they have said and done, and perspectives they have about accessibility of SLS in the two institutions.

3.9 Procedure for data collection

According to Creswell (2009) Data collection procedure is a process through which data is collected from the participants through the use of appropriate instrument. Before data collection, written permission was sought from the assistant Dean Post Graduate Studies which were presented to the providers of the research information. The researcher presented the letter to the relevant authorities at the research sites and permission was granted. After making an appointment with the respondents the main data collection started. Data was collected within one month. Interviews were first conducted with the students face to face using the semi-structured and open-ended interview guide in sign language. The researcher did not need SLI because he was conversant in sign language. Thereafter, lecturers, SLIs, administrators and policy makers were interviewed face to face at their convenience time. The interviews were recorded and that allowed the researcher to listen the recording in his own time. The researcher wrote down the responses and asked more questions to respondents for some clarity. Later the researcher visited the tertiary education institutions and made further observation to consolidate collected data and observe some interactive activities such as class discussions and lectures. Lastly, a focus group discussion composed of deaf students from the University of Zambia and Zambia Institute of Special Education was held at ZAMISE to get views of respondents on various issues connected with the objectives of the study.

3.10 Data analysis

In qualitative studies, researchers obtain detailed information about the phenomenon being studied, and then try to establish patterns, trends and relationships from the information gathered. According to Mungenda and Mungenda (1999), data obtained from the field is in raw form and difficult to understand. Such data must be cleaned, coded, key-punched into a computer and analyzed. The researchers are able to make sense out of the data from the result of such analysis. In this study data was analyzed using qualitative methods. Similar and contradictory opinions were analyzed and categorized into themes and patterns in order to draw conclusions. The data was also analyzed manually by taking into account the research problem that was being investigated based on study objectives and research questions.

3.11 Ethical consideration

Aware of the fact that individuals and institutions have their ethics and guide lines during their work and existence in institutions, ethical considerations were paramount in this study because it enabled to build a good rapport and nurture close relationship with the informants and increased the credibility of the study.

3.11.1 Seeking Permission

Zambia has got both government and private owned tertiary institutions offering tertiary education countrywide. As a result, gaining access to information from any of these institutions necessitated the need to follow proper entry procedures. The researcher obtained verbal permission from the officials at institutions A and B who allowed the study to be carried out.

3.11.2 Informed Consent

In order to secure this, the researcher made a formal request to the Sign Language Interpreters, the class lecturers, Deaf students, administrators and policy makers to take part in the study (Gall Borg et al., 2003). A written and verbally request was made to informants before and during a visit to the institutions and encounter with SLIs. A request was made to officials at both institutions to allow informants to participate in the study. By policy, all Deaf students and lecturers are under the authority and care of

the officials at institutions in Zambia. The intention here was to avoid interrupting the normal routine day to day activities at the institutions, by developing a meeting plan. Involving all the four categories of informants in the study was aimed at instilling understanding of how much accessible SLI was to Deaf students in inclusive tertiary institutions.

3.11.3 During the Interviews

Before embarking on the interviews, the researcher requested Deaf informants and other respondents to permit the researcher to interview them. After each interview, the researcher signed-read the responses to them to let them listen and understand to confirm what they had actually said. Although this was one way of cross-checking the information given, it facilitated a reflection on the intentions of the study after the researcher had left the scene. The researcher also endeavored to let the informants know that the institution officials had earlier granted the researcher permission to conduct the study with them. This was to build rapport and confidence in them. The names of all informants were coded to conceal their identity and to maintain confidentiality.

3.11.4 During Observations

The researcher had to develop an observation guide that followed a systematic procedure for data collection. All the observations were done during indoor interpreting assignments. Although the institution authority had earlier granted researcher permission to do data collection at the institutions freely, the researcher avoided skepticisms, by consulting the lecturers about the researcher's presence in their classes. Since sign language is a language expressed openly and can be perceived and understood by anyone in the vicinity who knows sign language, the researcher guarded against this by interviewing Deaf respondents, interpreters and officials separately as individuals to maintain confidentiality among respondents.

3.11.5 Use of Pseudo-Names

The use of pseudo names was thought ethical in this study in order to maintain good relationship and mask the identity of the empery and the informants involved in the study. In this thesis, the reader should realize that the names of the study areas and the informants have been concealed and kept anonymous. The researcher did this by

labeling the institutions with alphabetical letters A and B. Deaf student respondents were coded as DS1, DS2,DS3, DS4…DS9, Sign language interpreters were coded SLI1, SLI2, SLI3 and SL4, lecturers were labeled L1, L2, L3…….L9, while administrators and policy makers were named Ad1, Ad2 and P1, P2. This approach may not be viewed as a better option by some readers but for the purposes of this particular study, it deemed so. It is now the readers' to responsibly apply the research findings to their respective contexts where the phenomenon is applicable.

3.11.6 After the Study

After the study the researcher thanked each one of the informants verbally and others by telephone. The researcher also thanked policy makers and officials of the two institutions which were areas of the study. This was significant to maintain good relationship with the participants and institutions for future researchers who may go to do research in the same setting.

3.12 Summary

This chapter has outlined the methodology used in the study. Accordingly, it has described the type of study as a case study. Moreover, it provided information about the study population which was basically the lecturers, deaf students, administrators, policy makers and interpreters themselves. It has furthermore defined the sample, sample size and procedures used to come up with the sample. The chapter has further discussed the instruments and the data collection methods that were employed. Last but not least, the chapter has dealt with the data analysis techniques used in this study. The next Chapter will deal with presentation of findings from the study.

CHAPTER FOUR: PRESENTATION OF THE FINDINGS

4.1 Overview

This chapter presents the findings of the study which sought (1) investigate the accessibility to which deaf students access SLS in tertiary institutions, (2) establish the benefits of Sign Language Services to deaf students at tertiary education level, (3) explore the challenges in the provision of Sign Language Services at tertiary level, and (4) establish measures put in place to ensure sustainability of Sign Language Services in tertiary institutions in Zambia.

The data is presented in the following categories: Findings from the Institution A and Institution B, findings on the extent to which SLS were accessible, benefits that Deaf students could derive from the Sign Language services, practical and operational challenges and sustainability measures put in place. The following are the presentation of the findings:-

4.2 Accessibility of SLS at Institution A and Institution B

Although, the study was conducted at four sites Institution B and Institution A provide a bedrock upon which more data could be collected on the extent to which SLS was accessible.

4.2.1 Accessibility at Institution A

The study findings established that there were 40 lecturers, 1 sign language interpreter and 10 deaf students at Institution A. This indicated ratio of lecturers to SLI as 40 to 1. More data was obtained from interview of administrator and lecturers indicates the likelihood that there were no grants from central government that were earmarked for SL interpreting services and that SLIs were not regarded as government workers. Institution A used its own income to sustain SLI services. Moreover, Institution A has boarding facilities. At the time of study all Deaf students at Institution A were in-service and had attended Kitwe Teacher College.

4.2.2 Accessibility at Institution B

The study findings established that all the deaf students at Institution B were enrolled in the School of Education. It was also observed that of all the 11 schools available at institution B only two SLIs available to service the whole Institution. More data obtained through interviews from deaf students and observation showed that the need for SLI was great at Institution B. Deaf students attended various learning activities such as tutorials and lectures at different time of the day.

More data obtained from the interview of an administrator and lecturers show the likelihood that there were no government financial contributions to Institution B for provision of interpreting services just like the case of Institution A. SLI are not employed as government workers at the Institution B. Institution B uses of its own income and external donor support to sustain SL interpreting services.

4.3 Deaf Students Access Sign Language Interpreting Services In Tertiary Institutions In Zambia

The aim of the question was to guide the study in investigating the state to which SLS was accessible in tertiary institutions. It analyzes the views of deaf students, interpreters and the environment.

4.3.1 Deaf Students Views on Accessing SLS Facility In Tertiary Institutions

The task assesses the views of deaf students on how easy SLS facility was made available to them. The results showed that minority of respondents said SLS facility was not available, while majority maintained that it was sometimes available. The findings showed that there was limited SLS facility available for students.

Table 4:3 Accessing SLS

Learner's response	**Frequency**
SLIs are not available	4
SLIs sometimes available	5
SLIs always available	0
Totals	9

The table above shows that SL interpreting service is not always available.

Further sentiments obtained from deaf respondents through focus group discussions on the availability of SL interpreting service were recorded as below.

> Student labeled DS3 laments, *"Institution A has time and again promised us students' interpreters. It seems this promise will never materialize as to date no interpreter has been employed.*

Another DS9 said, *"Before I enrolled at Institution A I heard sweet rumors about interpreters available there. But when I enrolled the story is very different. I have accessed interpreter only once."*

DS6 a 34 years old, second year male student pursuing Special Education complains, *"At Institution A you can't access SLS everyday with only one interpreter. The same is rarely available every day." It is very frustrating, it is even worse because, those hearing class mates even stopped helping us that saying you have SL interpreters.*

DS2 32 years old, second year male Deaf student pursuing Special Education said, *"Interpreting provision at UNZA is bad. Institution A management are not sure how many interpreters to employ." I don't think the boss of Special Education knows about it.*

DS5 complained," *All interpreters engaged to offer SLS at Institution A work somewhere else. It is difficult to access this kind of on- off service.*

4.4 Benefits Deaf Students Derive From SLI Service In Tertiary Institutions

This objective assesses the benefits that could be derived from SLI services in inclusive classroom. To determine the usefulness of SL interpreting services it examines the extent to which the SLS facilitate effective lecturing and learning among hearing peers, Deaf students and lecturers in inclusive classroom. The assessment of views of respondents indicated that SLS enhanced class inclusiveness and participation of Deaf students in classroom activities as recorded below.

