

**CLASSROOM COMMUNICATION TECHNIQUES AND COGNITIVE  
LEARNING OF CHILDREN WITH HEARING IMPAIRMENT IN PRIMARY  
SCHOOLS IN KAMPALA CAPITAL CITY AUTHORITY**

**BY**

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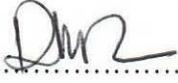
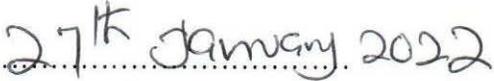
**16/U/13379/GMEC/PE**

**A RESEARCH DISSERTATION SUBMITTED TO KYAMBOGO UNIVERSITY GRADUATE  
SCHOOL IN PARTIAL FULFILMENT FOR THE REQUIREMENTS OF THE AWARD  
OF THE DEGREE OF MASTER OF EDUCATION IN EARLY CHILDHOOD  
EDUCATION OF KYAMBOGO UNIVERSITY**

**MARCH 2021**

### Declaration

I hereby declare that this research dissertation titled “Classroom communication techniques and cognitive learning of children with hearing impairment in lower primary schools in Kampala capital city authority is my original work and has never been submitted to any University for the award of any academic qualification. I am now submitting it to the Graduate School of Kyambogo University with the approval of my supervisors.

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## Approval

We certify that Kisakye David, prepared and wrote this dissertation titled “Classroom communication techniques and cognitive learning of children with hearing impairment in lower primary schools in Kampala Capital City Authority” under our supervision. His work is now ready for submission to Graduate School.

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## **Dedication**

I dedicate this Research Dissertation to my wife Mrs. Agnes Kisakye Nalongo and my children Frank, Damalie, Joshua, Andrew, Miriam and Eunice who stood with me in patience and tolerance during the time I was supposed to be at home with them playing my divine role as a father. I pray that the Almighty God richly bless them for their special support they gave me.

## **Acknowledgements**

My heartfelt thanks go to the Almighty God who gave me life, wisdom, energy and resources to conduct this research.

I extend my sincere thanks to my university supervisors Dr. John S. Maani and Dr. Sr. Evangelista Busingye for their commitment and invaluable guidance. They were patient and tolerant with me as they guided me all the way even at moments when I felt I was not making good progress. It would not be possible to complete this dissertation without their professional guidance and assistance.

I appreciate Associate Professor Godfrey Ejjuu for modeling me throughout this course into a confident ECD specialist

I thank my workmates at All Saints Mutundwe Church of Uganda for understanding that I was on course

I would also extend my sincere thanks to all my lecturers, colleagues especially Mr. Katende William (Ssalongo), and Ms. Nalunga Rose for their professional support.

My last thanks go to Joshua Mugabi and Ms. Sylvia Nakyondwa for typesetting and printing this work.

## **List of Acronyms**

<b>CBM -</b>	Christian Blinded Mission
<b>ECD-</b>	Early Childhood Development
<b>ECE-</b>	Early Childhood Education
<b>GOU-</b>	Government of Uganda
<b>KCCA</b>	Kampala Capital City Authority
<b>MoES-</b>	Ministry of Education and Sports
<b>SNE</b>	Special Needs Education
<b>U.K -</b>	United Kingdom
<b>U.S.A -</b>	United States of America
<b>UNAD</b>	Uganda National Association of the Deaf

## TABLE OF CONTENTS

Declaration .....	i
Approval .....	ii
Dedication.....	iii
Acknowledgements .....	iv
List of Acronyms .....	v
TABLE OF CONTENTS .....	vi
List of Tables .....	xi
Abstract.....	xii
<b>CHAPTER ONE: INTRODUCTION.....</b>	<b>1</b>
1.0 Introduction .....	1
1.1 Background of the study.....	1
1.1.1 Historical Perspective .....	1
1.1.2 Conceptual Perspective .....	4
1.1.3 Theoretical Perspective.....	8
1.1.4 Contextual Perspective .....	9
1.2 Statement of the problem.....	11
1.3 Purpose of the study .....	12
1.4 Objectives of the Study .....	12
1.5 Research Questions .....	12

