

CHAPTER ONE

INTRODUCTION

This chapter presents the background of the study on classroom communication and academic performance of learners with hearing impairments. It further presents the statement of the problem, purpose, objectives, research questions, significance, theoretical framework, limitations and delimitations of the study. It ends with operational definition of terms used in the study.

1.1 Background to the study

Determining classroom communication and academic performance of learners with hearing impairments was central to this study. As rightly noted by Ekwama (2003), classroom communication is one of the most important aspects to consider when discussing the successful teaching and learning of learners with hearing impairments. It is important to discuss classroom communication because it is the very aspect where the disability poses the greatest challenge for the learners and teachers. The result of such a challenge is persistent poor academic performance. Realising that to some extent classroom communication exists between teachers and learners, it became necessary to determine classroom communication on the academic performance of learners with hearing impairments.

Concerning the prevalence of persons with disabilities, the World Health Organization (WHO, 2005) estimates that approximately 600 million people (ten per cent in any country) in the world experience impairment of various kinds including hearing impairments. For the purpose of this study, the term “hearing impairment” is used as an umbrella term that refers to all degrees of hearing loss, from slight to profound. Concerning the population of learners with hearing impairments in Zambia, by 2010, there were 650 learners in grades 10-12. Details are shown in Table 1.

Table 1. Children with Special Educational Needs in Grades 10-12 by impairment and gender

	Male	Female	% (F)	Total	% OF Tot.	% Ch.
Hearing	325	325	50.0%	650	15.1%	3.8%
Intellectual	191	185	49.2%	376	8.8%	-57.0%
Other	132	254	65.8%	386	9.0%	-7.2%
Physical	202	217	51.8%	419	9.8%	-9.1%
Specific learning	383	329	46.2%	712	16.6%	-25.1%
Visual	647	1 107	63.1%	1 754	40.8%	-11.9%
Total	1 880	2 417	56.2%	4 297	100.0%	-19.2%

Source: Ministry of Education, Science, Vocational Training and Early Education; Planning Unit (2010)

Findings over the years (Mbewe 1983; Mbewe 1991; Kalabula 1993 and Katwishi 1995) have shown that learners with hearing impairments have consistently trailed behind their hearing counterparts in academic performance. While education of learners with hearing impairments in Zambia is not a recent development, it has not shown significant improvement on their academic performance as was expected. For instance, regional mock examination pass rate for learners with hearing impairments in Grades 10, 11 and 12 at Solwezi and Munali Secondary Schools from the year 2010 to 2012 ranged between 34% and 43%. (Ministry of Education, Science, Vocational Training and Early Education; Planning Unit, 2012). This performance is worrisome because it is too low.

In educational institutions, success is measured by academic performance or how well a learner meets the standard set out by the government and the institution itself. The emphasis on academic performance is made to identify, evaluate, track and encourage the progress of learners in schools. As rightly stated by World Education Services (2011), areas of achievement and failure in a learners academic life need to be evaluated

in order to foster improvement and make full use of the learning process. As a result, discussions of effective education for learners with hearing impairments have turned towards classroom communication and the experiences of these learners in the various types of classrooms and schools in which they are enrolled. However, not much is known about the classroom communication and academic performance of learners with hearing impairments in Zambia.

Education of learners with hearing impairments worldwide has been one of the most controversial topics. This is because it has been difficult to come up with an agreed upon communication technique that best suits learners with hearing impairments. Concerning classroom communication, Article 21 of the Salamanca Framework for Action (1994) states that

owing to the particular communication needs of learners with hearing impairments, their education may be more suitably provided in special schools or special classes and units in mainstream schools.

Classroom communication involves interactive communication, language and responses between learners and teachers (Marschark et al. 2006). This implies that classroom communication for learners with hearing impairments should comprise a special education teacher, media of communication such as sign language and learners with hearing impairments. Classroom communication may also encompass interaction between two or more learners.

A study carried out in Washington by Gallimore (1993) titled how to utilize American Sign Language as the language of instruction in the classroom found that it was difficult to find an appropriate classroom communication system that effectively provides access to curriculum content. Subsequently, there have been changes in search for a better teaching methodology from pure Oralism to Total communication. Despite the changes in teaching methodology, the question has remained unresolved as to which particular method best suits learners with hearing impairments. A number of studies have reported that learners with hearing impairments still finish school semi-illiterate. For instance, existing investigations (Mbewe and Serpell 1983; Ndulo and Mbewe 1983; Nduluma

1991; Ndurumo 1993; Okombo 1994 and Adoyo 2001) have pointed to the inappropriate language of instruction as the key issue, which must be strongly and urgently addressed.

Hearing impairment, like any other sensory impairment, could pose serious academic, communication and social problems. Boothroyd (1982) postulated that the sense of hearing plays a key role in the use and development of verbal language and communication. Similarly, Ainscow (2007) asserts that communication has to do with acquisition and abstraction of meaningful information processing and storing in short term and long term memory and retrieval of information. It includes language components of phonology, syntax, morphology, semantics and pragmatics.

It can be seen from the above analysis that classroom communication is a very important component in the teaching and learning process of all learners, with or without special educational needs. This is because classroom communication enables learners to understand the content of the lesson and also to communicate effectively with the teacher as well as their fellow peers. Booth and Ainscow (2002) assert that classroom instruction that produces positive results acknowledges the need for a liberal use of nonverbal cues, student involvement and team communication. For this reason, a study on classroom communication and the academic performance of learners with hearing impairments was necessary. Ekwama (2003:6) opined that

classroom communication is the most important issue to consider when discussing successful teaching and learning experiences with the learner with hearing impairment. This is because it is the very aspect where his or her disability poses the most challenge for him or her and his or her teacher.

However, there is an observable increasing gap in vocabulary growth, complex sentence comprehension and construction among learners with hearing impairments to the point of posing a challenge on their academic performance. For instance, learners with hearing impairments are observed to have limited vocabulary as compared to learners with normal hearing. This is because learners with hearing impairments enter school

with limited knowledge of vocabulary. The discrepancy broadens over time between learners with normal hearing who have rich knowledge of vocabulary and themselves.

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.

On the basis of this background, it remained unknown about classroom communication and academic performance of learners with hearing impairments in Zambia.

1.2 Statement of the problem

Despite the emphasis on classroom communication, the academic performance of learners with hearing impairments continues to be below the average pass mark of forty percent. The study, therefore, sought to determine classroom communication and academic performance of learners with hearing impairments.

1.3 Purpose of the study

The purpose of the study was to determine classroom communication and academic performance of learners with hearing impairments.

1.4 Objectives

The objectives of the study were:

1. To identify classroom communication techniques used in classrooms for learners with hearing impairments.
2. To establish whether there was adequate learning materials for learners with hearing impairments.

3. To establish whether the classroom environment was supportive of effective classroom communication for learners with hearing impairments.
4. To determine how classroom communication affected the academic performance of learners with hearing impairments.

1.5 Research questions

The following research questions were used to guide the study:

1. What communication techniques are used in the classroom for learners with hearing impairments?
2. How adequate are learning materials for learners with hearing impairments?
3. How does the classroom environment support effective classroom communication for learners with hearing impairments?
4. How does classroom communication affect academic performance of learners with hearing impairments?

1.6 Significance of the study

At the time when there is so much emphasis on classroom communication by the Ministry of Education, Science, Vocational Training and Early Education (MoESVTEE, 2002), a study of this nature is necessary. It was therefore hoped that its findings may contribute to knowledge of classroom communication techniques that would enhance academic performance of learners with hearing impairments.

It is also hoped that the findings may enhance classroom communication between teachers and learners with hearing impairments. In addition, the findings may motivate policy makers and curriculum planners to place due emphasis in the curriculum on the importance of classroom communication towards the improvement of the academic performance of learners with hearing impairments.

Last but not least, the findings of the study may stimulate further research in finding means and ways of improving academic performance of learners with hearing impairments using classroom communication.

1.7 Limitations of the study

One of the limiting factors was that the learners with hearing impairments were not formerly assessed to ascertain the degree of their hearing losses. As a result, the communication needs of the individual learners were not conclusively investigated.

Despite these limitations, the findings of the study were still consistent with the reviewed literature. In addition, the sample was representative enough such that the findings of the study may still be generalized.

1.8 Delimitations of the study

The study was conducted at Solwezi and Munali Secondary Schools in North western and Lusaka provinces. The schools were chosen because they were both residential schools for learners with hearing impairments.

1.9 Theoretical framework

This study was guided by Holcomb's (1968) Total Communication (TC) theory. Total Communication theory incorporates a number of different techniques of communication. For instance, learners with hearing impairments are exposed to sign language, speech, lip reading, pictures, mime, and writing. The philosophy of total communication is that the technique should be fitted to the learner, instead of the other way round. For instance learners with hearing impairments have individual needs such as limited sign language vocabulary.

One of the observations in the Total Communication theory is that learners with hearing impairments in traditional learning environments often feel left out of classroom communication. Because of the lag that exists between the delivery of the information and the signing of the content by the teacher, learners with hearing impairments also report difficulty responding to the teacher's questions or asking a timely question. Total Communication, therefore, assisted learners with hearing impairments by giving them a number of options for communication. This in turn helped the learners express themselves. Moreover, total communication helped the teacher to engage all possible techniques of communication to enhance the learning experience.

Another contribution by the theory to the study is that it contributed to the understanding that techniques of communication needed to be adjusted based on the situation. For instance, sometimes signing is the right method to use, other times it may be speech and in other situations, writing may be the best technique to use.

In addition, some teachers favored total communication as a catch-all that ensured that a learner with hearing impairments had access to some means of communication (speaking as needed, or signing as needed). For example, a learner with hearing impairment who could not communicate well orally got additional support of sign language, and vice versa. Using Total Communication reduced the pressure on teachers to choose one technique over another.

Therefore, Total Communication guided this study in determining classroom communication and academic performance of learners with hearing impairments.

1.10 Operational definition of terms

For the purpose of this study, key terms are used as follows:

Academic performance: The outcome of education; the extent to which a student, teacher or institution has achieved their educational goals. Academic performance is commonly measured by examinations or continuous assessment.

Classroom communication: The interaction inside the formal classroom that is initiated by the learners and/or the teacher

Hearing impairment: A generic term used to identify anyone with a hearing loss regardless of the degree of impairment.

1.11 Organization of the study

The study is organized into six chapters. Chapter one, which is the introduction presents the background to the study, statement of the problem, purpose of the study, objectives, research questions raised, significance of the study, limitation, delimitations and definitions of terms used in the study.

Chapter two highlights the relevant related literature reviewed in line with the objectives which were to: identify classroom communication techniques used in classrooms for learners with hearing impairments, establish whether there was adequate learning materials for learners with hearing impairments, establish how the classroom environment was supportive of effective classroom communication for learners with hearing impairments and to determine how classroom communication affected the academic performance of learners with hearing impairments.

Chapter Three illuminates the methodology used in the study. It covers the research design, population, sample and sampling technique used, procedure used for gathering information on and methods for data analysis.

Chapter four presents the results of the study in line with the objectives which were to: identify classroom communication techniques used in classrooms for learners with hearing impairments, establish whether there was adequate learning materials for learners with hearing impairments, establish whether the classroom environment was supportive of effective classroom communication for learners with hearing impairments and to determine how classroom communication affected the academic performance of learners with hearing impairments.

Chapter five discusses the major findings of the study with reference to the related literature. Chapter six gives the summary of the research findings, conclusion, recommendations and suggestions for future research.

CHAPTER TWO

LITERATURE REVIEW

This chapter reviewed literature related to classroom communication and the academic performance of learners with hearing impairments. There are many written literature on communication as an effective tool for learners' academic performance. In Zambia, many learners with hearing impairments were not formerly assessed to ascertain their degree of hearing loss. The teachers as well as learners knew very little about the communication needs of the individual learners. As a result, the communication needs of the learners in one way or the other affected their academic performance.

Since the study was about classroom communication and the academic performance of learners with hearing impairments, the literature reviewed matched the objectives and presented under the following themes: classroom communication techniques used in classrooms for learners with hearing impairments, adequacy of learning materials for learners with hearing impairments, supportiveness of classroom environment for effective classroom communication for learners with hearing impairments and how classroom communication affected the academic performance of learners with hearing impairments. It ends with the summary.

2.1 Classroom communication techniques used in classrooms for learners with hearing impairments

There is no universal definition of hearing impairment as both the cause of the loss and its degree can differ from person to person. However, a degree of loss a person has depends on how loud a sound measured in decibels a person can hear (National Institute on Deafness and other Communication Disorders Hearing Aids, 2002 Feb. NIH Pub. No. 99-4340). Kentucky Office for the American with Disability Act (1999) defines hearing impairment as a hearing loss that prevented a person from totally receiving sounds through the ear. If the loss was mild, the person had difficulty hearing faint or distant speech. A person with this degree of hearing used a hearing aid to amplify

sounds. If the hearing loss was severe, the person was not able to distinguish any sound.

A study by Barefoot (2011) carried out In New York on the importance of classroom communication found that the communication of learners with hearing impairments can be diverse and included language, modality, cultural identity, gender, emotional and physical influences.

Buscemi (1996) in a study carried out in New York reported that classroom communication was about using a suitable language to convey and decode ideas or meanings, to exchange views, explain processes or demonstrate skills.