4.4.1 Lecturers Views on Benefits of SL Interpreting Services In Tertiary Class

This assesses the views of lecturers on benefits that could be derived from SLS. The results show that 7 of the lecturers said yes that SLS enhances class inclusiveness and

participation of deaf students in classroom activities while two respondent said no. The findings therefore indicate that SLS enhances classroom inclusiveness and enables deaf students to fully participate in classroom activities.

Table 4.4: **Whether SLS Enhances Classroom Inclusiveness and Deaf Participation**

Lecturer's response	**Frequency**
Yes	7
No	2
Totals	9

In obtaining more views on benefits of SLS to deaf students, lecturers were asked further to give reasons why they think SLS provided benefits. Majority of respondents said that SLS enabled difficulty discussions to be simplified and concepts to be well defined and explained to all students. Majority of respondents moreover explained that SLS increased classroom interactions which led to productive and interesting teaching and learning activities in the classroom. The findings therefore suggested that SLS benefited inclusive classes by promoting inclusiveness, simplifying of classroom discussions and concepts. The findings also showed that SLS enhanced interactions among all students in inclusive classrooms and contributed to productive and interest learning and teaching.

For example the following were the responses from lecturers to the question, what benefits do you think are derived by deaf students from SLS:

L1 said: *"Discussions are simplified and certain terms are well explained."*

L4 notes: *"Sign Language interpreting service is essential, because without SLI service it is difficult for the deaf to learn certain concepts of the lessons, concepts are better learnt in class".*

L5 sums it: *"it helps them follow the discussions."*

L7 explained: *"Deaf students depend on sign language interpreters, it is part of their culture. The service helps deaf to learn at the same level like hearing classmates. They able to follow the lessons and able to ask questions where they feel they have not understood."*

General views expressed by six lecturers was that SLS increased classroom interactions which led to productive and interesting teaching and learning activities in the classroom. The findings therefore suggested that SLS benefited inclusive classes by promoting inclusiveness, simplifying of classroom discussions and concepts. The findings also showed that SLS enhanced interactions among all students in inclusive classrooms, increase participation of deaf students and contributed to productive and interest learning and teaching.

4.4.2 Views of Deaf Respondents on Benefits of SLI Services

In order to have a clear picture on the benefits that could be derived from SLS, it was necessary to get the views of deaf respondents who were the most important consumers of the facility on the benefits they derive from interpreting. Deaf students expressed the following as views why SLS were important to their learning and teaching activities:-

DS3 32 years old, second year male pursuing Special Education said, *"When interpreters are present topics are easy to follow, when they don't come I don't even attend or I go out of the class"*

DS1 34 years old, third year male pursuing Special Education said, "When *my interpreter is around, I participate fully during tutorials, asking question and contributing effectively. That makes me happy and gives me hope that I am equal with the other hearing students".*

The above sentiments indicate that there were respondents were aware of some of the benefits that deaf students could derive from the interpreting facility.

4.5 Challenges on Provision of Interpreting Facility In Tertiary Institutions

This objective analyzes the challenges that SL interpreters encounter as they offer the service in inclusive classroom.

4.5.1 Motivation

The study analyzed motivation through internal motivation and external motivation. The aim of analysis was to establish how lack of motivation was seemed to be a hindrance to their interpreting tasks and how it influenced their work in those

institutions. The evaluations were made with reference to the kinds of motivation coming from within the SLI themselves and from the institutions.

Questions were asked for interpreters to tell their feelings about working in an inclusive environment and how that influenced their performance. Although informants expressed negative and positive feelings about motivation, all the nine informants expressed willingness to do their work with enthusiasm.

SLI2 expressed the following sentiments on how attitude negates motivation:

"Some lecturers have a positive attitude and some have a negative attitude towards interpreters. During lecture or tutorials, we were supposed to stand or sit close to the lecturer for our clients' sake. But some of the lecturers think we steal the class attention, that sentiment demotivate us".

Questions were asked for interpreters to tell any challenges they encounter due to influences coming from outside the institution and the community and how this was viewed as a challenge to the performance of SLS. The following were their comments on their welfare when asked what working conditions were a challenge in their work.

SL4 interpreter stated: *" Interpreting is too much work, we don't have enough time to rest, on top of that late payment of salaries are not encouraging to us".*

SLI responded: *"Sometimes we interpret continuously for Prolonged time, there is no breaks in between lectures, oh that is tiresome."*

The assessment of views revealed that SLIs suffered from fatigue due to lack of breaks during interpreting process and lack of prior knowledge of the subject prior to interpreting. The findings therefore showed that poor working conditions of service was a challenge to SLI accessibility.

4.5.2 Attitudes And Behaviors During Interpreting assignments

These were feelings and behaviors expressed in the class towards the work of SLS during their work inside the classroom. Interview with all the SLIs indicated that it was challenging to maintain a professional distance with some lecturers in class. There was lack of understanding on the part of some lecturers on the duties of SLIs. This lack of

understanding was regarded negatively by the interpreters. Interpreters alleged that most of these lecturers could not handle communication in class appropriately well.

SL2 said that:

"Lecturers oftentimes advise us interpreters to explain to deaf students certain concepts though it is not our responsibility to do so."

According to majority of SL interpreters, it was the responsibility of the lecturers to explain certain concepts and answer some questions or to students' reactions through the interpreter, not the other way round. These kinds of negative expressions above were regarded as an indication of the challenges interpreters' faced that went unnoticed during their work in these inclusive institutions. Information from SLIs also indicated that they received little support from a cross section of some lecturers who did not know how to facilitate SLIS in the classroom.

4.5.3 Variation In Languages

This assessed students views on the variation of Languages used in interpreting process as a challenge. There were varied ways in which Deaf students learnt Sign Language. None of the respondents had learnt Sign Language from their hearing parents. All respondents gave different explanations how they learnt sign language. Those varied from interaction with deaf peers at school and church. None of the deaf respondents said that they learnt Sign Language from schools as a school subject. All respondents said they were fluent in English.

4.5.4 Views of Students on Non-Signing Lecturers

This assessed views of students on non-signing lecturers. The results showed that all the 9 respondents said no. Asked if students could still communicate with their non-signing lecturers in the absence of SLIs, majority of respondents said no. Asked further what method was used to communicate with non-signing lecturers in the absence of SLIs, majority of respondents said through writing, phone texting and paper-ink. The findings indicated that lecturers did not communicate via sign language and a few of students were able to communicate through writing. It could be deduced that non-signing lecturers were a challenge to SLS accessibility.

Table 4:5.4.1: If Lecturers Use Sign Language

Student's response	Frequency
Yes	0
No	9
Totals	9

The table above indicates that majority of deaf students were of the view that lecturers did not use sign language in the classroom.

4.5.4.2 Interpreting Strategies

Interpreting strategies meant how the sign language interpreters were sending and receiving information or messages and passed on to the deaf students, lecturers and their hearing peers during lecturing and learning activities in the inclusive classroom. In order to establish any challenges that the strategies can impose on SLS, both non-verbal and verbal communication were analyzed.

4.5.5 Verbal Communication

In verbal interpreting process, it meant how the SLS providers were able to hear or read both spoken and signed languages and able to respond to what was being expressed through spoken language. The goal was to examine how SLS providers perceived verbal utterances from the lecturers, deaf students and hearing peers and able to convey it on to communicators in the communication process. The observation made was that SLS providers face a surmountable challenge to grasp timely information from fast-speaking lecturers or hearing peers and when too many speakers were speaking simultaneously. It was also observed that some interpreters had a challenge how to read signed communication from fast signing deaf students, a shift in signing systems such as from Sign Exact English to Sign Language, finger spelling and so forth.

4.5.6 Non-Verbal Communication

The interest in this process was to examine the challenges encountered by SLS providers communicate through the use of signs, gestures, facial expressions and body movements without the element of voicing. It is an interpreting process from oral

expression to signing. The challenging aspect identified in non-verbal communication during lecturing was the fact that some lecturers used hard technical words which had no sign equivalent to sign language. This was challenging for the interpreters to interpret into signs for the Deaf students to comprehend. The responses given by SLS providers indicated that they always faced challenges when it came to interpret in courses like neuropsychology lectures as sign language vocabulary did not have sign equivalent of most neuropsychology spoken terminologies. SLS providers in most cases resorted to utilizing a signing system called finger-spelling which was quite fatiguing. SLS providers complained of fatigue as a result of extensive use of finger spellings. Another informant mentioned that it was challenging to integrate and use all the signs from learners' different regions.