1.6 Significance of the study .....	12
1.7 Scope of the study .....	13
1.7.1 Geographical scope .....	13
1.7.2 Time scope.....	14
1.7.3 Content scope .....	14
1.8 Limitations and Delimitations .....	14
1.9 Operational Definitions of Terms.....	15
<b>CHAPTER TWO: LITERATURE REVIEW .....</b>	<b>17</b>
2.0 Introduction .....	17
2.1 Overview of the Influence of Classroom Communication on Cognitive Learning of Children with Hearing Impairment.....	17
2.2 Influence of Classroom Communication Techniques on Acquisition of Knowledge by Children with Hearing Impairments .....	20
2.3 Influence of Classroom Communication Techniques on Interpretation of Information by Children with Hearing Impairment.....	24
2.4 The Influence of Classroom Communication Techniques on Application of Knowledge by Children with Hearing Impairment .....	27
<b>CHAPTER THREE: METHODOLOGY .....</b>	<b>29</b>
3.1 Introduction .....	29
3.2 Research Design .....	29

3.3 Location of Study .....	30
3.4 Target Population .....	30
3.5 Sampling Technique and Sample Size .....	30
3.5.1 Sampling Technique.....	30
3.5.2 Sample size.....	31
3.6 Research Instruments.....	31
3.6.1 Interview Guide .....	31
3.6.2 Focus Group Discussions (FGD).....	32
3.6.3 Classroom and Lesson Observation .....	32
3.7 Validity and Reliability .....	33
3.7.1 Validity of Instruments.....	33
3.7.2 Reliability of Instrument.....	33
3.8 Procedure of Data Collection .....	33
3.9 Data Process and Analysis.....	34
3.10 Ethical Considerations.....	34
<b>CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION....</b>	<b>35</b>
4.1 Introduction .....	35
4.2 Demographic characteristics of the respondents .....	35

4.3 The Influence of Classroom Communication Techniques on Acquisition of Knowledge by Children with Hearing Impairment.....	36
4.4 Influence of Classroom Communication Techniques on Interpretation of Information by Children with Hearing Impairment.....	41
4.5 Influence of Classroom Communication Techniques on Application of Knowledge by Children with Hearing Impairment.....	50
<b>CHAPTER FIVE: DISCUSSION CONCLUSION AND RECOMMENDATION .....</b>	<b>58</b>
5.0 Introduction .....	58
5.1 Discussion.....	58
5.1.1 The Influence of Classroom Communication Techniques on Acquisition of Knowledge by Children with Hearing Impairment. ....	58
5.1.2 Influence of Classroom Communication Techniques on Interpretation of Information by Children with Hearing Impairment.....	63
5.1.3 The Influence Of Classroom Communication Techniques On Application Of Knowledge By Children With Hearing Impairment.....	70
5.2 CONCLUSION .....	77
5.2.1 The influence of classroom communication technique on acquisition of knowledge by children with hearing impairments. ....	77
5.2.2 The influence of classroom communication technique on interpretation of knowledge by children with hearing impairment.....	78

5.2.3 The Influence Of Classroom Communication Techniques O Application Of Knowledge Children With Hearing Impairment.....	79
5.3 Recommendations .....	80
5.4 Areas for Further Research.....	81
<b>REFERENCES</b> .....	82
<b>APPENDICES</b> .....	98
APPENDIX I: INTERVIEW GUIDE FOR TEACHERS.....	98
APPENDIX 2 :INTERVIEW GUIDE FOR HEADTEACHERS .....	100
APPENDIX 3: FOCUS GROUP DISCUSSION GUIDE.....	102
APPENDIX 4: LESSON OBSERVATION GUIDE .....	103
APPENDIX 5: SIGN LANGUAGE AND NUMERALS. ....	104
APPENDIX 6: INTRODUCTORY LETTER.....	105

## List of Tables

Table 3.1:	Sample and sample size.....	31
Table 4.1	Bio-data of Respondents.....	37