Barefoot (2011) also found that learners with hearing impairments value learning with their communication strengths such as access to visual information, opportunity to use their residual hearing and use of their strongest language. Similarly, Heward (2002) reported that learners with hearing impairments must have a firm concept of and foundation in language so they derived benefit from educational instruction. The greatest disadvantage which hearing loss places on individuals was the deprivation of communication opportunities.

Moore (1996) in a study carried out in Boston reported that there were two basic modes of communication that were used for educating learners with hearing impairments; the Oral method and Total communication. There were numerous techniques in classroom communication that were used in educating learners with hearing impairments and these included verbal, nonverbal and written communication.

Verbal communication techniques

A report carried out by Ademokoya (1996) in Nigeria on Speech communication: Development and disorders found that the very communication mode most debated on was speech. Speech was the most conventional and most used form of communication in any human settlement.

Another study carried out in Nigeria by Ayodele (1988) found that learning was best conducted via spoken language. Similarly, Bakare (1988) in Nigeria also found that this

was because speech was the most conventional medium of communication for all humans.

Mba (1995) in a study carried out in Nigeria reported that much of learning and information transmission were done orally. Ademokoya (1996) in a study titled *Speech communication: Development and Disorders* carried out in Nigeria found that even when speaking and signing simultaneously as was often the practice while engaging total communication (speech and signs) to teach learners with hearing impairments, more things were said than signed.

Findings by Davis & Silverman (1998) in a research titled *hearing and deafness* carried out in New York showed that oral language was used to teach learners with hearing impairments because it was universal agreement among educators of learning impairments that every child should be given an opportunity to communicate by speech. Thus when learners with hearing impairments were taught oral language, they were given chance of using their residual hearing and this enabled them to understand speech and use it in their communication.

Elliott, Kratochwill and Travers, (2000) in a study titled *Educational Psychology: Effective Teaching and Learning* carried out in the United States of America found that various school related factors such as behaviour expatiation, interpersonal relations (between learners and learners or learners and teachers) and quality delivery of teaching characterized by effective questioning and individualized feedback were best fostered by oral classroom communication.

A study by Okeke (2003) carried out in Ghana highlighted that undoubtedly, educators were aware of the unrivaled importance of oral language in teaching/learning processes. Similarly, Ekwama (2003) who carried out a study in Nigeria reported that oral communication facilitated meaningful teacher-learner interactions than any other form of communication. This made learning more readily mediated than writing, signing, gesticulating, pantomiming or whatever medium.

Nonverbal communication techniques

McCroskey (1998) in a study carried out in the United States of America reported that a substantial portion of our communication was nonverbal. Nonverbal communication included an exchange of information without the exchange of spoken words. Often, information is communicated in nonverbal ways using a group of different nonverbal communication techniques. For instance, we might combine a smile with loose arms and a blinking eye gaze to indicate approval. Other nonverbal communication techniques included; lip reading, facial expression, gestures, body language and posture.

Nicholas et al (1994) carried out a study titled development of communicative function in young learners with hearing impairments and normally hearing children in London. Results showed that learners with hearing impairments relied more on nonverbal labeling techniques such as body language and gestures than would be expected in learners with normal hearing.

One of the nonverbal classroom communication techniques was lip reading. Lip reading was the ability to read lip patterns. It was difficult to learn, but many learners naturally tried to lip-read when they were communicating. A study carried out in Britain by Davis and Wood (1992) reported that it was very difficult for most learners with hearing impairments to rely solely on lip reading to communicate, as they could only pick up a small percentage of what was being said. Therefore, lip reading was usually used alongside other communication techniques. It was noted that lip reading involved utilizing clues from the topic of conversation, facial expression, the eyes, the rhythm of speech and body language.

It must be noted that learners with moderate hearing usually did not understand what the teacher said without using a hearing aid. When they were not using hearing aids, the learner relied on lip reading. However, some learners could only lip-read for a certain period of time. A study carried out in Boston by Moores (1996) found that learners who only used lip reading for a long period of time lagged behind in their comprehension, had limited vocabulary, poor pronunciation of words and speech sounds, and felt fatigued towards the end of a class and lost concentration. Not only did such learners

misinterpret verbal speech but they also frequently misinterpreted written lessons and reading material.

A study carried out by the University of Cambridge (2003) titled teaching learners with Hearing Impairments in the United Kingdom highlighted that to some extent many learners with hearing impairments relied on lip reading despite being aware that only about 30% of words could be lip read clearly. In addition, not all people with a hearing impairments could lip read well.

The other nonverbal classroom communication technique was facial expressions. A study carried out in New Jersey by Galvin (1990) found that facial expressions were responsible for a huge proportion of nonverbal communication. For instance, much information was conveyed with a smile or a frown. It was noted that facial expressions conveyed a message to learners with hearing impairments. This was because as the learners lip read or observed signs, the facial expressions told the context in which the message was delivered. In addition, facial expressions for happiness, sadness, anger and fear were similar throughout the world.

Another nonverbal classroom communication technique was gestures. Gestures include deliberate movements and signals. A study carried out by Moores (1996) in Boston found that these were an important way to communicate meaning without words to learners with hearing impairments. Common gestures included waving, pointing, and using fingers. For instance, when the teacher points his fingers in a certain direction, learners with hearing impairments quickly paid attention to the direction the teacher was pointing.

Other nonverbal classroom communication techniques include finger spelling and sign language. A study carried out in New York by Kaupinen (1988) defined sign language as a visual language expressed by hands, arms and eye movement. It is a language for people with hearing impairment. Sign language was the only language that a person with hearing impairment could acquire from others without special education in the same way a person without a hearing impairment spoke spoken language.

Ewing (1987) asserts that sign language could be used as a technique to improve pre-linguistic skills such as eye contact, attention control, imitative, and social behaviour. Based on the World Federation of the Deaf (WFD) (1993) definition, sign language consisted of visual-gestural language which involved the use of hands, eyes, face, mouth, head and body.

A study carried out in the United States of America by Riekehof (1990) reported that finger spelling was used in combination with the language of signs for proper nouns, names, and addresses, and for words that had no sign.

Gulliford (1971) in a study carried out in London reported that sign language was a normal communication mode and it was independent of oral language. It was transmitted and received through hands. He further found that sign language was involved with oral language and it was influenced by oral language whereas oral language was not influenced by sign language.

Though sign language became the accepted language of communication for learners with hearing impairment, Okeke (2003), in a study titled communication practices in special education: oral, manual and others found that this choice was more of necessity than of preference. The incontestable superiority of speech over signs had been confirmed as far back as 1880 at the International Conference on Deafness held in Milan. A study carried out by Heward (2002) also found that sign language was practiced in many schools for learners with hearing impairments in United States.

A study carried out in London by Minific (1973) reported that sign language was non-verbal form of communication, it was also non-speech and therefore, it was not very effective in educational circles. Also in support was Abang (1995) in his book titled Handbook of Special Education for Educators in Developing Countries carried out in Nigeria recommended speech as the best form of communication used in schools for learners with hearing impairments.

The last other nonverbal classroom communication technique was eye gaze. Looking, staring and blinking were important nonverbal behaviors. A study carried out in the United States of America by Luckner (1988) reported that when people encountered

people or things that they liked, the rate of blinking increased and pupils dilated. This entailed that looking at another person indicated a range of emotions, including hostility, interest and attraction. For learners with hearing impairment, eye gaze was the fastest way of communicating certain actions such as warning for inappropriate classroom behavior.

Writing techniques

A report carried out in Nigeria by Ademokoya (2008) in a study titled classroom communication and placement of learners with hearing impairment in an inclusive class found that it was important to bear in mind that learners with hearing impairments had varying degrees of understanding of English. Some learners could still be acquiring a full language base and errors occurred in their written expression. Writing played a vital role in classroom communication. This was because learners with hearing impairments who were not very proficient in sign language benefited from written communication. This was especially observed in learners who acquired hearing impairments at a mature age.

A study carried out in Washington by Marschark et al (2006) reported that although most learners with normal hearing relied on speech to communicate with others, learners with hearing impairments used a range of communication techniques. For example, students with hearing impairments used some form of signed communication, lip reading, or assistive technologies, such as hearing aids, cochlear implants (CI) and communication boards.

Findings by Malunga (2007) in a study carried out in Zambia showed that children naturally try to learn a language that enabled them to be understood. The communication technique used by learners with hearing impairments was dependant on a number of factors, such as the level of hearing loss and which techniques they were most comfortable with.

2.2 Adequacy of learning materials for classroom communication

A study carried out in New York by Marschark et al (2002) titled Educating learners with hearing impairments: Research into practice reported that learners with hearing impairments and learners with normal hearing had different backgrounds, experiences, and communication histories. Therefore, the framework of learning that learners with hearing impairments had differed from that of learners with normal hearing.

Research carried out by Ainscow (2007) in New York highlighted that without communication there would be no education, no matter how qualified a teacher and relevant the adaptation of content, methods and organization may be. Often, opinions about the methods used in programs for learners with hearing impairments were based on best practices or approaches to instruction.

Lytle & Rovins (1995) in a study carried out in the United States of America titled reforming deaf education: A paradigm shift from how to teach to what to teach reported that it was very important that the learning materials that learners with hearing impairments used were adapted to fit their communication and educational needs. In the past, educators of learners with hearing impairments focused primarily on language and communication variables at the expense of quality of curriculum.

A study carried out in the United Kingdom by Stubbs (2002) titled inclusive education: where there are few resources found that the availability of adequate textbooks and other instructional materials had been shown to be one of the most positive and consistent determinants of teachers' willingness to teach as well as pupils' learning achievements.

A study carried out in Texas by Allen (1986) found that regardless of whether spoken English, simultaneous communication or American Sign Language was used for communication, the learner learned English for reading and writing. Similarly, Schimer and Woolsey (1997) found that when teachers spent instructional time on reading comprehension, strategies that encouraged learners with hearing impairments to think deeply about what they read, they became proficient and enthusiastic readers.

Ikonta & Maduekwe (2005) in a study of Learners with Hearing Impairments (In English Language) In a Conventional Secondary School in Lagos State, Nigeria found that the presentation of English language demanded a lot of oral practice through dialogue, memorization, pattern drills, substitution tables and many others.

A study carried out in London by Hutchcroft (1981) revealed that in the presence of hearing impairment, language symbols were not perceived and learned, yet language was a decisive factor in the development of one's concept and in the release of one's potential intelligence. A study carried out in California by Norris (1975) also highlighted that grammar and structure of English often did not follow logical rules, and persons with pre-lingual hearing loss exerted a great deal of effort to read and write with acceptable form and meaning. He continued that many learners with hearing impairments tended to write sentences that are short, incomplete, or improperly arranged. They omitted endings of words such as the plural s, -ed or ing. They also had difficulty in differentiating questions from statements.

Findings by Turnbull, Shank and Leal (1999) in a study carried out in New Jersey revealed that instructional strategies for learners with hearing impairments were particularly effective when they emphasized experiential learning, built on the learner's current knowledge and skills, required them to interact with peers, capitalized on the visual medium and reduced environmental distraction.

A study carried out in London by Hutchcroft (1981) in a study titled making language work found that learners with hearing impairment had the same cognitive abilities to process written language. When they read, they used the same types of knowledge and skills as learners with normal hearing, but some of their knowledge skills were less well-developed. Because of diminished exposure to incidental information, they often had incompetent background knowledge, yet comprehension depended on how much the learner already knew about the topic. In the presence of hearing impairment, language symbols were not perceived and learned, yet language, was a decisive factor in the development of one's concept and in the release of one's potential intelligence.

For many learners with hearing impairments, reading was a difficult task to accomplish. Andrew and Manson (1991) said that some of the reasons why reading as difficult for

learners with hearing impairments was that learners with hearing impairments lacked background knowledge of prior experience about many topics in commercial text. They did not have a communication system until the age of two or three when the hearing impairments were diagnosed; hence poor linguistic skills of learners with hearing impairments.

Andrew and Manson (1991) also found that few children with hearing impairments ever achieved fluency in reading or writing despite years of schooling'. Blackhurst and Berdine (1981) in a study carried out in Boston reported that learners with hearing impairments had a smaller reading vocabulary than their normal hearing counterparts did.

2.3 Supportiveness of classroom environment for effective classroom communication

The new International Classification of Functioning and Disability (ICF) developed by the World Health Organization (WHO) (2001) classify disability in two dimensions: functioning and disability (including body functions/structures and activities/participation in society), and contextual factors (environmental and personal).

Peters (2004) in a study titled 'inclusive education: an Education For All strategy for all children' revealed that there was a growing realization that, for the majority of learner's, the environment played a significant role in disabling them.

Adekemoyo (2008) in a study titled classroom communication and placement of the learners with hearing impairments in an inclusive class carried out in Nigeria found that to support improved outcomes of learners with hearing impairments, it was important that their direct experiences in the classroom were understood. The classroom environment and activities were what learners experienced directly and were the mechanism through which educational interventions were most likely to produce desired improvements in learner performance.

A study carried out in Zambia by Malunga (2007) titled an investigation on the use of sign language and oral language by regular teachers teaching learners with hearing

impairments showed that in relation to the learning environment, the best possible conditions were a quiet place and good lightening. This allowed learners with hearing impairments to concentrate and follow what was being lip-read. Lip-reading was used in line with other communication techniques. This technique was most effective in cases of mild to moderate hearing loss.