The above responses indicated that there is a big challenge in terms of language use and applicability in a multilingual and multicultural setting like in inclusive classroom. Since interpreters are often criticized for poor academic performance of deaf students, it is a challenge on the part of SL interpreters. However, this could not necessary be treated so since the interpreters are not totally 100% perfect to duplicate the intentions of the lecturers or rather provide an adequate interpretation of the technical aspects of the lecture. Instead sign language interpreters should be encouraged to seek guidance from deaf students themselves for appropriate signs to use and style of signing they prefer.

4.5.7 SLS Providers and Lecturers Preparedness For SL Interpreting Services

This assessed the views of lecturers and SLIs respondents on preparedness for SL interpreting assignment in inclusive classroom. The responses from lecturers were splintered into positive and negative. Majority of lecturers at Institution A said they used interpreted lecture and tutorials while minority said they were able to communicate with the students themselves without involving SLS providers using a signing system termed total communication.

Responses from Institution B also varied. Majority said they were able to use Power Point presentations and illustrations while minority said they were able to use SLS facility for deaf students besides PowerPoint presentations and illustrations.

Responses from SLS providers on their readiness for inclusive classroom assignment varied with majority blaming lecturers for their shortcomings and the setting. Responses from SLS providers were as follows:-

SL1 explained, *"We are not being given notes by lecturers before the class time so that you prepare yourself adequately, not knowing the subject matter erodes the confidence and display fear on your face and that is not a good feeling at all".*

Institution A SLS providers said the classroom space was enough and sitting arrangement suitable whereas at Institution B SLIs said that sitting arrangement was not always good. Data obtained through observation revealed that the differences in responses from Institution A and Institution B on sitting arrangement. At Institution A classes were smaller compared to Institution B. One SL interpreter had this to comment about Institution B sitting arrangement:-

"Have you been to NELT? Imagine New Education Lecture Theatre (NELT) accommodates more than 400 students, deaf students are not reserved a place in front of class where they can sit near SLS providers, even the interpreter sometimes doesn't know where the deaf students are seated".

The above section presents the situation obtained on the ground at tertiary institutions with regard to inclusive tertiary institutions preparedness for SLI to enable it to be accessible to deaf students.

4.5.8 Work Experience and Education of SLI

During the study educational backgrounds of SLS were examined in terms of interpreting work experience, informal and formal education. Informal education was a kind of education SLS providers attained or obtained through short term training or workshops. In contrast formal education was knowledge and skills SLS providers attained through attending full time diploma or degree programs at either colleges like Institution A and Institution B. Three SLIs had a diploma in education and one a degree in various fields such as Special Education, none of them had formal training in the field of interpreting. Instead, all of them had informal training consisted of a three month basic course in SL interpreting conducted by NGOs such as ZNAD, Zambia

National Association of Sign Language Interpreters (ZNASLI) and Association of Sign Language Interpreters of Zambia (ASLIZ).

4.6 Measures in Place to Sustain Interpreting Services in Tertiary Institutions

4.6.1 Role, Responsibility and Interventions of Government

This assessed views of administrators and other respondents on the role, responsibility and interventions of the government. The views of respondents were determined against the backdrop of the role and responsibility of the government to ensure SLS sustainability. During interview with administrators, sentiments were expressed that it was the role of the government to ensure that SLS was sustainable through sound laws, policies and resources provision.

Respondents gave the following views when asked to express their views on the role of government.

P1, “Our government adopted a number of international conventions…. the Convention on the Rights of Persons with Disabilities and Education For All instruments and more... That is good for persons with disabilities”.

P2, “we have the mandate to ensure various services are accessible to persons with disabilities which includes inclusive education. We are mandated by law to ensure that institutions responsible for providing social services compliance with the law”.

P2 adds, “we have started inspections to various public places for instance our Sign Language expert recently started going around to inspect hospitals, secondary schools but tertiary institutions we have not yet”.

Questions on the sources of current funding for provision of SLS in tertiary institutions revealed that the two institutions were either receiving financial assistance from other sources other than the government or from local income to sustain SLS.

Ad1 explains, “Our friends in Holland have financed us now and again but we need resources from within.” It is not good to depend on donors.” “We need a local initiative”, adds Ad1.

Majority of respondents suggested that SLS would only be sustainable when the government came on board and when tertiary institutions providing tertiary education had put in place policies on SLS and Disability.

Adi2 admits, *"to be frank, there is no disability policy at our institution. Without the policy there is no financial allocation from the central account hence no permanent establishment. The key is having disability policy."*

These were the views of respondents with regard to the problem of sustainability of SLS at tertiary institutions.

4.6.2 Poor Environment

Some data was obtained through observation. The physical environment in this study was interpreted to mean any noise that could interfere with the conceiving of information by Deaf students through sight medium from SLI. It also means any barrier that could interfere with deaf students conceiving signing through sight or SLI conceiving spoken information through auditory medium. Lighting was observed to determine it suitability for deaf to access SLS. At Institution B lighting appeared to be dim for sign and lip reading and finger-spelling reading. In some other Classrooms at Institution B, there was too much lighting while in others and dim lighting were common in most lecture classrooms and these acted as noise pollution to SLS accessibility. At Institution B Seating arrangements were also observed to determine their suitability for deaf students accessing SLS. There was no reserved seat arrangement for deaf students to sit near the SLI interpreter as possible. The best suitable seating is where Deaf students sat in front near the lecturer. In most situations observed Deaf students were made to sit behind the lecture halls or classrooms. The use of visual aids were rare at both Institution A and B.

Institution A physical environment was observed to be suitable due to small medium classrooms and good lighting.

Those were observations made to establish how SLI was accessible to deaf students in the classroom.

4.6.3 Compliance by institutions on SLI provision

Three (3) SLI out of four were of the view that monitoring and supervising of SLI in institution was not being done as expected. The views of three (3) SLI were:-

SL1 observes, “It seems to me SLS there is no one who cares about SLS for deaf students.” It is like a pilotless plane.”

SL2 retorted, “I think Zambia Agency for Persons with Disabilities (ZAPD) is gov’t body that is supposed to police and ensure compliance, sign language is important to those without hearing”. “it is not clear whether such a mandate is implemented.”

SL4 simply said,” who is supposed to take care of SLI things as they are now?” It seems as if laws are toothless on compliance.

4.7 Summary

The study has presented the findings on SLI accessibility to Deaf students in inclusive higher institutions of learning. The review has analyzed the availability of SLS in tertiary institution in terms of availability, quality, and quantity. It has presented observations on physical environment, compliance on SLI provision. It has presented some proposed benefits and challenges to SLI in tertiary institutions.

CHAPTER FIVE: DISCUSSIONS OF RESEARCH FINDINGS

5.1 Overview

This chapter presents discussions of the main findings that were identified as the key factors that limited accessibility of SLS to deaf students in tertiary institutions. The study was carried out at UNZA and ZAMISE which practice the principles of inclusive education at tertiary level through sign language interpreting. The key factors were classified and discussed as limitations to accessibility and benefits to highlight all stakeholders. Other key factors were discussed as challenges that demanded attention from all stakeholders involved in the provision of SLS in tertiary education through inclusive schooling. Moreover other factors were discussed as measures of sustainability of SLS. The chapter further presents recommendations and summary of the main findings. The themes discussed below followed a categorization and sub-category procedure identified from the data.

5.2 Accessibility of Sign Language Interpreting To Deaf Students in Tertiary Institutions

This objective sought to determine the extent to which SLS services were accessible. The views of participants in the study are discussed under common themes.

The study findings revealed that there were not enough SLIs available to provide the facility were not enough in terms of the required number and quality at both institutions. For instance the Institution B has a total of forty (40) lecturers against one (1) sign language interpreter through whom the service is expected to be delivered. What worsens the whole dilemma is that most inclusive tertiary classes cater for a total average of forty (40) students per class and the only SLI is expected to service them all through voice-interpreting and sign-interpreting. This means sole interpreter had a heavy responsibility to provide SL services to lecturers, deaf students and hearing students. This finding was in agreement with Fernandez-Viader and Fuentes (2004) argument that for many Deaf and Hard-of-Hearing students provision of an interpreted education is a requirement in order to support classroom communication; that interpreting is one aspect of providing access to all teachers and peers communication in a school; that the presence of interpreters allows Deaf students to learn in the same

manner as their hearing peers in inclusive classes. The study also established that there were not financial contributions from central government towards provision of SLS in tertiary institutions. These findings could be argued from data attributed to administrators and lecturers that indicated the likelihood that government financial contributions to tertiary institutions were non-existent. The end result is that remunerating SLIs has been a far difficult problem for some institutions making use of SLS at tertiary level. These negative vices are an impediment to motivation SLIs and adversely affect SLI service delivery and therefore accessibility by deaf students. Lack of resources is taken to mean a hard problem for tertiary institutions. This is in agreement with

WHO & World Bank (2011) and Glazz (2011) note that the most obvious financial barrier to implementation of successful inclusive practices in schools is the growing inadequacy of finding for education, in general, let alone for special education resulting in none provision of specialized materials and equipment for the education of the children with disabilities. In Africa Zambia included inclusion implementation is hindered by lack of or inadequate financial resources from the governments (Ametepee &Anastasiou, 2015; Musukw 2013, Muwana, 2012).