## **Abstract**

Pupils with hearing impairment can learn and academically perform well if their teachers use effective classroom communication techniques. The purpose of the study was to investigate the influence of classroom communication techniques on cognitive learning of children with hearing impairment in selected primary schools for the deaf in Kampala Capital City Authority. The study was guided by three objectives namely to: investigate the influence of classroom communication techniques on the acquisition of knowledge by children with hearing impairment; examine classroom communication techniques on interpretation of information by children with hearing impairment and to establish the influence of classroom communication techniques on application of knowledge by children with hearing impairment. The total number of participants was thirty of which twenty-seven were teachers teaching in the schools for the deaf. Three respondents were head teachers of the selected schools. An exploratory research design was used to carry out this research. Qualitative data analysis was used to interpret the research findings in the study. The study established that there are many communication techniques that teachers use to teach children to apply content in their lives. The findings further showed that although sign language was the most used communication technique it has challenges associated with teachers' and learners' incompetence in its use. The study further established that teachers' communication techniques enabled learners with hearing impairment to interpret and apply information coming from their teachers. It was recommended that different government departments and agencies put in a lot of effort to empower teachers of children with hearing impairment with effective communication techniques. It is further recommended that head teachers should regularly supervise, mentor and coach their teachers to enable them improve on their communication techniques. More funding for exclusive schools for children with hearing impairment is recommended for purposes of equity and quality education for all.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0 Introduction**

This chapter consists of the background of the study, problem statement, and purpose of the study, study objectives, research questions and significance of the study, theoretical framework, limitations and delimitations.

#### **1.1 Background of the study**

##### **1.1.1 Historical Perspective**

A study carried out by Gallimore, Wesner, Bernheimer, Galtre and Nihira (1993) on 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 cognitive learning methodology from pure oralism to total communication. Despite the changes in cognitive learning 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, Adoyo (2004) suggested that an appropriate language of instruction is the key issue, which must be strongly and urgently addressed.

In Europe the programs for the education of learners with hearing impairments started before 14<sup>th</sup> century and later emerged in the early 19<sup>th</sup> century (Marschark, Shaver, Nagele, Newman and Spencer, 2015). In the United Kingdom (UK), the Education Act of 1993 provided for the establishment of new funding agency to support cognitive learning of learners with hearing impairments in the integrated environment. This was followed by the introduction of the code of practice on identification and assessment of children with special education needs

in 1994. The Disability Act of 2001 was developed and advocates for the establishment of effective partnership between parents and professionals in promoting cognitive learning of learners with hearing impairments (Marschark & Spencer, 2005).

Most countries in East, Central and Southern Africa have been providing some form of special programs to support cognitive learning of learners with hearing impairments (Werth & Sindelar, 2012). In Uganda, the idea of cognitive learning of persons with hearing impairments was conceived in 1958 when the ear, nose and throat surgeon Dr. Peter Rowland launched the Uganda Society for the Deaf. In the same year lip-reading lessons were started at Agha Khan Mosque in old Kampala and at Mengo primary school. Through the efforts of the Uganda Society for the Deaf, a primary school for the deaf was later set up next to Mengo primary school, followed by Ngora Regional School for the Deaf in Ngora district in 1969 with the support of Christian Blinden Mission (CBM) of Germany. The establishment of more schools and units was as a result of Uganda National Association of the Deaf (UNAD) advocacy and awareness work which emphasized the realization of potentials of people who are deaf through education (Eron, 2015).

The political upheavals of Uganda's history in the 1970's and early 1980's affected progress in all education sectors, Special Needs Education (SNE) inclusive. Children with hearing impairment (and other types of impairments) were marginalized (Eron, 2015). In 1989 the Education Policy Review Commission (EPRC) chaired by Prof. W.S Kajubi, recommended that SNE Children be given a lot of attention (MoES, 1989). Subsequently the Government White Paper on Education, 1992, basing on the EPRC Recommendation declared that Government of Uganda was going to put in a lot of effort through democratization of education and relevant policies to uplift the standards of SNE, hearing impairment inclusive (MoES, 1992).