A study by Liwakala (2003) carried out in Mpika, Zambia reported that learners with hearing impairments were visual learners. As a result an attractive classroom with talking walls such as interesting notice boards and posters around the room assisted the learner to learn. Visual teaching aids such as pictures, diagrams and word maps also assisted learners with hearing impairments. In relation to seating arrangement, Liwakala (2003) found that it was very cardinal that learners with hearing impairments sat on chairs so that they could see both the teacher and their peers as much as possible. This was attributed to the fact that the learners were able to see the various signs, lip read and interpret body language as they were in full view of all participants in the classroom.

Findings by Livingston (1997) in a study carried out in the United States of America showed that if the classroom could not be organized into a semicircle, learners with hearing impairments could sit in the second or third row so they had a comfortable view of the teacher. Clearly, any seating arrangement should not isolate the learner.

In addition, Ekwama (2003) in a study carried out in Nigeria found that in order to accommodate learners with hearing impairments who used hearing aids, it was vital to minimize noise. If there was noise from outside, doors needed to be shut and in certain instances, windows were shut. These measures were put in place in order reduce background noise. It was highlighted that background noise, reverberation and distance from the speaker were real issues for learners with hearing impairments, even those with mild or unilateral hearing losses who were able to hear in the classroom. Background noise and reverberation were minimized by placing carpets on the floor. It was also vital for to make sure that windows had some covering. This included noises such as those made in woodwork and metal work workshops, other machines found in the school and noise outside the classroom or in the corridor.

A study carried out in New York by Barefoot (2003) highlighted that the challenge of classroom communication bordered on creating a classroom environment where communication issues were openly recognized and managed in a way that promoted learning.

2.4 How classroom communication affects the academic performance of learners with hearing impairments

A study carried out in London by Curzon (1991) found that classroom communication was needful for transmitting information and imparting information or knowledge. The communication process was vital to effective teaching and learning within a classroom environment. Classroom instruction that produced positive results acknowledged the need for a liberal use of nonverbal cues, learner involvement and team communication. In support of Curzon (1991), Luckner and Muir (2001) in a study carried out in the United States of America pointed out that a learner's performance was usually defined by a learner's success in an academic discipline, an exhibited level of competency on some type of standardized test. Additional identifiers of learner performance included organizational participation, leadership activities, and good behaviour or conduct.

Hearing contributed greatly to understanding especially in a world where verbal communication dominates. Essel (1996) in a study carried out in Canada found that hearing stimulated thinking, thinking was an exercise that concerned the use of the brain and the brain developed in quality as enough stimulation is given. Avoke (1997) in a study carried out in Ghana also revealed that those who did not hear lived in silence; in isolation from the world of sound and that sound was what guided us socially and intellectually.

A study by Educational Quality Improvement Program (EQUIP3, 2006) titled Building human capacity among at risk youth with Hearing Impairment through academic support targeted at persons with hearing impairments in Kenya, Ghana, Tanzania, Zambia, Uganda, Malawi, Namibia, Democratic Republic of Congo revealed that in developing nations, most teachers working in schools for learners with hearing impairments were hearing people who received traditional teacher training, but did not

receive any specialization training in sign language or visual teaching techniques that were critical for visual learners. In addition, they were not trained in facilitating language, social, and cognitive development in learners with hearing impairments. Since sign language was rarely used to communicate between teachers and learners, learners with hearing impairments could not understand their lessons, and found it very difficult to learn. Most teachers of learners with hearing impairments resorted to writing on the board and pointing as their primary means of communication.

A study by Marschark et al (2006) carried out in New York revealed that regardless of teaching pedagogy, philosophy, or classroom management style, effective communication was fundamental to the instructional process. Academic development, therefore, was the demonstration of learning of subject content and process. Consequently, while communication access was extremely important to the overall successful education of learners with hearing impairments, no one communication technique should be at the forefront of academic performance.

Educational Quality Improvement Program (EQUIP 3, 2006) further reported that in developing nations, ninety per cent (90%) of learners with hearing impairments were born into hearing families where there was no exposure to sign language or to the existing culture of hearing impairments. These learners with hearing impairments were typically deprived of the communication skills they needed for social development, incidental learning, academic pursuits, and gainful employment.

A study carried out in Zambia by Malunga (2007) found that in Zambia, a lot of learners were hardly identified that they had hearing impairments in class. Basically the teachers did not have any knowledge on hearing impairment and even on the knowledge of assistive devices which helped these learners to hear. These learners were subjected to been called dull because of their poor performance in class. Regular teachers did not have the sign language skills or oral language skills necessary to teach learners with hearing impairments.

A study carried out in the United States of America by Reed (2009) on oralism, total communication and American Sign Language revealed a shared characteristic of learner

diversity in academic, cognitive, and communication needs influenced the design, development, and implementation of a consistent school-wide writing literacy curriculum. Hurt et al (1978) in a study carried out in Britain also found that teachers accomplished a number of things when they reduced the distance between themselves and their learners. At the very minimum, teachers thwarted the possibility of interpersonal needs interfering with the satisfaction of academic needs, improvement of communication, and promotion of interpersonal solidarity. Such that, when classroom communication was effective, the academic performance of learners improved.

Barefoot (2003) in a study carried out in New York further 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.

A research conducted by Savage, Savage, Evans, and Potter (1986) in the United States of America titled Language and reading development in learners with Hearing Impairment - intelligence, learning and communication factors found that academic problems were primarily a result of poor communication between learners with hearing impairments and the teacher. They summarized learner's rates of reception and comprehension of materials using oral-only (lip reading), mainly-oral (lip reading and finger spelling), and simultaneous communication (lip reading, finger spelling, and signing). Results of the study revealed that overall scores did not reflect variation in sub scores at the single word, sentence, or syntax levels. The authors described the differences as illustrating how the change in communication technique affected rates of information reception by learners with hearing impairments. Overall, the oral-only approach resulted in the lowest level of comprehension by learners with hearing impairments (46% of all utterances). The mainly-oral method of lip reading and finger spelling showed significantly higher rates of comprehension (65% of the language input).

A study carried out in Britain by Luckner & Muir (2001) found that learners with hearing impairments performed poorer in reading and mathematics than learners with

normal hearing. This implied that if teachers did not have any knowledge of sign and oral language, the performance of these learners was below average all the time.

Savage et al. (1986) also found that sign language helped learners dramatically: comprehension increased to over 86% using the simultaneous communication method. It appeared important, therefore, to augment teacher speech with sign language. A study carried out in Europe by Schlesinger (1983) suggested that the most important thing to remember about learners with hearing impairment is that most of them possessed normal intelligence. Although learners with hearing impairments had intellectual problems, most did not have low intelligence nor did they function cognitively below normal abilities. It was the impairment that made them seem unintelligent.

Nicholas et al (1994) also reported that although delayed in other areas of language, learners with hearing impairments had communicative skills such as making a comment, request, or acknowledgment. These communicative skills matched those learners with normal their hearing.

A study carried out in the United States of America by Hyde and Power (1992) found that simultaneous communication was beneficial for learners with hearing impairments. For learners with profound hearing loss, techniques of using combinations of lip reading, audition, and finger spelling were all inferior to techniques that involved signing. For those with severe hearing loss, however, the superiority of conditions with signs was less clear. Even so, results from techniques of audition alone were poorer than those with speech and finger spelling or signs combined.

A Special Topic Report from the Special Education Elementary Longitudinal Study carried out in the United States of America by Marschark et al (2006) titled optimizing academic performance of learners with hearing impairments: Access, opportunities, and outcomes revealed that effective communication was critical for both academic success and positive social interactions for all learners. For learners with normal hearing, hearing and speech were the primary mechanisms used for communicating with and understanding others. On the other hand, because hearing loss related directly and indirectly to these two functions, it affected a learner's ability to function in these areas.

Further, depending on the level of loss, learners with hearing impairments used fundamentally different techniques of communication than learners with normal hearing.

A study carried out by Moores (1987) revealed that if a learner had post-lingual hearing impairment or had a mild to moderate hearing impairment or got very early amplification and exposure to a great deal of auditory training, the learner developed a good language ability. On the other hand if the learner had pre-lingual hearing impairment and was also discovered at a later stage then again the chances of language development, in the spoken and written form were considerably reduced.

Musselman, et al (1988) found that language delays generally led to poor academic performance and difficulties in classroom communication. Essel (1996) has this to say:

“Hearing impairment has been the cause of poor classroom performance, poor social interaction, and denial of inheritance, rights and social status. It attracts ridicule from others; it has also been the cause of break in marriages, loss of jobs and created social isolation, language acquisition delay in some cases, complete absence of speech and language, it has been directly associated with dumbness even though dumbness can exist without hearing impairment and hearing impairment can exist without dumbness”(p.18).

A study carried out in New York by Hunt & Marshall (1999) were of the view that the impact of hearing impairment on a person’s ability to acquire naturally the spoken language of his or her community was often substantial. Those communication difficulties adversely influenced academic performance, social and emotional development and interaction with others.

A study carried out in New Jersey by Hoemann & Briga (1981) found that the problems that learners with hearing impairments often experienced in education and adjustment were largely attributed to a bad fit between their perceptual abilities and the demands of spoken and written English.

A study carried out in the United States of America by Paul and Jackson (1993) reported that one of the most robust findings was an inverse relationship between hearing impairment and performance, the more severe the impairment, the lower the performance.

2.5 Summary

The general conclusion that was drawn from the reviewed literature was that when individual learners' classroom communication needs were met, teacher to learner communication improved and the academic performance also improved. Analysis of the literature showed that a study by EQUIP 3 (2006) focused on capacity building of learners with hearing impairments and that of Malunga (2007) identified learners and teachers knowledge of hearing impairment. None of these studies assessed how classroom communication affected the academic performance of learners with hearing impairments in Zambia. This gap motivated the researcher to conduct a study which sought to investigate the how classroom communication affected the academic performance of learners with hearing impairments. The findings on classroom communication and academic performance of learners with hearing impairments will add to the body of knowledge.

CHAPTER THREE

METHODOLOGY

The purpose of this study was to investigate classroom communication and the academic performance of learners with hearing impairments. This chapter presents the research method, sampling procedure, data gathering technique, data analysis procedure, ethical considerations and the limitations of the research.

3.1 Research design

A case study research design was used. This design was chosen because the study intended to investigate classroom communication and academic performance of learners with hearing impairments in detail. Trochim (2006) highlighted that a case study seeks to describe a unit in detail, in context and holistically. This entailed that the phenomena was studied as a whole and educational data was organized. McMillan and Schumacher (1993) also asserted that qualitative research typically uses a case study design.

Cohen and Manion (1994) argued that when using a case study, the researcher typically observed the characteristics of an individual unit – a child, a clique, a class, a school or a community. Since this study sought to determine classroom communication and the academic performance of learners with hearing impairments, a case study design was most appropriate.

3.2 Population of the study

According to Sampson (2012), the population is the group of individuals to which the findings, discussion of the findings, and the implications of the research is generalized. The population of the study consisted of all learners with hearing impairments. It also included all members of staff at schools for learners with hearing impairments as well as Special Education Standards Officers.

3.3 Sample of the study

Gall et al. (1996) defined a sample as a selection from the population that the researcher wants to study. In qualitative research, determining sample size was entirely a matter of judgment; there were no set of rules. To this effect, Gall et al. (1996) suggested that, in-depth information from a small number of people could possibly be very valuable, especially if the cases were information-rich.

The total sample size consisted of 100 respondents. The sample size consisted of eighty (80) learners with hearing impairments, fourteen (14) teachers, two (2) Heads of Department and two (2) Head teachers. In addition, 2 Special Education Standards Officer were also part of the study sample. The Heads of Department, Head teachers and Special Education Standards Officers were chosen because they were the only ones in charge of supervising classroom learning activities. Table 2 shows the distribution of the study sample.

Table 2: Distribution of respondents

Province	School	Learners with hearing impairments	Teachers	HoD	Head teachers	SESO	Total
North Western	Solwezi Secondary School	40	7	1	1	1	50
Lusaka	Munali Secondary School	40	7	1	1	1	50
Total		80	14	2	2	2	100

The study sites were in North Western and Lusaka provinces respectively. In each of study site forty (40) respondents were learners with hearing impairments, seven (7)

teachers, one (1) Head of Department and one (1) Head teacher. In addition, a Special Education Standards Officer was also part of the study sample. The learners with hearing impairments were chosen because they had characteristics that were representative of the principal target group. The two schools were selected because they were the only residential schools for learners with hearing impairments.

3.4 Sampling procedure

Sampling referred to the method used to select a given number of people or things from a population (Mertens 1998). In addition, Gall et al. (2003) pointed out that it was only when a target population had been identified that a sampling procedure could be used. Simple random sampling technique was used to select learners with hearing impairments and teachers. This technique was found to be suitable because it gave desired representation of learners with hearing impairments.

Purposive sampling procedure was used to select the Heads of Department, Head teachers and Special Education Standards Officers. This procedure was used because these elements were the only ones with critical information on classroom communication practices and academic performance of learners with hearing impairments.

3.5 Instruments and procedure for data collection

The methodological instruments used for gathering information for this study were questionnaires, interviews and observation checklists.

Questionnaires

Questionnaires were prepared and administered to learners with hearing impairments. Questionnaires were chosen for learners with hearing impairments because they enabled the researcher to use the same question items to all respondents.