The study also established that most SLIs lacked interpreting skills due to lack of adequate training in the field of SLI. These findings are in agreement with the assertion made by several researchers that the resultant shortage of SL interpreters seem primarily due to the increase in demand for interpreters' services at the post-secondary level, as well as the limited availability of skilled interpreters to work effectively in tertiary education settings (Hyde et al., 2009; Knox, 2006; Komesaroff, 2005; Russell & Demko, 2006; Sameshima, 1999).

Moreover, the Education Act of 2011 provides for the use of Sign Language as a medium of instruction to any learner who uses sign language as the learner's first language or who has special need for SL in educational institutions. For this reason recently there have been some efforts by Institution B EPSSE to strengthen their component through specialization in disability studies. This is manifested in their recruitment of lecturers specialized in Deaf issues. However, the extent of their specialization Sign language still remains limited. Hence it can be argued that even if the 2011 Education Act emphasizes the use of Sign language in the education of deaf

students the graduate teachers from such tertiary institutions as KTC, ZAMISE, UNZA and other teacher training institutions join the teaching service with very limited sign language skills and deaf culture. This implies that they lack both the linguistic and communicative competence in Sign language in order to effectively teach the Deaf. These assertion is in agreement with (Mulonga, 2013) that most teachers of the Deaf do not undergo comprehensive training which prepares them to adequately teach Deaf children. It might be a good idea if a full degree in Deaf Studies could be introduced.

5.3 To establish the benefits of Sign Language Services to deaf students at tertiary education level,

The findings revealed that majority of participants agreed that there were some benefits that could be derived from SLS. The benefits found during the study were simplification of difficult lectures and facilitation of comprehension of hard concepts. This finding was argued upon by respondents who stated that:-

"With the availability of SLS difficulty lectures are made simple and easy to understand because handouts alone are not enough, it is not easy for us to understand concepts if there is no interpreter, but when interpreter is present we are able to ask our lecturers questions about those concepts where we fail to understand."

This finding was in agreement with Fernandez-Viader and Fuentes (2004) argument that for many Deaf and Hard-of-Hearing students provision of an interpreted education is a requirement in order to support classroom communication; that interpreting is one aspect of providing access to all teachers and peers communication in a school; that the presence of interpreters allows Deaf students to learn in the same manner as their hearing peers in inclusive classes. Therefore, SLS enables deaf students to have access to general classroom curriculum like their typical peers.

5.4 To explore the challenges in the provision of Sign Language Services at tertiary level.

The study revealed a number of challenges that imposed a limitation to SLS accessibility.

5.4.1 SLIs training and experience

The assessment of views of SLIs revealed that although SLIs had enough experience and training in various fields, but none of them had any professional training relevant to the field of SLS delivery. The experience among SLIs varied between 2 to 6 years. Despite those credentials, none of respondents had any professional or formal training in the field of interpreting.

In addition, the assessment of views of SLI revealed that all interpreters had training in various fields like teaching and business. All interpreters had a three month basic training in SL interpreting conducted by NGOs such as ZNASLI, ZNAD and ASLIZ. The findings further revealed none of those NGOs had accreditation to government regulatory boards under the Ministry of Higher Education as required by law.

5.4.2 Inadequacy of training to educational assignments

The findings revealed that the level of training of SLIs was inadequate to educational assignments in higher institutions of learning. Although majority of interpreters felt that their present level of training was adequate to interpret at any level of tertiary education, observations made revealed that their level of training was inadequate. This observation was supported by the views expressed by all other respondents who stated that the level of SLS provision training was inadequate. Majority of lecturers attributed challenge to SLS accessibility by deaf students to SLI lack of skills, manpower shortage in the field of SLS while administrator respondents stated that lack of recognition of SLS as a profession by the government was as a barrier to SLS provision. Majority of lecturers noted that SLIs didn't have adequate skills to interpret during practical lessons and that there was a shortage of manpower. This finding was consistent with the study findings that there was a well-documented shortage of qualified interpreters (Baily & Straub, 1992; Jones, Clark, & Stoltz, 1997) in the field of interpreting. The above findings indicate lack of recognition by the government of SLI as a profession could in part contribute to challenges for deaf students to access it in tertiary institutions. This also could be the reason behind having not enough interpreters to provide the service. Skills are also lacking among service providers due to lack of professionalism in the service.

5.4.3 Working conditions, conditions of service and remuneration

The findings revealed that there was lack of motivation for SL interpreters. Some of the negative factors noted during the study include poor working conditions, poor conditions of service and little remuneration. The study further showed that there is lack of job security among the SL interpreters. All interpreters were only employed on contractual arrangements by individual tertiary institutions. The findings also revealed that salaries were paid late as institutions depended on their own sources of income to pay salaries and didn't receive grants from the central government for interpreters' salaries. Besides, the above working conditions were poor such that SL interpreters were given no breaks during interpreting process and lecturers did not share information on lessons prior to lectures. These revelations were in agreement with several authors that interpreters are usually paid on an hourly basis as casual or permanent part-time employees and it is quite rare for interpreters to be employed full-time (Hyde et al., 2009; Knox, 2006; Komesaroff, 2005; Russell & Demko, 2006; Sameshima, 1999). These findings are an eye opener on the poor working conditions and conditions of service SLIs are subjected to as they provide the much needed service in inclusive institutions. It could be the reason why most people are reluctant to take up sign language interpreting as a career. If those constraints remain unsolved accessibility of SLLI to deaf students would probably remain unsolved.

5.4.4 Variations in Sign Language

The study revealed that although most deaf students were drawn from different provinces or regions which is a factor that could contribute to the likelihood of variations in SL, the findings revealed that no challenges were encountered due to dissimilarities in SL. This finding was inconsistent with the study conducted by Corson (2010) in Ghana on Sign Language Variations that found that learners faced a lot of challenges when teachers dictate work to them due to SL variations and that those Sign Variations among students led them to write wrong words or sentences during dictation. These variations imposed a challenge to delivery of SLS in inclusive classroom.

5.4.5 Challenge of non-signing lecturers

The findings revealed that majority of lecturers were unable to use SL. This was therefore a challenge to accessibility of SLS in inclusive classroom. This revelation was supported by the majority of deaf students who said lecturers never communicate via sign language. Instead lecturers and students resorted to using writing, phone texting and paper-ink without signing.

5.4.6 Poor physical accessibility of the classroom

Most classrooms observed during the study were found not to be conducive for SLS accessibility. An ideal classroom for SLS accessibility is the one where noise pollution is minimized to the greatest extent possible. In most classrooms where Deaf students access SLS lighting, acoustic and visual access left much to be desired. In some cases light was too bright like ordinary bulbs while in others lighting was dim. Too much lighting and dim classrooms could adversely affect the Deaf students' ability to read some signs, finger-spelling and non-manual markers like mouthing, smiling, frowning and other face expressions. Moreover, extraneous noise was found to be a barrier to or a distraction to the ability of SLIs to grasp meaningful spoken information which is a prerequisite to interpreting some correct information via sign language medium to Deaf audience. Additionally, classroom seating arrangements were noted to adversely affect some Deaf students' access to SLS. One such observation made was at UNZA NELT Theatre Lecture Hall where most Deaf students were made to seat far from lecture platform where Sign Language interpreters interpreted from. That interfered with a clear view of all visuals and the interpreter. However, after awareness was made with the lecturers and the students body, Deaf students were able to sit near or in front of the room to have a clear signs.

The Deaf students need some visual aids to further facilitate their learning. The use power-point, visual diagrams and text captioning on a project with SLI is of tremendous benefit to the Deaf students to conceptualize some concepts and lessons. For the Hard of Hearing Assistive Technical Capabilities provided educators with tools for maximizing auditory abilities such as FM Systems which can project sound from the lecturer's microphone or C-print which is a speech-to-text computer system are of beneficial.

5.5 Measures that have been put in place to ensure sustainability of Sign Language Services in tertiary institutions.

The study found out that some measures are in place to guarantee the sustainability of SLS at both various tertiary institutions in the country. Among the measures that had been documented are:-

5.5.1 Institutional, Social, legal and policy frameworks to ensure SLS sustainability

The findings of the study revealed that the government had put in place a number of institutional, social, legal and policy frameworks as part of the measures to ensure the sustainability of SLS in inclusive education. The study further established that the government had adopted a number of guidelines and conventions the international community has put in place as standard practices for member states to adopt to ensure the sustainability of various social services to support inclusion of persons with disabilities in tertiary institutions.

The Zambian government has adopted a number of policy and legal frameworks (Matafwali, 2007). These legal instruments include the Persons with Disabilities Act of 2012 that guarantees accessibility to information and communication to all persons with disabilities including those with hearing impairments. The Act further guarantees that the Ministry responsible for Education shall by statutory order designate public educational institutions to provide the necessary facilities and equipment to enable persons with disabilities to fully benefit from the public educational institutions. Although the Act does not explitictly state what the necessary facilities are, these facilities are intepreted to mean such facilities as Sign Language Services among others. The Ministry of General Education Policy (2011) requires that education should be provided through inclusive schooling where students with Hearing Impairmentslearn alongside their non-disabled peers.