Once the respondents were selected and time and venue was allocated to the researcher, questionnaires were administered. The researcher took the role of facilitator by explaining the questions so that the respondents could follow through as they answered.

Upon completion of the questionnaires, the researcher scanned the questionnaires in order to ascertain which respondents had difficulty writing and answering the questions. Out of the 80 respondents, 12 (15%) had difficulty answering. This could be observed from the illegible handwriting and gibberish writing that did not make sense. To correct the situation, the researcher had a one on one with the 12 respondents by signing the question items to the respondent and indicating and/or writing the responses.

Interview schedules

On the other hand, teachers, Heads of Department, Head teachers and Special Education Standards Officers were interviewed. The interview guide allowed the researcher to make follow up questions where the questionnaire could not.

Avoke (2005) highlighted that interviews were an important aspect of qualitative studies. They were a way of verbally interacting with participants or respondents in conducting research. Interviews were also described as a form of conversation between two people. In terms of structure, they could be fully structured, semi-structured or conversational or unstructured. He continued that interviews could also be in-depth as in the case of ethnographic study, and specific strategies of interviewing which could involve the use of telephone, face to face or one-on-one or focus groups.

For this study, one-on-one interview method was employed. The researcher asked questions and recorded answers from the ideal for respondents in the study one at a time. This enabled the respondents not to be hesitant to speak and enabled a comfortable environment in which the respondents could share ideas comfortably. The interviews took thirty (30) to forty five (45) minutes and nothing more.

The researcher used semi structured interview questions with the teachers, Heads of Department, Head teachers and Special Education Standards Officers of the target group since they were available to be interviewed. According to Bell (1993) semi-structured interviews allowed the respondents considerable degree of latitude. Although certain questions were asked, the respondents were given freedom to talk about the topic and give their views in their own time, unlike structured interviews where the respondent was limited to a range of responses previously developed by the researcher.

Observational checklist

An observational checklist was also prepared for recording during the field inspection. Participatory observation technique was included in order to directly examine the classroom communication techniques, available learning material and the supportiveness of the classroom environment. This gave the researcher an opportunity to look at what was happening or taking place within the classroom.

Avoke (2005) cited Morrison (1993) to say that observation enables the researcher to gather data on the physical, human interactional settings and programme of study. Participatory observation is done when there is a clear agenda of issues you are seeking the data to show.

Documentation

Documentation was another instrument used in the data collection process. Johnson (1985) cited in Avoke (2005), highlighted that documents to a researcher were important source of quantitative data, and documentary analysis of educational files, and records could prove to be extremely valuable. Creswell (2005) also noted that documents consisted of public and private records that qualitative researchers obtain about a site or participant in a study and they included newspapers, minutes of meetings, personal, journal and letters. They also included, school records, folders, registers, archival records, correspondents or official government papers.

In relation to this study, documents such as student's examination reports, class exercise books and assessment records were reliable sources for tracking the academic performance of learners with hearing impairments. It must be highlighted that class exercise books alone did not reflect the true performance of the learners since they may be helped by classmates hence the need for assessment and examination reports. The assessment records of learners with hearing impairments gave a continuous account of the overall performance of the learners. These documents helped assess classroom communication and the academic performance of learners with hearing impairments.

3.6 Reliability and validity

An equally significant aspect of the study was reliability and validity. Gall et al. (1996) defined validity as testing the appropriateness, meaningfulness and usefulness of specific inferences made. However, in social science, validity refers to whether a method measured what was intended to measure.

According to Yin (1994), the main objective of reliability in research was to ensure that, if a later investigator followed exactly the same procedures as described by an earlier investigator and conducted the same study all over again, the latter should arrive at the same findings and conclusions. Similarly, Kvale (1989:53) defines reliability as the “accuracy of operations in the practical and logical procedures”.

In order to enhance the reliability of the findings, the data collected was verified using triangulation and respondent validation. Triangulation was done by comparing data collected using different instruments to ascertain whether or not they collaborated. On the other hand, respondent validation was done by relating the findings of the study with evidence from literature reviewed. In order to ensure that the findings were valid, both triangulation and respondent validation was used. For instance, data collected on classroom communication techniques from all respondents was cross-checked with data collected from observations.

3.7 Data analysis

Thematic analysis was used to analyse qualitative data. Statistical Package for Social Sciences was used to analyse quantitative data in order to generate frequencies.

3.8 Ethical considerations

The following ethical issues which were considered are explained below:

Permission to conduct the study

Bell (1993) pointed out that no researcher could demand access to an institution, organization or to materials. Therefore, the researcher sought permission to conduct the study using an introductory letter from the University. This letter was handed over to

the Special Education Standards Officers who introduced the researcher to the head teachers. The head teachers then authorized the respondents to partake in the study.

Informed consent

Respondents in the study were informed about the nature and purpose of the study, and informed consent was sought before interviewing and administering questionnaires to them. The educational institutions were fully aware of the study and were very cooperative and participated fully.

Confidentiality and anonymity

According to Neuman (2000) a researcher had a moral obligation to uphold confidentiality of data, which included keeping information confidential from others in the field and disguising members' names in field notes. It is against this background that respondents were also assured of high levels of confidentiality. Pseudonyms were also used to protect the anonymity of the respondents in all transcripts and reports. In addition, the respondents were informed that the information gathered was purely for academic purposes.

3.9 Summary

This chapter presented the methodology used in the study. A case study design was used to explore classroom communication and academic performance of learners with hearing impairments. The study population composed of learners with hearing impairments, Heads of Department, Head teachers and Special Education Standards Officers. A total of a hundred (100) respondents were used as the sample. This sample was selected using purposive and simple random sampling procedures. Three instruments namely, questionnaires, interview guides and observational checklists were used to collect data. Thematic analysis was used to analyse qualitative data and Statistical Package for Social Sciences was used to analyse quantitative data in order to generate frequencies. Furthermore, ethical issues were considered in the process of collecting data.

CHAPTER FOUR

PRESENTATION OF FINDINGS

The chapter presents findings of the study on classroom communication and the academic performance of learners with hearing impairments. The findings are presented in line with the study objectives and are presented under the following themes: classroom communication techniques used in classrooms for learners with hearing impairments, adequacy of learning materials for classroom communication, supportiveness of classroom environment for effective classroom communication and how classroom communication affects the academic performance of learners with hearing impairments. The findings of the learners are presented first, followed by those from the teachers, Heads of Department, Head teachers and Standards Officers. It ends with a brief summary.

4.1 Classroom communication techniques used in classrooms for learners with Hearing Impairment

This section presents types of classroom communication techniques used in classrooms for learners with hearing impairments, the techniques learners are most comfortable with and the techniques commonly used by teachers of learners with hearing impairments.

4.1.1 Views of Learners with Hearing Impairments

Concerning the types of classroom communication techniques used in classrooms for learners with hearing impairments, findings showed that there were different types of classroom communication techniques used in classrooms for learners with hearing impairments. The most common classroom techniques used by learners included verbal, lip-reading, gestures, body language, facial expressions, writing and sign language. Of these techniques, 80 (100%) learners commonly used facial expressions and body language. 70 (88%) commonly used sign language while writing and gestures were commonly used by 60 (75%) and 55 (69%) of learners. On the other hand, the least

commonly used was verbal communication which was only used by 5 (6%) learners and lip-reading which was only used by 35 (44%) learners with hearing impairments. Table 3 shows the learners responses.

Table 3. Classroom communication techniques that were used in classrooms for learners with hearing impairments

Classroom communication technique	Number of responses	Percentage (%)
Sign Language	70	88%
Writing	60	75%
Facial expressions	80	100%
Body Language	80	100%
Gestures	55	69%
Lip reading	35	44%
Verbal communication	5	6%

Classroom communication techniques that learners with Hearing Impairments were most comfortable with

In relation to classroom communication techniques that learners were comfortable with, findings showed that 70 (88%) were comfortable with using sign language, 60 (75%) were comfortable with using facial expressions and body language respectively. 50 (63%) reportedly felt comfortable using gestures and 40 (50%) learners were comfortable using writing. On the other hand, 30 (38%) of the learners were very uncomfortable using lip reading and 75 (94%) were very uncomfortable with the use verbal language. Table 4 shows their responses.

Table 4. Classroom communication techniques that learners with Hearing Impairments are most comfortable with

Classroom communication technique most comfortable with	Number of responses	Percentage (%)
Sign Language	70	88%
Writing	40	50%
Facial expressions	60	75%
Body Language	60	75%
Gestures	50	63%
Lip reading	30	38%
Verbal communication	5	6%

Classroom communication techniques commonly used by teachers of learners with hearing impairments

With regard to the classroom communication techniques commonly used by the teacher, All learners indicated that teachers commonly used verbal and writing when communicating. Table 5 shows their responses.

Table 5. Classroom communication techniques commonly used by teachers of learners with hearing impairments

Classroom communication technique commonly used by teachers	Number of responses	Percentage (%)
Sign Language	75	94%
Writing	80	100%
Facial expressions	60	75%
Body Language	60	75%
Gestures	60	75%
Verbal communication	80	100%
Finger spelling	75	94%

4.1.2 Views of teachers

In relation to the classroom communication techniques that the teachers used in classes for learners with hearing impairments, the teachers pointed out that they used sign language, finger spelling, facial expressions, gestures, writing and verbal communication. Most of the teachers who served in the short term (2-4 years) category indicated that of all the classroom communication techniques used in the classroom for learners with hearing impairments, the most comfortable classroom communication techniques were finger spelling, writing and verbal techniques. One of the teachers said:

In relation to communication, when I first started teaching learners with hearing impairments, I had very little knowledge of sign language. I mainly relied on other teachers and learners to assist me. What I use the most is finger spelling, writing on the board and verbalizing as I try to sign. This is because I only know limited signs.

Another teacher commented that:

Learning to communicate with learners with hearing impairments has been a fascinating journey which in my opinion never comes to an end. This is because every day, I am learning new signs for different words. I find finger spelling and writing to be most useful for me because even if I do not know the signs very well, the learners can interpret for themselves.

On the other hand, long serving teachers indicated that the most comfortable classroom communication techniques for them included gestures, body language, sign language and verbalizing. One teacher said:

Because of my vast experience in teaching these children, I come to realise that gestures and body language combined with sign language are the easiest ways of communicating. Body language and gestures are most beneficial because they do not require to be taught and even a learner with hearing impairments who doesn't know sign language is able to read in between the lines.

Another teacher had this to say:

I am very comfortable with sign language. My sign language vocabulary has increased with the extensive years of teaching learners with hearing impairments such that I use more of sign language than any other type of classroom communication.

In relation to challenges that teachers face when communicating with learners with hearing impairments in the classroom, the teachers cited limited sign language vocabulary, differences in signs among learners, lack of formal assessment prior to education placement, big class sizes, insufficient lighting and ventilation, inadequate teaching and learning material as well as few desks. In the interview, one teacher had this to say:

My classroom experience with learners with hearing impairments has been very challenging and yet rewarding. One of my greatest challenges is that these children are not formerly assessed to ascertain the degree of the hearing loss. Therefore, it is very difficult to ascertain the individual learning needs of the learners. In the same class some learners know sign language while others do not know sign language. It is really hectic.

Findings further showed that the learners come from different backgrounds and each learner posed different communication challenge for the teacher. The competence in sign language among learners with hearing impairments varied and as a result, teachers found it difficult to cater for individual communication needs of the learners. To this effect, one teacher narrated that:

There is a common myth that if you have a hearing impairment then you automatically know sign language but that is not the case. We have noticed that some learners who come from different schools learnt to sign certain words differently and this is a huge challenge. Moreover certain learners with hearing impairments also have visual impairments. These learners academic performance is below average mainly because classroom communication is a huge challenge. My greatest challenge with such learners is how can I best communicate with them without inconveniencing the other learners? This is mainly because they need to be communicated to like they are in grade 2 and yet they are in grade 10.

4.1.3 Views of Heads of Department

When asked how long the Heads of Department (HoD) had been serving in this position, they responded six (6) years and four (4) years respectively. During these years in offices, the HoD's had observed that the most commonly used classroom communication techniques in classrooms for learners with hearing impairments included sign language, finger spelling, verbal, writing, gestures, lip reading and body language.

In relation to how often the HoD's observed lessons, both responded that at least twice a week. This was because as HOD they were equally expected to teach especially since there was shortfall of teachers. Currently, the HOD had 18 periods a week to teach. When not teaching, the HOD's had other administrative duties to attend to. One of the HoD's narrated that:

Being HoD is a very demanding job. You have to bear in mind that not only am I in this office to monitor, supervise classroom activities but also to ensure that the boarding is running smoothly. I try as much as possible to monitor at least 2 classes, lessons and/or teachers to have a glimpse of how teaching and learning is taking place in various subject areas. Also to monitor classroom communication and give advice were need arises. Much monitoring would be ideal but I equally have classes to teach because of shortage of man power. When am not doing any of the mentioned, I have other pending administrative duties to attend to.

4.1.4 Views of Head teachers

When asked which classroom communication techniques are normally used in their respective schools, the head teachers indicated writing, gestures, sign language, lip reading, body language and verbal communication. The head teachers were both confirmed that most of the teaching and communication that took place in the classroom is done in sign language.

4.1.5 Views of Special Education Standards Officers

When asked which classroom communication techniques the Special Education Standards Officers (SESO's) observed to be commonly used by the teachers, the SESO's responded that verbal communication, writing, gestures, sign language, lip reading, body language and finger spelling. The SESO's both emphasized that they encouraged teachers to engage as many classroom communication techniques as possible. They especially focused on sign language competence of the teachers and use of visual aids during lesson presentation. The SESO pointed out that finding means and ways of enhancing teacher and learner communication was one of the important aspects of monitoring lesson presentations. This was because they observed that most teachers struggled to present good lessons because they did not know or had not yet grasped how to effectively communicate with learners. One SESO had this to say:

With regards to learners with hearing impairments, at the core of monitoring communication is competence in sign language and use of visual learning aids. This is very crucial. As a government, we have worked hard to ensure that teachers training to work with learners with hearing impairments are trained in sign language. This has seen a great improvement in teacher learner communication. I must however point that teachers are still lagging behind when it comes to visual aids. Some classrooms have no talking walls whatsoever. They only miraculously appear on walls when teachers hear that standards officers are going round schools. We have highly emphasized use of visual aids but teachers seen to have so many excuses. One of the most cited is lack of material but honestly it is just incompetence because not all materials require to be bought. Common household items can be used. We still have work to do in terms of improving classroom communication.

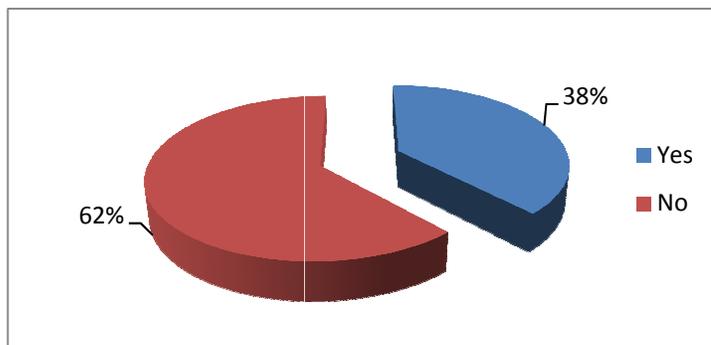
4.2 Adequacy of learning materials for classroom communication

This section presents the adequacy of learning material for classroom communication in relation to: availability of learning materials, accessibility of text books, vocabulary in text books and whether the teacher simplifies the vocabulary in text books.

4.2.1 Views of learners with Hearing Impairments

Concerning the availability of learning materials, Findings showed that 50 (62%) learners did not have any learning materials whilst 30 (38%) had access to limited learning materials. The learning materials that were mainly available were text books. Figure 1 shows the learners responses

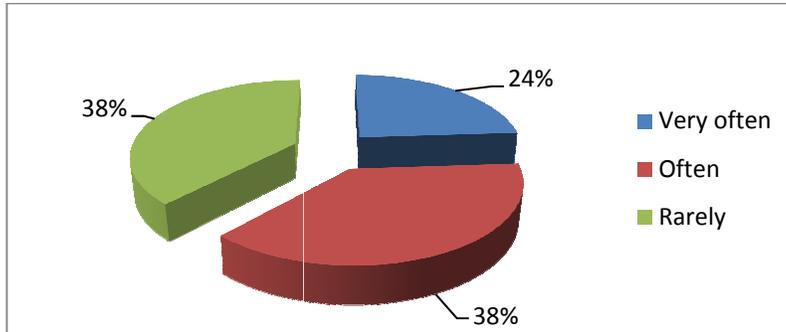
Figure 1. Availability of learning materials



Accessibility of text books

With regard to the accessibility of text books, findings showed that 10 (13%) often used text books when learning, 50 (63%) occasionally used text books while 20 (25%) rarely used text books. Figure 2 shows the responses.

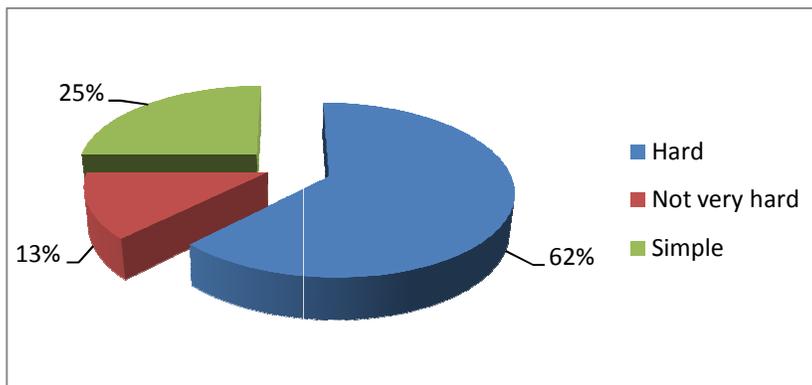
Figure 2. Accessibility of text books



Vocabulary in the text books

In relation to the vocabulary used in the text books, 50 (63%) of the learners indicated that they found the vocabulary in the text books very difficult to comprehend. 10 (13%) indicated that the vocabulary was not very difficult to comprehend while 20 (25%) learners indicated that the vocabulary used in the text books was simple and easy to comprehend. Figure 3 shows the responses

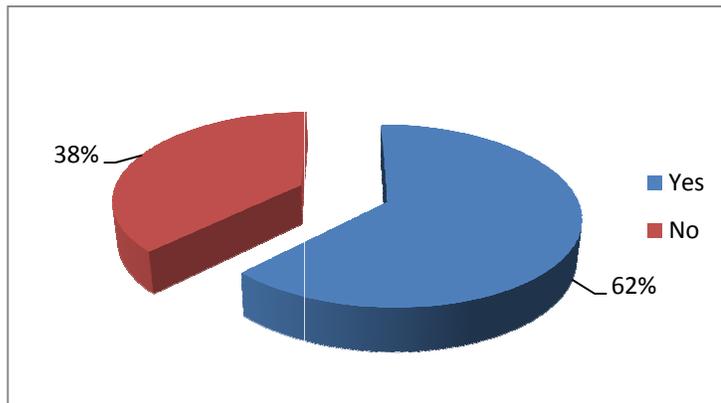
Figure 3. Vocabulary found in text books



Whether the teacher simplified the vocabulary in the text books for learners with hearing impairments

Findings showed that 50 (62%) learners indicated that the teacher simplified most the work in the text books and made the vocabulary much easier to comprehend. On the other hand, 30 (38%) did not agree that the teacher simplified the work in text books. Figure 4 shows their responses.

Figure 4. Simplifying the vocabulary in text books



4.2.2 Views of Teachers

In relation to adequacy of learning materials, findings showed that teaching and learning materials were inadequate at both schools. The schools had very few text books which could not cater for the class and in some instances, there were no teaching guides. Because the schools relied on allocation from the education boards, resources were scarce. Therefore teaching and learning materials that were available were not enough to cater for all learners. Findings revealed that the very few text books that were available were shared on a book to pupil ratio of 1:4. As a result, learners with hearing impairments solely relied on the interpretation of the teacher. However, there had been a notable difference in the slight increase of allocation of resources to restock teaching and learning materials. One teacher narrated that:

In certain instances, it has been difficult to even write schemes of work because we do not have the syllabus in the department. As a result I had to outsource the syllabus from another school and then a copy was made. In my department, text books are very few and as a result, learners always keep writing rewrites and composition. Once I was put to task by

the standards officers as to why learners work was so narrow. My comment was, how do I teacher comprehension without text books? I must mention that the school library is equally not well stocked.

Another teacher lamented that:

I am totally aware of the importance and use of learning and teaching aids. However, because our departments are not stocked, it means I have to use my personal resources to make and procure the necessary teaching and learning aids such as manilla paper, markers, photocopy hand-outs, etc. This is time consuming and too expensive for me.

4.2.3 Views of Heads of Departments

Concerning the adequacy of learning materials, findings showed that both Heads of Departments agreed that teaching and learning materials were inadequate. This was attributed to scarcity of resources and trying to maximise the use of available funds. Teaching and learning material were available but not sufficient to cater for the entire learner populace. This was because the available stock was what was used by the teachers to help guide and plan the curriculum. On the other hand, textbooks that were accessible were shared by the learners at a ratio of 4:1.

Findings further revealed that both schools were residential schools that fell under the administrative wing of the mainstream schools. Therefore, funding that comes from the Government to restock teaching and learning materials was shared between the mainstream and the classrooms for learners with hearing impairments. Government funding was not sufficient enough to provide readily available and accessible teaching and learning materials. In certain instances teachers needed to outsource teaching and learning materials from neighbouring schools. This is what the one H.O.D had to say:

The library is under stocked, and the very few books that are available are stored under lock and key for fear of been stolen by the learners or pages been ripped out. As H.O.D, we seat down as a department and prioritise what should be procured urgently using the available funds. In certain instances teachers need to outsource teaching and learning materials from neighbouring schools. In some instances, the teachers use their own resources.

4.2.4 Views of Head teachers

In relation as to whether teaching and learning materials were readily available and accessible. Both head teachers agreed that some of the materials were readily available though not easily accessible. This is because they were quite a few in stock. One Head teacher narrated that:

Yes, most teaching and learning materials are available. At least we can say the learners and teachers have some of the basic requirements such as chalk, chalkboards, syllabus, teachers' guides and at least one text book in each subject. We are still trying very hard to ensure that learners have a book to learner ratio of 1:2 but as it is, it is very difficult to achieve. This is because, resources are very scarce. It is very difficult to source for books when we struggle to even buy food for the whole term for the learners. We have a Home Economics room that is equipped with the basic material such as stoves, sewing machines and fridges. We also have a wood work workshop although it can be observed that it does not have any materials required to train the learners. In addition, do not even have a science laboratory.

4.2.5 Views of Special Education Standards Officers

As to whether learning materials were adequate, both standards officers agreed that the teaching and learning materials are inadequate. This was attributed to the fact that the schools solely relied on government funds to procure most of the teaching and learning materials for them. And it was a well-known fact that governments funding to education was not sufficient to cater for all the educational needs of the Ministry of Education. The standards officers prioritised and allocate use of government funds in order to address some of the issues in the education sector. The government was commended by the Standards Officers that despite not having enough teaching and learning resources in schools, it continued to allocate funds to schools to ensure that they procured all the urgent teaching and learning requirements in line with the given budget. This budget was not fixed as funds were allocated according to available funds. In certain cases, the government procured the teaching and learning materials and distributed on an equity and equality basis. This is what one standards officer had to say:

Teaching and learning sources are available but not accessible in schools. Resources in the country are very scarce. As a result, government funding to education is sufficient enough to address all the

problems that the education sector is facing at once. It must be borne in mind that is not only learning materials that schools are lagging, there is the issue of poor infrastructure, lack of infrastructure, limited man power, water and sanitation issues to mention but a few. However, the government is trying all its level best to ensure that schools are well equipped with all the necessary learning and teaching materials. As we speak, to fulfil its pledge for free education in basic schools, the government provides text books, exercise books and stationary to all learners at the basic school level.

4.3 Supportiveness of the classroom environment for effective classroom communication for learners with Hearing Impairments

This section presents lighting in classrooms, how noise is kept away from the classroom, classroom ventilation, carpets in classrooms and classroom seating arrangement.

4.3.1 Views of learners with hearing impairments

With regard to lighting in the classrooms, all learners indicated that the classroom did not have adequate lighting.

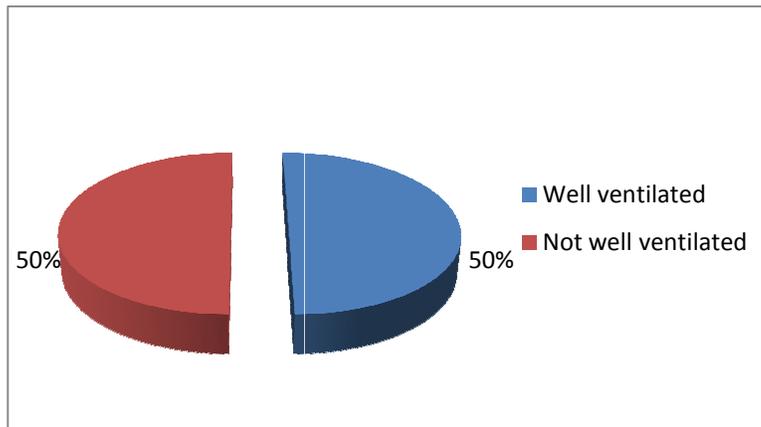
How noise is kept away from the classroom

Findings showed that only 30 (38%) respondents answered this question. All 30 respondents indicated that the teachers' classroom management, with the help of prefects, was a way in which noise was kept out of the classroom.

Classroom ventilation

In relation to classroom ventilation, 40 (50%) of the learners indicated that the classroom was not well ventilated while the remaining 40 (50%) indicated that the classroom was well ventilated. Figure 6 shows their responses

Figure 6. Class ventilation



Carpets in the classrooms

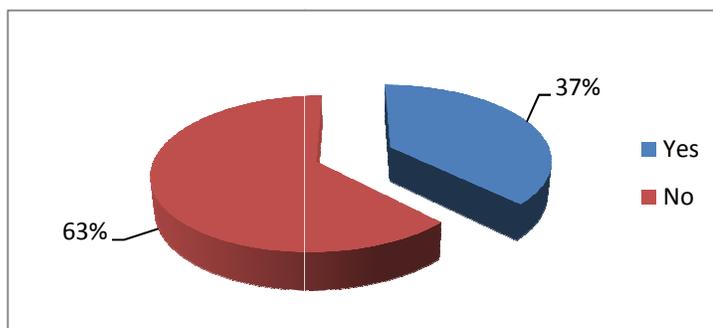
Findings showed that 80 (100%) learners indicated did not have any carpeting in their classrooms.