There is then the National Policy on Disabilities (2010) that was enacted with a view of ensuring full integration of persons with disabilities within the mainstream society. And the National Policy on Education (Educating Our Future) of 1996 which recognizes the importance of people's right to education regardless of their abilities. Above all the constitution of Zambia Article 23 (3) prohibits discriminating against

persons with disabilities. It provides for just and fair distribution of social benefits to meet the needs of people with disabilities. The above legal and policy frameworks are in line with the international instruments that Zambia signed and ratified- such as the United Nations Convention on the Rights of people with Disabilities and the Salamanca Statement on Principles, Policy and Practices on Special Needs Education. However, the country does not have a policy specifically on inclusive education (Noyoo, 2000; Mubita, 2009).

Moreover, the government had adopted the Convention on Rights of People with Disabilities aimed at protecting, promoting and ensuring that people with disabilities enjoy all the basic rights irrespective of their abilities. The Salamanca Statement on Principles, Policy and Practices in Special Needs Education emphasis on the need to educate all children together regardless of their circumstances. The Standard Rules on the Equalization of Opportunities for Persons with Disabilities on the other hand aims at ensuring that all barriers to effective participation of persons with disabilities in social activities are removed (UN, 1993; Guernsey, Nicoli & Ninio, 2007; Barron & Amerena, 2007; Clement & Read, 2008; Croft, 2010;). According to conceptual framework used in this study, when there are social, legal and institutional frameworks in place, SLI is made available to deaf students because deaf students would be able to make a demand on the basis of those laws and policies.

The study findings further revealed institutional frameworks were in place to ensure persons with disabilities are included in social activities like inclusive tertiary education. Among them included the Ministry of Community Development and Social Services (MCDSS) which is responsible for policy formulation and implementation dealing with people with disabilities, Zambia Agency for Persons with Disabilities which coordinates and supervisors all organizations dealing with people with disabilities. It is also responsible for overseeing the implementation of policy on disability.

5.5.2 Sign Language Interpreters Training

The study findings revealed that SLI training was part of sustainable measures put in place to ensure the facility was available and therefore accessible to deaf students in tertiary institutions. Finnish Association of the Deaf were pioneers of SLI training in

Zambia (ZNAD Brochure, 2010) and latter the training programme was taken over by Danish Association of the Deaf (Kanyanta, 2003). Zambia National Association of the Deaf has to date continued conducting SL training activities on a three month basis using the same personnel trained under the Danish project. The researcher noted that while it was good to have a training programme, the programme needed to conform to the aspirations of the community benefiting from the same. It should meet the training needs of members in terms of quality, skills. The study established that the training had not been enough to meet the needs of assignments in tertiary institutions.

e). Growth and Standardization of Sign Language

The study revealed that promotion of growth and standardization of Sign Language was part of the measures to sustain the facility. Growth and standardization of Sign language could be done through socialization of deaf people at deaf community sites such as deaf clubs (Mbewe, 2009). Moreover, the Zambian dictionary also had been documented and supplied to tertiary institutions and schools. The aim was to have the standard Zambian Sign Language to all learners with hearing impairments so that they could access the facility.

5.5.3 Lack of clear policy on inclusion in tertiary

The study established that a policy on inclusive education had been put in place as part of sustainability measures on providing among services SLI. Disability Act (2012) provides for the provision of tertiary education through sign language services as assistive devices. Disability Policy of 2010 also provided for the use of Sign language interpreting so that deaf people could access social services like education. However, it is remains unclear about roles and responsibilities among institutions responsible for monitoring and implementation.

Summary

The study revealed that SLS accessibility was constrained by a number of factors. Interpreters' training was inadequate in terms of both quality and quantity and there was no specialization in areas of interpreting. Training providers lacked accreditation to relevant regulatory government statutory bodies thus compromising professionalism in the service. Working conditions and conditions of service were pathetic. There was no

job security, salaries were paid late and SLIs work long hours without breaks. Although the government has put in place incredible legal and social policy frameworks to facilitate accessibility of SLS, there still remained a wider gap between legal and policy frameworks and implementation. The study findings revealed SLI benefits as facilitating meaningful learning and teaching activities to enhance competitiveness, classroom interaction, communication and participation among all students including deaf students. The third objective of challenges, the study note lecturers' incompetency in sign language communication , lack of adequate manpower, poor classroom management, poor SLS sustainability, lack of motivation and professional training for SL interpreters as challenges. The study documented sustainability measures institutional, social, legal and policy frames in place, international conventions such as CRPD, measures to stimulate growth and standardization of sign language through compilation of sign language dictionary and formulation of deaf clubs at tertiary institutions.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.1 Overview

The chapter presents the conclusion and recommendations of the study. The study sought to establish SLS accessibility to deaf students in tertiary institutions, the benefits of SLS to deaf students at tertiary education level, to explore the challenges in the provision of SLS at tertiary level and identify measures that had been put in place to ensure sustainability of SLS in tertiary institutions

6.2 Conclusion

In conclusion, the study had established that SLS accessibility was constrained by a number of factors. Inadequate interpreters' training in terms of both quality and quantity, lack of specialization in the subject areas of interpreting makes accessibility difficult for deaf students. An interpreter who is assigned to interpret a lecture in Neuropsychology or Mathematic class should have specialization in that particular field to simplify difficult concepts to deaf students. Sign Language has no sign equivalent of spoken words hence the use of Total Communication in SLI process. Lack of professionalism among NGOs based training providers is noted. NGOs are not accredited to relevant regulatory government statutory bodies. SLI working conditions and conditions of service for SLIs were found to be pathetic with no job security, salaries are paid late and SLIs work long hours without breaks though SLI is highly physical hence fatiguing. There is still remained a wider gap between legal and policy frameworks and implementation. Financial resources are also a constraint. The study has established that as part of sustainability measures the government put in place incredible legal and social policy frameworks to facilitate accessibility of SLS. Some NGOs continue to provide SLI training to sustain the service. Institutional, social, legal and policy frameworks are measures put in place, international conventions too such as CRPD were adopted. Moreover, to sustain SLI ZNAD compiled a sign language dictionary and Ministry of Education has encouraged the formation of Sign Language clubs at institution of learning to stimulate growth and standardization. The benefits derived by deaf students from SLI are facilitating meaningful learning and teaching activities to enhance competitiveness, classroom interaction, communication and participation among all students including deaf students. Challenges such lecturers'

incompetency in sign language communication, lack of adequate manpower, poor classroom management, poor SLS sustainability, lack of motivation and professional training for SL interpreters make SLI accessibility all the more dramatic.

6.3 Recommendations

Based on the findings of this study, the following recommendations have been made to the government and NGOs concerned with regard to provision of SLS in tertiary institutions.

a) Recognition of SLS as a profession

There is need for the government and tertiary institutions to accord sign language interpreting the status of a full time profession just like lecturing and teaching.

b) SLS personnel development
    i) UNZA, ZAMISE and other NGOs specialized in providing interpreters training should collectively come together and develop a training program for interpreters that would result into certification of SLIs at certificate, diploma and degree levels;
    ii) All institutions providing interpreters training in Zambia should be registered with the Department of Technical Education and Vocational Training so as to enhance professionalism among trainers and interpreter trainees,

c) Sustainability

For sustainability of SLS, the Ministry of General Education, Ministry of Higher Education, Ministry of Community Development, Mother and Child should design a joint National policy on the use of SLI in tertiary Institutions that would guide its supervision, monitoring and implementation.

d) Monitoring and supervision of implementation of policy on inclusion. Each line Ministry should develop a monitoring and supervising mechanism for its departments to ensure the policy of inclusive education is well implemented. ZAPD should take a leading role implementation- monitoring to ensure compliance among tertiary education providers.

e) Use of Total Communication in the SLI process

Although the use of Sign Language from nursery to university in the education of the deaf is desirable and commendable, the researcher recommends that Total communication system was more suitable at tertiary threshold. This is because when deaf students arrive at this level they would have already became bi-lingual and bi- cultural in sign language and spoken languages hence suitability of Total Communication in tertiary schooling.

f) Sign Language Policy

Because of the confusions that have prevailed over Sign Language in school and its long oppression endeavored at both national and global level, the researcher wishes to recommend that the government should put in place a policy solely on sign language which would guide implementation and hence accessibility at all levels of social participation.

REFERENCES

Ainscow, M. (1991). Effective schools for all. London: Fulton.

Americans with Disabilities Act. (1990). 42 USCA Sections 1201 et.seq.

Alahmadi, M. (2007). The Problems of integrated physically handicapped students in Almadina

Almonawarh School, The Arabia Journals for Special Education, 10, 13-92.

Alqaryouti, I, A. (2010). Inclusion of the disabled students in higher education in Oman. International Journal of Cross-Disciplinary in Special Education (IJCDSE), 1(4), 216-222.