Findings further revealed that all learners expressed ignorance on how carpets were used to minimise noise away in the classroom.

Classroom seating arrangement

In response to the seating arrangement, 50 (63%) of the learners indicated that they could not see the teacher clearly from where they sat whilst 30 (37%) indicated that they could see the teacher clearly from where they sat. Figure 7 shows their responses

Figure 7. Seating arrangement in class



Findings further revealed that the prominent reason given for learners not been able to see the teacher clearly from where they sat included sharing of desks and small classroom spaces which were a result of over enrolment.

4.3.2 Views of teachers

In relation as to whether the classroom environment was supportive for effective classroom communication, all teachers responded that in some way it was but in other ways, it was not supportive at all. One of the teachers said:

On one hand it is, on the other hand it is not...the model of the classroom is made in such a way that it accommodates a maximum of 10 pupils at any given time. This prescribed classroom enables enough ventilation, lighting and one on one teaching interaction with the pupils. This can be especially noted in the lower grades were the class sizes are small and consist of about a maximum of 8 learners. However, the classroom environment of the upper grades has been compromised by the large class sizes therefore making it difficult for the teacher to communicate effectively. What even makes the situation worse is that the class sizes are quite large ranging from 20-30 per class and yet the classrooms themselves are small. With such an arrangement of large class size, how can I honestly offer one on one learning experiences with my learners.

Another teacher commented that:

Our school has notably larger classrooms which are well ventilated. However, the class sizes are also large and this makes it difficult for the teachers to address the individual communication needs of the learners. Carpets are not fitted in the classrooms and the chalk boards are not in the best of conditions.

4.3.3 Views of Heads of Department

With regard as to whether the classroom environment was conducive for effective classroom communication, the Heads of Department had different views. This was largely because one school had better infrastructure than the other school in terms of classroom sizes and available desks. This is what one of the HODs had to say:

Well I should commend the school in terms of classroom environment. Our school has big classrooms and enough desks. Desks are shared between two pupils and nothing more. If you look at the classroom sizes,

they are spacious, teachers are able to roam around and monitor closely as they teach. Moreover, the spacious classrooms allow for good ventilation and lighting. In summary, the aspect of classroom environment truly supports effective classroom communication as the learners are able to clearly view the teacher, the teacher is able to walk around and avoid obstructing the learners. The classroom environment is very conducive.

However, another HOD lamented:

Honestly speaking, the classroom environment needs a lot of improvement for it to promote effective classroom communication. As you can see, our classroom sizes are quite small. The classrooms are overcrowded and desks are shared amongst 3 learners. Teachers do not even have enough space to move. Therefore, communication is a bit hindered because learners cannot clearly see the teacher when standing in certain positions. Writing for learners is also cumbersome because the desks are congested.

4.3.4 Views of Head teachers

With regards as to whether the classroom environments were supportive of effective classroom communication, both heads responded that in some aspects, the classrooms were conducive though other aspects needed improvement. This is what one head teacher had to say:

Not really, this is because the class rooms are small while the number of learners is big. The ventilation is okay despite the classrooms been partitioned. In addition, we do not have any carpets in any class.

4.3.5 Views of Special Education Standards Officers

Concerning the supportiveness of the classroom environment for effective classroom communication, both SESO's agreed that in a way, the classroom environment did support classroom communication for learners with hearing impairments. SESO's observed that the classrooms were spacious and despite the learners been more than the recommended number, they were all able to view the teacher clearly and vice versa. In addition, the classrooms were well ventilated and have enough lighting.

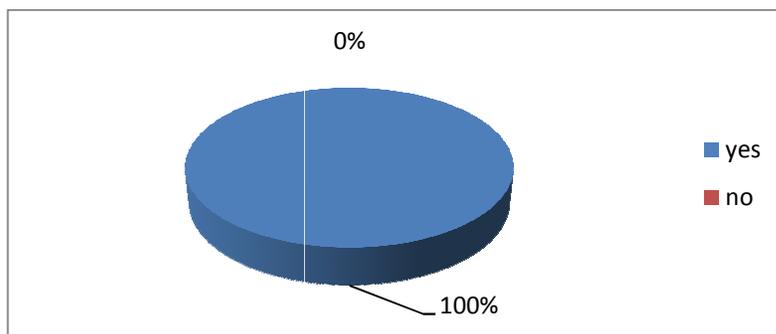
4.4 How classroom communication affects academic performance of learners with Hearing Impairments

This section presents findings on how classroom communication affects the academic performance of learners with hearing impairments.

4.4.1 Views of learners with hearing impairments

Concerning whether classroom communication affects the academic performance of learners with hearing impairments, all (80) learners agreed that classroom communication highly affected classroom performance. Figure 9 shows their responses.

Figure 8. Whether classroom communication affects the academic performance of learners with hearing impairments



Findings further revealed that when all learners were able to effectively communicate in class, their performance was good and they enjoyed learning. However, due to poor communication skills 63% of the learners indicated that they had performed below the average pass mark of 40% and only 13% attained the average pass mark.

4.4.2 Views of teachers

With regard to how classroom communication affects the academic performance of learners with hearing impairments, teachers responded that it had both negative and positive results which were dependant on whether the classroom communication was effective or not. The teachers observed that learners with hearing impairments who actively participated in classroom activities, asked questions during lessons and were able to clearly follow through lessons, rules and instructions performed far much better than their peers who were not actively involved in classroom activities. This was

because as the learners participated in class, the teacher was able to determine some of the communication needs of the learners and focus on their strong areas. For instance, if a learner was good at lip reading and not sign language, the teacher would verbalize more whenever the learner had a query.

Teachers pointed out that when a learner did not actively participate in class, it was difficult for the teacher to ascertain his or her communication needs of the learner. The teachers also indicated that when learners had difficulties in communication, they became demoralized. As a result they did not feel motivated to learn.

Findings further revealed that teachers also engaged other modes of communication for the sake of the learners. All the teachers responded that effective classroom communication motivated learners. This was attributed to the fact that when communication flowed flawlessly during classroom interaction, retention by the learners was significant. As a result, the academic performance of the learners' improved.

Moreover, the teachers responded that there was need to revise curriculum content because communication needs of learners with hearing impairments varies with that of hearing learners. Thus learners with hearing impairments require more time to adequately understand and complete the current syllabus. This has been attributed to the limited sign language vocabulary. This makes it difficult for teachers to fully explain certain concepts. As a result, this negatively affects their academic performance.

4.4.3 Views of Heads of Department

Concerning how classroom communication affects the academic performance of learners with hearing impairments, both Heads of Department agreed that classroom communication either enhanced or negatively affected the academic performance of learners with hearing impairments. Both Heads of Department highlighted that classroom communication is at the core of learning. This was because it was classroom communication that determined whether the learner had understood the concept or not. Classroom communication was the foundation that answered the question 'how are you teaching?' and 'what is the best way to teach?'

Findings further revealed that even if a learner had all the relevant materials but could not communicate, it would be difficult to teach the learner. Therefore, the performance would be bad. Effective classroom communication amounted to good learner performance where as poor communication amounted to poor learner performance. This is what one HOD had to say:

Indeed it has been observed that learners who are able to communicate perform well in class. This may be attributed to the ability analyse, explain, ask questions during lessons and actively participate during lessons. When classroom communication is effective, the learners' academic performance is good. Similarly, when classroom communication is lacking, learner performance is poor.

4.4.4 Views of Head teachers

With regard to how classroom communication affects the academic performance of learners with hearing impairments, head teachers responded that the academic performance usually represented whether the communication in the classroom was effective or not. It was observed that the learners who performed on average or above average were easy to communicate while the learners who performed below average had difficulties communities. For instance, some of the learners who performed below average had difficulties signing and writing.

4.4.5 Views Special Education Standards Officers (SESO)

Concerning how classroom communication affects the academic performance of learners with hearing impairments, both SESO's responded that good classroom communication positively affected academic performance, while poor classroom communication negatively affected academic performance.

The standards officers emphasized that classroom communication was not a one way system but highly involved the learner and the teacher. Poor communication could be observed in learners inability to answer questions in class, habitual copying of work from other learners, in ability to read and write.

Learners who were able to ask and answer questions, to reason, read and write performed far much better than their peers who had difficulties in doing the mentioned activities.

4.5 Summary of findings

This chapter has presented the findings of classroom communication and academic performance of learners with hearing impairments. The findings of the study were in line with the objectives. The objectives of the study were as follows: To identify classroom communication techniques that were used in classrooms for learners with hearing impairments, to find out whether there was adequate learning materials for learners with hearing impairments, to establish whether the classroom environment was supportive of effective classroom communication and to determine how classroom communication affects the academic performance of learners with hearing impairments.

Findings of the study revealed that the types of classroom communication techniques that were used included verbal, lip-reading, writing, body language, gestures and sign language. As regards to adequacy of learning materials, there was inadequate teaching and learning materials. In relation, to classroom environment, it did not support classroom communication. Concerning how classroom communication affects the academic performance of learners with hearing impairments, it was found that due to poor communication classroom communication skills, 63% of the learners performed below the average pass mark. These learners were unable to communicate effectively. They were unable to analyze, explain, ask questions during lessons and to participate in the class activities. As a result, they did not perform well in class.

CHAPTER FIVE

DISCUSSION OF FINDINGS

This chapter discusses the findings of the study based on the objectives and presented under the following themes: classroom communication techniques, adequacy of learning materials on classroom communication, supportiveness of classroom environment on effective classroom communication, how classroom communication affects the academic performance of learners with hearing impairments. It ends with a summary.

5.1 Classroom communication techniques used in classrooms for learners with Hearing Impairments.

An analysis of the data collected showed that learners with hearing impairments used a number of classroom communication techniques. These included sign language, writing, facial expressions, body language, gestures, lip reading and verbal communication. Of these techniques, facial expressions and body language were used by all the learners. Sign language was used by the majority (88%) of the learners while verbal communication was the least (6%) used by the learners.

Concerning the classroom communication techniques learners were most comfortable with, findings revealed that the least used and most uncomfortable classroom communication technique for learners with hearing impairments was verbal communication. Most (94%) of the learners indicated that they were uncomfortable using verbal communication. In comparison, teachers of learners with hearing impairments all used verbal communication.

The use of verbal communication by teachers of learners with hearing impairments is consistent with Ademokoya (1996) who found that the very communication mode most debated on is speech. Speech is the most conventional and most used form of communication in any human settlement. Similarly, a study by Ayodele (1988) found that learning best takes place via spoken language. With regard to the findings by

Adekemoyo (1996), it is therefore argued that if speech is the most conventional in 'any' human settlement, why is it that most learners with hearing impairments find it very uncomfortable? Indeed, if learning best takes place via spoken language meanwhile most learners with hearing impairments are uncomfortable with this type of classroom communication may suggest reason for poor academic performance.

Clearly, there is a gap between the classroom communication techniques that the learners and teachers commonly used. It must be noted that when teachers engaged more of verbal communication as a classroom communication technique, learners were not able to fully benefit from lesson presentation because learners found it very uncomfortable hence rarely using it. Similarly, Moores (1996) found that learners who only used lip reading for a long period of time lagged behind in their comprehension, had limited vocabulary, poor pronunciation of words and speech sounds, and felt fatigued towards the end of a class and lost concentration. Not only did such learners misinterpret verbal communication but they also frequently misinterpreted written lessons and reading material. Analysis of these findings showed that verbal communication posed the greatest challenge for the learner and this negatively affected their academic performance.

In addition, much as verbal communication was used by teachers to enable learners who knew how to lip read or had residual hearing to utilize it; findings showed that only few (44%) learners used lip reading. Similarly, Davis and Wood (1992) reported that it was very difficult for most learners with hearing impairments to rely solely on lip reading to communicate, as they could only pick up a small percentage of what was being said. Therefore, lip reading was usually used alongside other communication techniques.

With regards to challenges that teachers faced when communicating with learners with hearing impairments in the classroom, the teachers cited limited sign language vocabulary, differences in sign language among learners, lack of formal assessment prior to education placement, big class sizes, inadequate teaching and learning material as well as few desks.

It can be argued that learners with hearing impairments have varying hearing loss. When the learners are not formally assessed to ascertain the level of hearing loss, the individual communication needs of the learners will not be identified. Such a scenario entails that learners with varying degrees of hearing loss will be placed in one classroom and teachers will face challenges when ascertaining which classroom communication techniques will improve the academic performance of learners with hearing impairments.

The lack of formal assessment to ascertain the degree of hearing loss has had a negative effect in identifying the communication needs of the learners. This negative effect has negatively affected the academic performance of learners with hearing impairments because teachers face a lot of challenges in identifying effective classroom communication techniques for individual learners. These findings are consistent with Barefoot (2011) who found that learners with hearing impairments value learning with their communication strengths such as access to visual information, opportunity to use their residual hearing and use of their strongest language.