Ametepee L.K & Anastaious, D. (2015). Special and Inclusive Education in Ghana: Status and progress, challenges & implication.

Armstrong, D. F (1999). Original Signs: Gesture, Sign and the sources of language. Washington, D. C.: Gallaudet University Press.

Baily, J. & Straub, S. (1992). Interpreting services. ASHA, 34, 51-53.

Barron & Amerena, 2007 Barron, T. & Amerena, P. (2007). Disability and Inclusive Development. London: Leonard Cheshire International.

Beattie, R. (2006). The oral methods and spoken language acquisition. In P.E. Spencer and M. Marschark (Eds.) and hard-of-hearing children, New York: Oxford University Press.

Bell, A. G. (2005). The question of Sign Language and the utility of signs in the instruction of the deaf. Washington, DC: Sanders Printing Office

Berent, G. (2003). Sign language-spoken language bilingualism; Codemixing and mode mixing by ASL –English bilinguals. Bhatia & Ritchie (Eds). The handbook of bilingualism. Oxford, UK: Blackwell.

Bernstein, D. K and Tigerman, E. (1993). Language and Communication Disorders in Children. Allyn and Bacon: New York.

Best, J.W and Kahn, J.V. (2006). Research in Education. 10th Ed. New York: Pearson & AB.

Bloom, L and Lahey, M. (1978). Language Development, and Language Disorders. John Willy and Sons: New York.

Cameron, D. & Valentine, F. (2001). Disability and Federalism: Comparing Different Approaches to Full Participation. Montreal: McGill-Queens University Press.

Carnoy, M., & and Chisholm, L. (2008). Towards Understanding Student Academic Performance in South Africa: A Pilot Study of Grade 6 Mathematics Lessons in South Africa. Pretoria: HSRC.

Cerney, B. (2005). The Interpreting handbook, Part I. Colorado Springs, CO: Hand & Mind Publishing.

Chibwe J. (2015). Contribution of Sign Language variations to academic performance of learners with hearing impairments in selected copperbelt and Lusaka Primary Special schools in Zambia.

Clements, L. & Read, J. (2008). Disabled People and the Right to Life. London: Routledge Taylor & Francis Group

Croft, A. (2010). Including Disabled Children in learning. Challenges in Developing Countries. CREAT Pathways to Access Research Monograph No.33 June 2010. http://www.dfid.gov.uk/R4D/PDF/Outputs/ImpAccess_RPC/PTA36.pdf Accessed 19/03/11

Colin, M., Andrew S., Marisol Concha. Global burden of hearing loss in the year 2000 World Health Organization (WHO).

Colonomos, B. (2004, June). Foundations of the Interpreting Process I, a presentation at Suffolk County Community College.

Cummins, J. (2000), *Language Power and Pedagogy: Bilingual Children in the Crossfire.* Clevedn: England Multilingual Matters.

Dimbleby, R., & Graeme, B. (1992). More than Words. An Introduction to Communication. Clay Limited, England.

Disability Act of 2012 of the Laws of Zambia.

Drasgow, E. (1998), *American Sign Language as a Path Way to Linguistic Competency* Retrieved 12 December 2016 from http://www.findarticles.com/p/ Articles/miHb3130/is-n3-v64aj-n2808802.

Dugdale, P. (2001). Talking Hands, Listening Eyes: The History of the Deaf Association of New Zealand, Wellington: The Deaf Association of New Zealand.

Eron, Lawrence. (1996). Communication between Children with Hearing Impairment Unpublished thesis, Oslo Norway

Fernández-Viader, M. P., & Fuentes, M. (2004). Education of deaf students in Spain: Legal and educational politics developments. Journal of Deaf Studies and Deaf Education, 9, 327-332.

Frishberg, N. (1986). Interpreting: An introduction. Maryland: RID Publications.

Fuller, M., Healey, M., Bradley, A. & Hall, Y. (2004). Barriers to learning, a systematic study of the experience of disabled students in one university. Studies in Higher Education, 29(3)303-318.

Gall, M.D., Gall J.P., &Borg W.R. (2003). Educational Research- An Introduction. New York. Longman Publishers.

Glalazz., J (2011). Perception of the barriers of effective inclusion in one primary school: Voice of teachers and teaching assistants. Support of learning, 26(2) 56-63.

Gordon, R.G.JR (ed) (2008). Ethnologue: Languages of the World, 15th Edition, Dallas, Texas: Sil International. Online Version: The Ethnologue.

Groce, N. E. (1985) Everybody here spoke sign language: Hereditary deafness on Martha's Vineyard. Cambridge, MA: Harvard University Press

Guernsey, K. Nicoli, A. & Ninio, A. (2007). Convention on the Rights of Persons with Disabilities: Its Implementation and Relevance for the World Bank. S.P discussion Paper No. 0712. New York: World Bank Publication.

Gürkov R et al. Ototoxicity of artemether /lumefantrine in the treatment of falciparum malaria: a randomized trial. Malar J. 2008 Sep 16;7:179. doi: 10.1186/1475-2875-7- 179.06; 27:1–19

Henderson D et al. The role of oxidative stress in noise-induced hearing loss. Ear Hear. 2006; 27:1–19.

Hills, J. and Lucas, C. (2009). A Presence Ignored. The Case of the Black Deaf Community in the USA: Retrieved from http://www.blackasprojectgaullude:ed.pdf.

Humphries, J. & Alcorn, R. (2001) So You Want to Be an Interpreter? Third Edition, Austin, TX: H & H Publishing Co.

Hyde, M., Punch, R., Power, D., Hartley, J., Neale, J., & Brennan, L. (2009). The experiences of deaf and hard-of-hearing students at a Queensland University: 1985-2005. Higher Education Research and Development, 28(1), 85-98.doi:10.1080/07294360802444388.

Individuals with Disabilities Education Act. Reauthorized in 1997.20 U.S.C. 1400 et. Seq.

Johnson, K. (1991). Miscommunication in interpreted classroom interaction. Sign Language Studies, 70, 1-34.

Jones, B.E. (1993). Responsibilities of Educational Sign Language Interpreters in K-12 Republic schools in Kansas, Missouri and Nebraska. Unpublished Doctoral Dissertation: University of Kansas.

Jones, B. E., Clark, G., &Soltz, D. (1997). Characteristics and practices of sign language interpreters in inclusive education programs. Exceptional Children, 63(2), 257-268.

Kamukwamba, L.K. (2017). Thesis on Factors influencing the use of sign language in the learning of HI: a case study of upper primary schools in Lusaka district. UNZA in print.

Kanyanta, B.S. (2003), Special Needs Education for the Deaf and Hard of Hearing. Paper Presented at the Workshops for Colleges of Education. Lusaka, Zambia.

Karchmer, M. A., & Mitchell, R. E. (2003). Demographic and achievement characteristics of deaf and hard-of-hearing students. In M. Marschark & P. E. Spencer (Eds.), Oxford handbook of deaf studies, language, and education (pp. 21–37). New York: Oxford University Press

Kersting, S. A. (1997). Balancing between deaf and hearing worlds: Reflections of mainstreamed college students on relationships and social interaction. Journal of Deaf Studies and Deaf Education, 2, 252-263.

Kirk, S. A and Gallagher, J.J. (1989). Educating Exceptional Children. (6th Ed). Houghton, Mifflin Co. Britain.

Kirk, S .A (2007). Educating the Exceptional Children. New York: Houghton Mifflin. Harcourt Publishing Company.

Kirk, S .A (2009). Educating the Exceptional Children. (12thEd.) USA Houghton Mifflin: Harcourt Publishing Company

Knox, S. (2006). Sign language interpreting in an academic setting: Preparation strategies and considerations. Sites: A Journal of Social Anthropology and Cultural Studies, 3(1), 183-204.doi:10.11157/sites-vol3iss1id47.

Knuckey, J., & Cumpston Bird, T. (2001). Seeing is believing: Interpreting for deaf students in tertiary education. Fine Print, 24(4), 23-26.

Kombo, D.K. and Tromp, D.L.A, (2006). Proposal and Thesis Writing - An Introduction. Nairobi: Pauline Publications.

Kombo, D.K. & Tromp, D.L. (2009). Proposal and thesis writing; an introduction. Nairobi: Pauline Publications Africa.

Komesaroff, L. (2005). Category politics: Deaf students' inclusion in a "hearing university. "International Journal of Inclusive Education, 9(4), 389-403. doi: 10.1080/13603110500138301

Kortesalo, M. (2015). A study of qualification processes and competencies of Sign Language interpreters in African context - A contribution to the process of establishing a Sign Language interpreter training gram in Ethiopia thesis. Diaconia University of Applied Sciences. Turku, Finland.

Lang, H. G. (2002). Higher education for DeaKnuckey, J., &Cumpston Bird, T. (2001). Seeing is believing: Interpreting for deaf students in tertiary education. Fine Print, 24(4), 23-26.students: research priorities on the new millennium. Journal of deaf studies and deaf education, 7 (4), 265-280.

Langer, E. C., & Schick, B. (2004). How accessible is classroom discourse to deaf children using educational interpreters? Paper presented at the Colorado symposium on Deafness, Language, and Learning, Colorado Springs, Co.