Accordingly, learners with mild to profound hearing impairment may not benefit from verbal communication but rather sign language, body gestures to mention but a few. These findings are consistent with Nicholas et al (1994) who carried out a study titled development of communicative function in young learners with hearing impairments and learners with normal hearing which showed that learners with hearing impairments rely more on nonverbal labeling techniques than would be expected in children with normal hearing, but still express a full range of communicative skills.

Teachers also cited competence in sign language amongst learners as a challenge for effective classroom communication. Findings revealed that there was a variation in sign language vocabulary amongst learners with hearing impairments. One teacher pointed out those learners who came from different schools signed certain words differently. In addition, some learners had comorbid conditions.

It can be argued that such a scenario where there is variation in sign language affected the pace of the lesson. This is because communication, at this point, between the learner

and the teacher involved a lot finger spelling and assigning an appropriate sign to a proposed word. It must be highlighted that when too much time is spent finger spelling, the pace of the lesson is slow, some learners get bored and the teacher fails to complete assigned tasks. This classroom communication technique negatively affected the academic performance of learners with hearing impairments because it was very monotonous and only catered for that individual learner.

Findings also revealed that classroom communication was at the core of effective teaching and learning. Special Education Standards Officers and Head teachers emphasized that they encouraged teachers to engage as many classroom communication techniques as possible. They especially focused on sign language competence of the teachers and use of visual aids during lesson presentation. The SESO's pointed out that finding means and ways of enhancing teacher and learner communication was one of the important aspects of monitoring lesson presentations. This was because they observed that most teachers struggled to present good lessons because they did not know or had not yet grasped how to effectively communicate with learners.

It must be highlighted that the teaching and learning process of learners with hearing impairments must include the use of different classroom communication simultaneously. For instance, the teacher may use facial expressions, signs, verbal and body language at the same time. Similarly, Ademokoya (1995) found that even when speaking and signing simultaneously as is often the practice while engaging total communication (Speech and signs) to teach learners with hearing impairments, more things are said than signed. All languages have expressive and receptive features for communication. Teachers are therefore encouraged to use different communication approaches to teach learners with hearing impairments. Similar findings are those of Barefoot (2003) who reported that learners with hearing impairments value learning with their communication strengths such as access to visual information, opportunity to use their residual hearing and use of their strongest language.

5.2 Adequacy of learning materials for learners with Hearing Impairments

The question as to whether there were adequate learning materials in classrooms for learners with hearing impairments was intended to explore the availability of learning materials, accessibility of text books, vocabulary in text books and whether the teacher simplified the vocabulary in the text books. Learning materials play a very important role in the teaching and learning process of learners with hearing impairments. This is because learning materials such as books, wall charts, pictorial illustrations to mention but a few, help learners to build on their vocabulary. In order for learners with hearing impairments to fully benefit from academic learning and teaching, modification of the curriculum to suit their communication needs cannot be overemphasized. Research carried out by Ainscow (2007) highlighted that without communication there will be no education, no matter how qualified and relevant the adaptation of content, methods and organization seems to be. Often, opinions about the methods used in programs for the deaf and hard of hearing were based on best practices or approaches to instruction.

Concerning availability of learning materials, majority (62%) of learners with hearing impairments did not have learning materials. In relation to accessibility of the textbooks, findings showed that majority occasionally used the text books while very few (25%) rarely used the text books.

An analysis of the above findings clearly shows that learning materials were scarce in classrooms for learners with hearing impairments with only 12% having access to learning materials. These findings call for concern because learners with hearing impairments are visual learners and require readily available and accessible learning materials. When learning materials such as text books are inadequate, learners with hearing impairments face challenges in building vocabulary. As a result they had very limited vocabulary. This limitation negatively affects their academic performance because there is a discrepancy between their vocabulary for communication and that of learners with normal hearing.

Further finding revealed that majority of the learners with hearing impairments found the vocabulary in text books very difficult to comprehend and that the teachers

simplified most the work in the text books and made the vocabulary much easier to comprehend. Similarly, Lytle & Rovins (1995) also reported that it is very important that the learning materials that learners with hearing impairments use are adapted to fit their communication and educational needs. In the past, educators of learners with hearing impairments focused primarily on language and communication variables at the expense of quality of curriculum.

Teacher, Heads of Department, Head teachers and Special Education Standards Officers also cited scarce resources, high book to pupil ratio of 1:4, outsourcing learning materials and under stocked school library, home economics department and woodwork workshop.

An analysis of these findings shows that much as the teacher simplified the vocabulary in text books, majority of the learners still found it difficult to comprehend. This can be attributed to the inadequacy of learning materials. Learners did not have the privilege to be exposed to extensive vocabulary and as result they relied too much on the teacher to simplify most of the work. This entails that when the teacher is not there to communicate or interpret the work, most of learners will perform below average because of teacher dependency. This dependency negatively affects their academic performance. When learners are exposed to learning materials, they build on their vocabulary and in the long run they become more confident. This is because, their communication options are more. These findings are consistent with Stubbs (2002) who found that the availability of adequate textbooks and other instructional materials has been shown to be one of the most positive and consistent determinants of teachers' willingness to teach as well as pupils' learning achievements.

With the scarce text books and minimal access, learners with hearing impairments continue to have limited vocabulary because they cannot practice their English. This is specially the case in Zambia where the language of instruction is English. Ikonta & Maduekwe (2005) in a study of Hearing-Impaired Students (In English Language) In a Conventional Secondary School in Lagos State, Nigeria found that the presentation of English language demands a lot of oral practice through dialogue, memorization, pattern drills, substitution tables and many others.

An analysis of the findings may suggest that one of the contributing factors to limited vocabulary among learners with hearing impairments is inadequate learning materials. Inadequate learning materials may be a cause as to why writing was ranking the lowest in classroom communication techniques. This is because learners are not exposed to learning materials, therefore, learners vocabulary is limited which in turn affects their ability to read and write. Similar findings by Allen (1986) highlighted that regardless of whether spoken English, simultaneous communication or American Sign Language is used for communication, the child must learn English for reading and writing. Schimer & Woolsey (1997) also found that when teachers spend instructional time on reading comprehension, strategies that encourage learners with hearing impairments to think deeply about what they read, they can be proficient and enthusiastic readers.

There has been very little information nationally on the classroom experiences and academic performance of learners with hearing impairments. For example, little is known and documented nationally about the types of subjects learners with hearing impairments take, the instructional settings of subjects, the instructional practices they experience, suitable communication practices, the challenges been faced or the accommodations and supports they need to ensure they receive quality education like their hearing counterparts.

5.3 Supportiveness of classroom environment for effective classroom communication for learners with Hearing Impairments

Concerning the supportiveness of the classroom for effective classroom communication, all respondents indicated that they did not have enough lighting and carpets in their classrooms. In terms of ventilation, 50% were not well ventilated. Findings further revealed that all learners expressed ignorance on how carpets were used to minimise noise in the classroom.

An analysis of the findings showed that the classroom environment was generally not supportive of effective classroom communication. When classrooms cannot manage noise, for instance, by use of carpets, learners with hearing residuals usually tend to be

irritated by the background noise. Many learners who have mild hearing loss fail to make use of their residual hearing because of environmental barriers such as a classroom environment that is not friendly for use of amplification devices. This is because the classrooms lack the resources to enable the environment to be least restrictive.

These findings are consistent with Ekwama (2003) who found that in order to accommodate learners with hearing impairments who use hearing aids, it is vital to minimize noise. If there was noise from outside, doors must be shut and in certain instances, windows may also be shut. These measures are put in place in order to reduce background noise. Findings also revealed that background noise, reverberation and distance from the speaker can be real issues for learners with hearing impairments, even those with mild or unilateral hearing losses who are able to hear in the classroom. Background noise and reverberation can be minimized by placing carpets on the floor. It was also vital to make sure that the windows have some covering and the students keep noise at a minimum. This included noises such as those made in woodwork and metal work workshops, other machines found in the school and noise outside the classroom or in the corridor.

The environment, just like teaching and learning materials plays a vital role in enhancing classroom communication. If classroom communication is to play a positive role in the academic performance of learners with hearing impairments, certain accommodations need to be made in the classroom. Accommodations such as small class sizes, spacious classrooms, well ventilation and good lighting all positively affect the learners' performance. A study carried out in Zambia by Malunga (2007) titled 'an investigation on the use of sign language and oral language by regular teachers teaching learners with hearing impairment' also showed that in relation to the learning environment, the best possible conditions would need to be in place, for example a quiet place and good lighting. This would allow learners with hearing impairments to concentrate and follow what is being lip-read. Lip-reading would be used in line with other communication approaches.

In relation to the seating arrangement, majority (62%) of the learners indicated that they could not see the teacher clearly from where they sat. The prominent reason given for learners not being able to see the teacher clearly from where they sat included sharing of desks and small classroom spaces which were a result of over enrolment. Findings of the study also revealed that desks are shared amongst three learners.

It is very cardinal that learners with hearing impairments are seated so that they can see both the teacher and their peers as much as possible. This can be attributed to the fact that the learners are able to see the various signs, lip read and read body language as they are in full view of all participants in the classroom. Similarly Livingston (1997) pointed out that if the classroom cannot be organized into a semicircle, consider having the deaf student sit in the second or third row so they have a comfortable view of the teacher. Clearly, any seating arrangement should not isolate the student. The implication of the seating arrangement in the study is that, when a learner is isolated, they tend not to want to participate actively in class. This seating arrangement negatively affected the performance of learners with hearing impairments.

5.4 How classroom communication affects the academic performance of learners with hearing impairments

In relation to classroom performance, findings of this study also showed that majority (63%) learners indicated that they performed below the pass average mark of 40%. An analysis of the findings shows that classroom communication negatively affected the academic performance of learners with hearing impairments. Similarly, a study by Marschark et al (2006) in New York revealed that regardless of teaching pedagogy, philosophy, or classroom management style, effective communication is fundamental to the instructional process. Academic performance, therefore, was the demonstration of learning of subject content and process. Consequently, while communication is extremely important to the overall successful education of learners with hearing impairments, no one communication technique should be at the forefront of academic performance.

In line with how classroom communication affects the academic performance of learners with hearing impairments, all learners agreed that classroom communication highly affected classroom performance. All learners indicated that when they were able to effectively communicate in class, their performance was good and they enjoyed learning. However, they did not have classroom communication skills. As a result, their academic performance was below average. Similarly, members of staff also observed that learners who communicated constantly in class performed far much better than passive learners. However, the most of the learners lagged behind in classroom communication skills and this affected their academic performance.

Consistent with these findings are those of Educational Quality Improvement Program 3 (EQUIP3, 2006) who reported that in developing nations, ninety per cent (90%) of learners with hearing impairments are born into hearing families where there is no exposure to sign language or to the existing culture of persons with hearing impairments. These learners with hearing impairments are typically deprived of the communication skills they need for social development, incidental learning, academic pursuits, and gainful employment.

The analysis of the findings of this study highlight a notable contrast between the classroom communication needs of the learner with hearing impairments and what the teacher has to offer. For instance, findings of the study revealed that whilst most learners were comfortable using sign language, facial expressions and body language, teachers on the other hand were comfortable using verbal, writing, finger spelling and sign language. This discrepancy negatively affected the academic performance of learners with hearing impairments. This is because the communication needs of the learners were not met. Moreover, the communication strengths of learners with hearing impairments were not fully utilized by the teacher.

Questions that arise from these findings are, firstly, is there effective classroom communication between the learner and the teacher if their communication needs are in contrast? Secondly, if not, who is to adapt, the teacher or the learner? Thirdly, how can the classroom management strike a balance between the communication needs of the learner and the capabilities of the teacher?

As to whether there was effective classroom communication with regard to techniques used, an analysis of the findings and observations of the study show that to a minimal extent, the classroom communication techniques used were effective. However, the analysis of the participants' responses and observation indicated that the classroom communication techniques were somewhat effective but this cannot be conclusive on a practical basis. This is because, to a larger extent, the individual classroom communication needs of the learners have not been clearly established through formal assessment. Secondly, all teachers tend to use writing while majority (75%) of learners used writing and only 50% were comfortable using writing. Thirdly, all teachers used verbal communication while only few (4%) learners used verbal communication. The deficit in classroom communication skills had created the perception by many learners with normal hearing that learners with hearing impairment are intellectually deficient. This classroom communication deficit has negatively affected the academic performance of learner with hearing impairments. These findings were traced to the difficulty in language usage, which made it difficult for learners with hearing impairments to communicate intelligibly with learners with normal hearing.

These findings are consistent with Malunga (2007) who found that in Zambia a lot of children are hardly identified that they are hard of hearing in class. Basically, the teachers don't have any knowledge on hearing impairment and even on the knowledge of assistive devices which can help these children to hear. These children will be subjected to be called dull in class because of the poor performance in class. Regular teachers don't have the sign language skills or oral language skills.

In addition, learners indicated that they benefitted most from sign language, body language, writing and facial expressions but this raises the question as to which is benefitting from what mode of communication. An observation made by this study was that, in social circles sign language was used flawlessly but in academic circles, the learners labored to conceptualize and express academic understanding. It was observed that not all learners were conversant with sign language. It must be pointed out that body language and facial expressions only communicate a limited number of concepts within the teaching and learning process. With regard to writing, the learners were able

to copy and guide the teacher in signing certain words that the teacher wrote on the board. However, very few learners could write independently.