Levin, J. R. (1994). Crafting educational intervention research that's both credible and creditable. Educational Psychology Review, 6, 231–243.

Lorenzo, M. Schneider & M. Priestly (Eds.), Disability and social change: a South African agenda (pp. 8-18). Cape Town: HSRC.

Lucas, C., Barley, B. and Vall, C. (2003). What is Your Sign for Pizza? An Introduction to Variation in American Sign Language. Washington DC: Gallaudet.

MacCay, V., & Andrews, J. F. (1990). The Psychology of Deafness: Understanding Deaf and Hard of Hearing people – (pg. 88 – 90). United States Longman Publishing group.

Marschark, M., Sapere, P., Convertino, C., & Seewagen, R. (2005). Educational interpreting: Access and outcomes. In M. Marschark, R. Peterson, & E. A. Winston (Eds.), Sign language interpreting and interpreter education: Directions for research and practice. New York: Oxford University Press.

Marschark, M., Sapere, P., Convertino, C., Seewagen, R. &Maltzen, H. (2004).Comprehension of sign language interpreting: Deciphering a complex task situation. Sign Language Studies

Matafwali, B. (2007). ECCD Evaluation Report. Lusaka. UNICEF Publication.

Mayberry, R.I. & Eichen E.B. (1991). The Long- lasting Advantage of Learning Sign Language in childhood: Another look at the Critical Period for language Acquisition. Journal of Memory and Language, 30pp 486-512.

Maxwell, J. A. (2005). Qualitative Research Design: An Interactive Approach. Applied social research methods series: v. 41. Thousand Oaks, CA: Sage Publications.

Mayberry, R.I. (2007). When Timing is everything: Age of First Language Acquisition, Effects on Second Language Acquisition. Applied Psycholinguistics, 28 pp 537-54

Mbewe, M. (2010). Development of Sign Language in Zambia: Government Printers, Lusaka: Zambia.

Mbewe, M. (2009). Development of Sign Language in Zambia: Government Printers, Lusaka: Zambia.

McKee, R. L., & McKee, D. (1992). What's so hard about learning ASL? Students' and teachers' perceptions. Sign Language Studies, 75, 129-158.

Ministry of education (2011) Education Act Bill 2011.

Ministry of Education (1996). Educating Our Future: Lusaka, Government Printers: Zambia.

Ministry of General Education Policy (2011). Ministry of Education.

Ministry of Finance (2010), Census Report 2010. Lusaka: Central Statistics Office.

Ministry of Finance (2000). Census Report 2000. Lusaka: Central Statistics Office.

Mitchell, R. E., &Karchmer, M. A. (2004). Chasing the mythical ten percent: Parental hearing status of deaf and hard of hearing students in the United States. Sign Language Studies, 4, 138–163.

Moors, D. F. (1996): Educating the Deaf: Psychology, principles and practice. Houghton, Mifflin Co. Geneva.

Mubita,G.I. (2009) Inclusion of People with Disabilities in Zambia. www.ilo.org/wcmsp5/group7---ed_ed_emp/-ifp_skills/documents/publication/wcms_11500.pdf. Accessed 20/10/16

Mulonda .M. (2013). A situational analysis in the use of Sign Language in the education of the Deaf in Zambia: A case of Magwero and St Joseph Schools for the Deaf. University of Zambia. Lusaka.

Mugenda, O. M., & Mugenda A. G. (1999). Research Methods, Quantitative and qualitative Approaches. Nairobi: Acts Press

Mulrooney, K. (2002). Variation in ASL finger spelling. In turn-taking, Finger spelling, and contact in signed languages, ed. C. Lucas, 3 – 23. Sociolinguistics in Deaf Communities, Vol. and Washington D.C. Gallaudet University Press.

Musukwa, F. (2012, July 24). Fighting for Fairness in Zambia. Retrieved from https:www.opensociety foundations.org

Musukwa, F. (2013). Adoption of inclusive Education for children with disabilities in Zambia: The implications of full domestication of the Convention on the Rights of Persons with Disabilities. Dissertation, University of Ireland Galway. (Unpublished)

Muwana, F.C. (2012). Zambian student teachers' attitudes toward inclusiving students with disabilities in general education classrooms. Dissertation, University of Illinois at Urbana-Champaign.

National Policy on Disabilities (2010). Ministry of Community Development and Social Welfare Services. Lusaka. Government Printers.

Niesser, A. (1983), *the other side of silence: Sign Language and the deaf community in America.* York: Knopf, 1983. Print.

Nobuyuki, H. & Mihoko, K.H. (2013). Establishing Sign Language in Deaf Education in Japan: A Sociolinguistic Approach

Noyoo, N. (2000) Social Welfare in Zambia. Lusaka: Multimedia;

Omugur, J. P. (2007). Sign Language Interpretation Services for Children with Hearing Impairment in Inclusive Secondary High Schools: A Case Study on the Challenges Faced by Sign Language Interpreters in One Secondary High School – Uganda. Department of Special Needs Education, Faculty of Education, University of Oslo, Norway. 2007

Okwaput S. (2000). 'Full integration of Children with Hearing Impairment in Ordinary Schools' (Unpublished Master Thesis) Oslo, Norway.

Orodho, A., & Kombo, D.K. (2002) Research Methods. Nairobi: Kenyattta University, Institute of open Learning

Orodho, J. A. (2008). Techniques of writing research proposals and reports in educational and social sciences. Nairobi: EALB.

Patton, M.Q (2001). Qualitative Evaluation and Research Methods (3rd Ed.). Thousand Oaks, CA: Sage.

Persons with Disabilities Act of 2012 of the Laws of Zambia

Powell, D. (2011). Floating in the mainstream: New Zealand deaf students learning and social participation experiences in tertiary education (Doctoral dissertation). Griffith University, Brisbane, Australia. Retrieved from ttps://www120.secure.griffith.edu.au/rch/file/50 908dc2-8eda-37b0-aeb7-913daa656a3a/1/Powell_2011_02Thesis.pdf.

Powell, P. (2013). A Case Study of Two Sign Language Interpreters Working in Post-Secondary Education in New Zealand University of Canterbury. International Journal of Teaching and Learning in Higher Education 2013, Volume 25, Number 3, 297-304 http://www.isetl.org/ijtlhe/.

Priestley, M. (2003) Disability. A life Course Approach. Oxford: Polity Press.

Ramsey, C. (1997). Deaf Children in Public School. Washington, D.C., Gallaudet University Press.

Richard, D., & Graeme, B. (1992). More than Words. An Introduction to Communication. Clay Limited, England.

Robson, C. (1999). Real World Research: A research for social scientists and practitioner researchers. Oxford, Blackwell Publishers limited.

Rogers, J. (1993). The Inclusion Revolution. Bloomington: Phi Delta Kappa.

Russell, D., & Demko, R. (2006). The future starts with you: Accommodation and students with hearing loss. Paper presented at the PEPNet 2006 Biennial Conference: Roots & Wings, Louisville, Kentucky.

Sameshima, S. (1999) Deaf Students in Mainstream Universities and Polytechnics: Deaf Student Perspectives, Unpublished Masters Thesis, Victoria University of Wellington.

Saur, R.E. (1992). Resources for deaf students in the main- streamed classroom. In S. B. Foster & G. G. Walter (Eds.), Deaf students in postsecondary education (pp. 96-113). Lon- don: Routledge.

Schein, E.H. (1992). Organizational culture and leadership. San Francisco, CA: Jossey-Bass

Schmidt, M., & Cagran, B. (2008). Self-concept of students in inclusive Setting. International Journal of Special Education, 23(1), 8-17.

Schick, B., Williams, K., & Bolster, L. (1999). Skill Levels of Educational Interpreters working in the Public Schools. Journal of Deaf studies and Deaf Education, 4, 144– 155.

Schneider, M. (2006). Disability and the environment. In B. Watermeyer, S. L, T.

Seleskovitch, D. (1978). Interpreting for International Conferences. Washington, DC: Pen & Booth.

Skjørten, M. D. (1996): Lecture presented at a conference on Inclusive Education, Vilnius Lithuania, and 27 – 29 November, 1996.

Smith, S. (2004). Idea 2004: Individuals with Disabilities Education Improvement Act: A Parent Handbook for School age Children with Learning Disabilities. House.

Stokoe, W.C. (2001). Languages in Hand: Why Sign came before Speech. Washington, DC: Gallaudet University Press. Retrieved 1 December 2008 from http://www.librarykcc.hawaii.com

Thomas, G. (1997). Inclusive Schools for an Inclusive Society. British Journal of Special Education, 24 (3), 103-107

UN (1993). Standard Rules on the Equalization of Opportunities for Persons with Disabilities.http://www.un.org/documents/ga/res/48/a48r096.htm.Accessed 30/03/2011

United Nations 2006. Convention on the Rights of Persons with Disabilities. http://www.un.org/disabilities/documents/convention/convoptprot-e.pdf

UNESCO (2000). Dakar Frame work for Action. Paris: Author.

UNESCO (1994). Salamanca Statement on Principles, Policies and Practices in Special Needs Education Paris: UNESCO.