Similarly, a study by EQUIP3 (2006) titled ‘Building human capacity among at risk learners with hearing impairments through academic support’ targeted at learners with hearing impairment communities in Kenya, Ghana, Tanzania, Zambia, Uganda, Malawi, Namibia, Democratic Republic of Congo revealed that in developing nations, most teachers working in schools for learners with hearing impairments are people with normal hearing who receive traditional teacher training, but do not receive any specialization training in sign language or visual teaching methods that are critical for visual learners. Nor are they trained in facilitating language, social, and cognitive development in learners with hearing impairments. Since sign language was rarely used to communicate between teachers and learners, learners can’t understand their lessons, and find it very difficult to learn. Most teachers of learners with hearing impairments resort to writing on the board and pointing as their primary means of communication.

With reference to the aforementioned, it can be argued that when communication skills are lacking, academic performance is negatively affected. It can be deduced from the findings of the study that the communication skills of majority of the learners with hearing impairments are lacking as a result of limited sign language vocabulary, inadequate teaching and learning materials and unsupportive classroom environment. Consequently, the learners’ sign language, reading and writing skills have equally been affected. Sign language is the expression of language using signs. Similarly, Polloway & Smith (1992) highlights that, language serves as the vehicle for many thought processes. The influence of language on thought is illustrated by the concept of verbal mediation, which facilitates learning, retention and understanding.

Findings in this study also revealed that majority of the learners with hearing impairments struggled to read, had poor memory and also struggled to understand what they read. These learners were slow even when it came to copying notes from the board, they required extended time to complete tasks as a result they took much longer time to complete the curriculum syllabus as compared to the hearing peers. Many of the learners could not work independently in the classroom. These learners are slow

because of poor linguistic skills for effective communication. Therefore, poor linguistic skills for effective classroom communication negatively affected the academic of learners with hearing impairments. Similarly, Long and Beil (2005) found that deaf adults in traditional learning environments often feel left out of classroom communication. Because of the lag that exists between the delivery of the information by the instructor and the signing of the content by the interpreter, learners with hearing impairments report difficulty responding to the instructor's questions or asking a timely question.

The findings of the study also highlighted some challenges faced by the teachers. These included teaching learners with comorbid conditions, differences in sign language vocabulary and learners limited sign language. This clearly indicates that the classroom communication techniques are highly effective to the individual learners who can benefit from the strengthened areas of communication while majority of the learners continue to lag behind. Therefore, who is to adapt, the teacher or the learner?

Another significant aspect to consider is that no classroom communication technique is more superior to the other. This is because all communication techniques play a vital role in addressing varying communication needs of learners with hearing impairments. Who should adapt cannot solely rely on one entity but on the communication process as a whole. No progress can be made to enhance communication amongst teachers and learners with hearing impairments until former assessment is done to ascertain hearing loss of the learners. Management is key to enhancing classroom communication skills. Similarly, Galaghui (1998) found that management in this case involves early intervention, referrals and series of programmes to habilitate or rehabilitate the individual and the family

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1. Summary of findings.

The study sought to investigate how classroom communication affects the academic performance of learners with hearing impairments at Solwezi and Munali Secondary Schools for learners with hearing impairments. The objectives of the study were as follows: To identify classroom communication techniques that were used in classrooms for learners with hearing impairments, to establish whether there was adequate learning materials for learners with hearing impairments, to establish whether the classroom environment was supportive of effective classroom communication and to determine how classroom communication affects the academic performance of learners with hearing impairments.

The first research question sought to establish the types of classroom communication techniques used in classrooms for learners with hearing impairments. Findings of the study revealed that the types of classroom communication techniques used included verbal, gestures, body language, lip-reading, writing, finger spelling, facial expressions and sign language. The most comfortable techniques for learners were sign language, body language and facial expressions. The least comfortable cited were verbal and lip reading. Teachers on the other hand were comfortable using finger spelling, sign language and writing. In relation to challenges that teachers face when communicating with learners with hearing impairments in the classroom, the teachers cited limited sign language vocabulary, differences in sign language among learners, lack of formal assessment prior to education placement, big class sizes, insufficient lighting and ventilation, inadequate teaching and learning material as well as few desks. The head teachers were both very confident that most of the teaching and communication that took place in the classroom was done in sign language. The SESO's both emphasized that they encouraged teachers to engage as many classroom communication techniques

as possible. They especially focused on sign language competence of the teachers and use of visual aids during lesson presentation.

The second objective sought to establish availability of teaching and learning material. Findings of the study revealed that learning and teaching materials were not readily available. The learning materials that were available mainly were a few text books which were shared at a ratio of 1:4 (book to pupil ratio). Findings also revealed that learners occasionally used the text books. With regard to vocabulary in the text books, majority of the learners indicated that the vocabulary was hard but the teacher tried to make the work simpler.

The third objective sought to establish whether the classroom environment was supportive of effective classroom communication. Finding of the study revealed that in some ways the classroom was supportive but in other ways, it was not supportive all. All schools reportedly did not have adequate lighting and carpets. Ventilation in one school was good while ventilation in another school was poor. With regard to seating arrangement, majority of the learners could not see the teacher clearly from where they sat. Class sizes were large while classrooms were small. Therefore teachers could not move around in class.

The fourth objective sought to establish how classroom communication affects the academic performance of learners with hearing impairments. Findings of the study revealed that due to poor classroom communication skills, 63% of the learners had performed below the 40% pass mark. For instance, they could not analyse, explain, ask questions during lessons and participate in class activities.

6.2 Conclusion

On the basis of the findings, the study concluded that classroom communication negatively affected the academic performance of learners with hearing impairments. This was due to the fact that most teachers were not trained in sign language. As a result, they were more comfortable with verbal classroom communication than sign language. To the contrary, 94% of the learners were not comfortable with teachers using verbal communication instead they preferred sign language when teaching them. This

discrepancy between teachers and learners classroom communication contributed to learners not asking questions during lessons, participating in class activities and failing to analyze and explain what they were taught. As a result, 63% of the learners academic performance was below 40% pass mark.

6.3 Recommendations

Based on the study findings, the following recommendations were made:

1. The government should strengthen training of special education teachers, particularly those who teach learners with hearing impairments by emphasizing classroom communication.
2. There is need for teacher resource centers and schools to support continuous professional developments seminars and short courses for special education teachers on the education of learners with hearing impairments. This is to enable teachers to come up with more innovative ways of communicating with learners with hearing impairments.
3. Ministry of Education, Science, Vocational and Early Childhood Education should introduce sign language subject for all trainee teachers in all colleges of education and universities.
4. Teachers should engage as many classroom communication techniques as possible
5. The Government should allocate more resources to schools to address the problem of inadequate materials.

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APPENDICES

Appendix 1: Questionnaire for learners with Hearing Impairments

Introduction,

This questionnaire is intended to collect information on the topic: how classroom communication affects the academic performance of learners with hearing impairments. The study is purely academic, hence your confidentiality is guaranteed. Answer the questions as honestly as possible to help us come up with a true reflection on this topic.

INSTRUCTIONS: Answer all questions by ticking your options. Kindly use a black or blue pen

SECTION A: BIO DATA

1. What is your gender? Male [] Female []
2. What is your age? 10-15 years [] 16-20 years [] 21-25 years []
3. What grade are you in? 8 [] 9 [] 10 [] 11 [] 12 []
4. How long have you been at this school? _____ years

SECTION B

(I). Questions related to classroom communication techniques

5. Which classroom communication techniques do you commonly use?

Verbal [] Lip-reading [] Gestures []
Body language [] Facial expressions [] Writing []
Sign language []
Others (please specify) _____

6. Which classroom communication techniques are you most comfortable with?

Verbal [] Lip-reading [] Gestures []
Body language [] Facial expressions [] Writing []
Sign language []

Others (please specify) _____

7. Which classroom communication technique are you not very comfortable with?

Verbal []

Lip-reading []

Gestures []

Body language []

Facial expressions []

Writing []

Sign language []

Others (please specify) _____

8. Which classroom techniques does your teacher commonly use?

Verbal []

Lip-reading []

Gestures []

Body language []

Facial expressions []

Writing []

Sign language []

Others (please specify) _____

(II). Questions related to learning materials

9. Do you have learning materials?

Yes []

No []

9. (b) What type of learning materials do you have?

10. How often do you use text books?

Very often []

Often []

Rarely []

11. How do you find the vocabulary in the text books? Hard []

Not very hard []

Simple []

12. Does the teacher make the work in the text books simpler? Yes [] No []

(III). Questions related to the classroom environment

13. Is there enough lighting in the classroom?

Yes []

No []

14. How is noise kept away from the classroom?

15. Is the classroom well ventilated? Yes [] No []

16. Do you have carpets in the classroom? Yes [] No []

16. (b) What are carpets used for?

17. Are you able to see the teacher clearly from where you sit in class? Yes [] No []

If No, give one reason

(IV). Questions related to how classroom communication affects the academic achievement

18. How is your classroom communication? Poor [] Good []

Very good []

18. (b) provide an example

19. How is your performance in class? Below average [] Average []

Above average []

19. (b) provide a reason

20. Are you able to follow through lessons using the teachers' classroom communication techniques?

Yes [] No [] Sometimes []

20. (b) Provide a reason

21. Does classroom communication affect your academic achievement?

Very much []

Much []

Not very much []

21. (b) Give an example to your response

THANK YOU VERY MUCH FOR YOUR TIME

Appendix 2: interview guide for teachers

Interview guide for teachers on how classroom communication affects the academic performance of learners with hearing impairments

1. How long have you been teaching learners with hearing impairments?
2. What classroom communication techniques do you usually use?
3. Which classroom communication technique are you most comfortable with? Please state your reasons.
4. In your opinion, which classroom communication techniques have you observed to be most effective when teaching learners with hearing impairment?
5. What classroom communication challenges do you face?
6. Do you have readily available teaching materials? Please state your reasons
7. In your opinion, is the classroom environment supportive for effective classroom communication?
8. Has classroom communication affected the academic performance of learners with hearing impairment?
9. What measures would you suggest for enhancing classroom communication?

Thank you for participating in the study.

Appendix 3: interview guide for heads of department

Interview guide for Heads of Department on how classroom communication affects the academic performance of learners with hearing impairments

1. How long have you been the Head of Department?
2. What classroom communication techniques are commonly used in the school?
3. How often do you observe lessons? Please state your reasons
4. Are teaching and learning materials readily available and accessible? Please state your reasons
5. Are the classroom environments supportive of effective classroom communication? Please state your reasons
6. Has classroom communication affected the academic performance of learners with hearing impairment?

Thank you for participating in the study.

Appendix 4: interview guide for head teachers

Interview guide for head teachers on how classroom communication affects the academic performance of learners with hearing impairments

1. What classroom communication techniques are normally used in classrooms for learners with hearing impairments?
2. Are teaching and learning materials readily available and accessible? Please state your reasons
3. Are the classroom environments supportive of effective classroom communication? Please state your reasons
4. Has classroom communication affected the academic performance of learners with hearing impairment?

Thank you for participating in the study.

Appendix 5: interview guide for special education standards officers

Interview guide for Special Education Standards Officers on how classroom communication affects the academic performance of learners with hearing impairments

1. What classroom communication techniques are commonly used in schools for learners with hearing impairment?
2. What classroom communication techniques are pupils most comfortable with?
3. What classroom communication techniques are teachers most comfortable with?
4. What are some of the classroom communication challenges that teachers and pupils commonly face?
5. Do schools have adequate teaching and learning materials? Justify your response
6. Are the classroom environments supportive of effective classroom communication? Give examples
7. Has classroom communication affected the academic performance of learners with hearing impairment?
8. Has classroom communication affected the academic performance of learners with hearing impairment?

Thank you for participating in the study.

Appendix 6: Observational Checklist on how classroom communication affects the academic performance of learners with hearing impairments

SECTION B

1. Classroom communication techniques used in classroom for learners with hearing impairments.

Rate the classroom communication techniques commonly used by learners using the following scale:

Not Demonstrated Needs Improvement Adequately demonstrated

Scale	Item	Observer's comments
	Verbal communication	
	Lip reading	
	Gestures	
	Body language	
	Facial expressions	
	Writing	
	Sign language	
	Others	

Rate the classroom techniques commonly used by the teacher using the following scale:

Highest		Satisfactory		Lowest	Not Applicable
5	4	3	2	1	n/a

Scale	Item	Observer's comments
	Verbal communication	
	Finger spelling	
	Gestures	
	Body language	
	Facial expressions	
	Writing	
	Sign language	
	Others	

(II). Observations related to learning materials

- Did learners have learning materials? Yes [] No []
- (If any) What type of learning materials did learners have?

- How often did learners use text books? Very often [] Often []
Rarely []

- How do learners find the vocabulary in the text books? Hard [] Not very hard [] Simple []

- Did the teacher make the work in the text books simpler? Yes []
No []

(III). Observations related to the classroom environment`

- Is there enough lighting in the classroom? Yes [] No []
- How is noise kept away from the classroom?

- Is the classroom well ventilated? Yes [] No []
- Are there carpets in the classroom? Yes [] No []
- What are carpets used for?

- Are learners able to see the teacher clearly from where they sat? Yes []
No []

(IV). Observations related to how classroom communication affects the academic performance of learners with hearing impairments