Urquhart, B. et al. (2009). Zambian sign language: A Beginners Guide Teachers Manual Unpublished. Lusaka: U.S. Peace Corps.

Vernon, M., & Andrews, J. F. (1990). The Psychology of Deafness: Understanding Deaf and Hard of Hearing people – (pg. 88 – 90). United States Longman Publishing group.

Wakumelo, N.M. (2009). Provision of Education for the Deaf in Zambia: The Situation and Challenges. Paper Presented at University of Zambia School of Education and the Directorate of Research and Graduate Studies Conference. August 2009.

Winston, E. A. (1994). An interpreted education: Inclusion or exclusion? In RC. Johnson & OP. Cohen (Eds.), Implications and complications for deaf students of the full inclusion movement (pp. 55–62). Gallaudet Research Institute Occasional Paper 94–2. Washington DC: Gallaudet University.

Winston, E.A. (1992). Mainstreaming interpreting: An analysis of the task. In LSwabey (Ed.), the Challenge of the 90's New Standards in Interpreter Education. Private Publication: Conference of Interpreter trainers.

WHO (2011). World Health Organization & World Bank. (2011). World Report on Disability. Malta: WHO press.

WHO (2012). Mortality and Burden of Diseases and Prevention of Blindness and Deafness: Geneva.

World Federation of the Deaf (1993). 'Scientific Commission on Sign Language'. Report on the Status of Sign Language. Helsinki, Finland: Miktor.

Yin, R. K. (2003). Case Study Research: Applied Social Research Methods series Sage Publications.

ZAFOD (2006), *Educating Persons with Disabilities.* Lusaka: Zambia.

Zambia National Association of the Deaf (2010). ZNAD brochure

APPENDICES

Appendix A: Interview guides for Students

Research Title: Accessibility of Sign Language Services to the Deaf in Tertiary Education Institutions: A Case of the University of Zambia and Zambia Institute of Special Education.

Name of a person Interviewed…….……

Gender ……. Age…….. Date of interview…… Time …….

Name of Institution ……..

1. What is your gender?
2. Your age? Below 18 [ ]; 19-25 [ ]; 26-35 [ ]; above 36 [ ].
3. Do you have a disability?
4. If yes, what disability type?
5. Do you have deaf parents?
6. What year are you in your study?
7. What Program of study are you pursuing?
8. What courses are you taking in your current program of study?
9. What was your preferred program in this institutions?
10. Do you know and use Sign Language?
11. If "Yes" how did you learn Sign Language?
12. What type of sign language do you use? (ZSL)(Signed)(Total Communication)
13. How often do you have a Sign Language Interpreter during lecture and tutorial classes?
14. How easily SLS available to the deaf students at your institution?
15. Do all the deaf students at the institution use the same Sign Language?
16. Do you have hearing friends who know Sign Language at your institution?
17. Do your lecturers know how to communicate in Sign Language?
18. What method do you use to communicate with your lecturer?
19. Do you have anything you would like to add on to what we have discussed?

Appendix B: Interview guides for Lecturers

Research Title: Accessibility of Sign Language Services to the Deaf in Tertiary Education Institutions: A Case of the University of Zambia and Zambia Institute of Special Education.

Name of a person Interviewed……

Gender …….. Date of interview…… Time ……

Name of Institution …….

1. What is your gender?
2. What is the name of your institution?
3. What is your qualification?
4. How many Years of experience as a lecturer at your institution?
5. Do you have deaf students attending in your course?
6. In your opinion, how effective is the role of sign language service in your institution?
7. How do you communicate with the deaf students in your lecture or tutorial class?
8. Do you have a sign language interpreter during your lecture or tutorial class?
9. In your own view, do you feel the institution takes adequate care of the services of the sign language interpreter?
10. What do you suggest for the long term solution to SLS sustainability?
11. Please explain some of the benefits of SLS to the deaf students your
12. Which areas do you consider of a great challenge to have Sign Language Interpreters in your institution?
13. How do you rate your classroom interaction with the deaf students in the presence of Sign Language Interpreter?
14. Do you have anything you would like to add on to what we have discussed?

Appendix C: Interview guides for Head of Department

Research Title: Accessibility of Sign Language Services to the Deaf in Tertiary Education Institutions: A Case of the University of Zambia and Zambia Institute of Special Education.

Name of a person Interviewed……

Gender …… Date of interview…… Time ……..

Name of Institution …….

1. What is your gender?
2. What is your position at this institute?
3. How long did you work in this position?
4. Does your institution have a policy on the following
   a. Admission of deaf students?
   b. Provision of sign language interpreters?
   c. Employment of sign language interpreters?
   d. Provision of other support services not listed above for persons with disabilities?
5. What types of employment arrangements are offered to sign language interpreters?
6. Could you highlight on the sources of resources to sustain SLS in terms of conditions of service and working conditions for sign language interpreting service?
   a. Bilateral development agencies
   b. Institute own resources
   c. Multilateral agencies
   d. Government
   e. Other means ……
7. What measures have been in place to ensure the sustainability of interpreting service in your institution?
8. In your opinion, what is the best way to sustain the sign language service in your institution?
9. What challenges do you face in providing SLS?
10. What measures have you taken to train SLI?

Appendix D: Interview guides for Sign Language Interpreters

Research Title: Accessibility of Sign Language Services to the Deaf in Tertiary Education Institutions: A Case of the University of Zambia and Zambia Institute of Special Education.

Name of a person Interviewed……

Gender …… Date of interview…… Time ……..

Name of Institution …….

1. What is your gender?
2. What is your age?
3. How long have you been interpreting in this institution?
4. Describe your educational background.
5. Can you explain the kind of training you have undergone as Sign Language interpreter?
6. Where did you get your training?
7. How long was the training?
8. What level did you reach in training as a Sign Language interpreter?
9. Do you think the training you received was adequate to enable you provide quality interpreting service?
10. On what employment arrangement are you appointed to provide Sign Language interpreting service at tertiary institutions? (Part time) (Full time)(Contract)
11. What is the lecturer's attitude to you as an interpreter?
12. Do you find classroom space suitable to provide proper sitting arrangement for Sign Language Interpreter and deaf students for whom you will be interpreting?
13. What other constraints or challenge do you face as interpreter?
14. Is there a possibility that you will be employed permanently as a Sign Language Interpreter?

Appendix E: Interview guides for Policy Makers

Research Title: Accessibility of Sign Language Services to the Deaf in Tertiary Education Institutions: A Case of the University of Zambia and Zambia Institute of Special Education.

Name of a person Interviewed……Code name……..……
Gender …….. Date of interview…… Time ……
Name of Institution …….

1. Could you describe your position in this organization?
2. What role does your Ministry plays to ensure various policies are in place to facilitate social participation of persons with disabilities particularly deaf student?
3. How do the same policies contribute to deaf students' participation in inclusive institutions such as UNZA?
4. Can you explain what you know about Sign Language interpreting in tertiary institution?
5. What benefits do you think students can obtain as a result of having interpreting facility in tertiary institutions?
6. Could you explain why it has been difficult to provide the Sign language interpreting service in tertiary institutions in Zambia from point of view of policies and laws in place?
7. Do you know of any local or national laws regarding access to sign language services to the deaf in tertiary education
8. Does your organization formulate policies specifically for addressing the needs of the deaf in SLS at tertiary education institutions?

Appendix F: Observation Check List for Sign Language Interpreters during Lecture and Tutorial time

Title Research: Accessibility of Sign Language Services to the Deaf in Tertiary Education Institutions: A Case of the University of Zambia and Zambia Institute of Special Education.

Gender…….

Qualification ……..….

Years of working experience……..…….

Date of observation …….

Duration……...

Characteristics to look for:

1. The sitting arrangement for the deaf students (is there a reserved seat for deaf students?
2. The style of the sitting arrangement? (Theater style, circle style, smi-circle style)
3. Is the seat arrangement provides a clear view of both the speaker and interpreter? (window at the back)
4. Is there proper lighting in the room where lecture or tutorial is conducted?
5. How is class management as far as providing SLI is concern?
6. Is there a spotlight or small lamp to direct light toward the interpreter during power point presentations?
7. Interpreters appearance (hair style, clothing)
8. Sign Language Interpreters management of noise pollution.
9. Working relations between lecturers and SL interpreters.

Appendix G: Informed Consent

Dear ……,

I am a student at the University of Zambia working on a Master of Education (Special Education Studies) degree. I am conducting a research study entitled Accessibility of Sign Language Services to the Deaf Students in Tertiary Education: A Case of the University of Zambia and Zambia Institute of Special Education. The purpose of my research study is to examine the accessibility of SLS by deaf students in tertiary institutions.

Your confidential, voluntary participation will involve an interview process that will be scheduled to last from 30 to 60 minutes. In this research, there are no foreseeable risks to you. The possible benefit of your participation is the added knowledge for educators to apply when implementing policy mandates. You can withdraw any time you feel like it. If you have any questions concerning the research study, please call me on ..... or email me at …… .The return of your signed letter indicates consent and approval. Sincerely,

Yohannes Getaneh