Since 1992 many policies and Acts and Interventions have been put in place to improve the education of children with special needs. Great improvement has been registered in the training of SNE teachers. A Diploma in SNE was started at the then Institute of Teacher Education, Kyambogo (ITEK) in 1988. Later in 1992 Uganda National Institute of Education (UNISE) was established to offer more specialized SNE courses. ITEK remained the awarding institution for some of the UNISE Programmes until 2003 when Kyambogo University took over. Other progresses have been made for example creating responsible officers in different Government agencies and departments for example NCDC Local Governments and MoES Headquarters.

The legal support to special needs education is also traced from the constitution of Uganda (GoU,1995) in its Article 30 which states that all persons have an inherent right to education. Specific national objectives and directives regarding special needs education are spelled out in objective xviii of the constitution of Uganda (1995); that “the state shall take appropriate measures to afford every citizen equal opportunity to attain highest educational standards possible”. Principle xxiv(c) of the constitution of the Republic of Uganda (1995) states that: “The State shall promote the development of a sign language for the deaf”. This provision is not only critical in permitting access to education by learners with disabilities, hearing impairment inclusive, but also alludes to their cognitive learning. Globally, children with hearing impairment are taken care of by SDG4 which puts emphasis on inclusiveness, equality and quality education. The government of Uganda needs to do much more on issues related to children with hearing impairment if Uganda is to achieve the SDG4 (UNESCO, 2015) which states that: *Ensure inclusive, equitable quality education and promote lifelong learning opportunities for all.*

The enrollment of learners with hearing impairment in Uganda has tremendously increased due to awareness and establishment of different schools for the deaf across the country and

the sub-sequent availability of educational opportunities for the deaf. Despite the improvement there are still more than 30% of deaf children not attending school.

The study explored classroom communication techniques and cognitive learning of children with hearing impairment in selected primary schools for the deaf in KCCA. Hearing impairment is a condition of hearing loss ranging from mild, moderate, severe to profound. Of recent, the number of children with hearing impairment has been increasing in KCCA. This has raised a growing concern to provide them with quality education. Empirical studies attempting to examine classroom communication in early childhood classes of children with hearing impairment are rather limited. This has made it imperative for an empirical study especially on how classroom communication techniques can help to enhance cognitive learning of children with hearing impairment. The concern of how best to educate children with hearing impairment has been controversial and emotionally laden with disagreement about what mode of communication is suitable for the cognitive learning of such children (Eron, 2015).

### **1.1.2 Conceptual Perspective**

Hearing impairment is a health condition where a child or an adult can hear some sounds, but very poorly. He or she may not be able to hear someone speaking, even if they are using a normal voice. A child or an adult suffering from such complication may be able to hear only very loud sounds.

The degree of hearing loss can range from mild to profound: Mild Hearing Loss is where a person may hear some speech sounds but soft sounds are hard to hear. Moderate Hearing Loss is when person with a moderate hearing loss may hear almost no speech when another person is talking at a normal level. Hearing Loss is a condition where a person will hear no speech when a person is talking at a normal level and only some loud sounds. Profound

hearing loss is when a person with a profound hearing loss will not hear any speech and only very loud sounds.

Hearing impairment is the loss of the ability to perceive sound in the normal range of hearing. World Health Organization (WHO) defines hearing disability for children (0–14 years of age) as hearing loss greater than 30 dB in the better hearing ear.

Hearing impairment is still a public health issue in Uganda. In one survey conducted in 2014, it was found that the overall prevalence of hearing impairment among babies is 13.2% with geographical differences. The south-western region of Uganda had the lowest prevalence (4.6%), while the East central had the highest (19.8% and 19.2% respectively) (Kikuhe, & Namwagala, 2019)

According to Mayer (2011), Cognitive learning is a change in knowledge attributable to experience and this consists of three components: (1) learning involves a change, (2) the change is in the learner's knowledge, and (3) the cause of the change is the learner's experience. Cognitive learning can be distinguished from behavioral learning on the basis that cognitive learning involves a change in the learner's knowledge whereas behavioral learning involves a change in the learner's behavior. However, a change in knowledge must be inferred from the learner's behavior, so cognitive learning is closely related to behavioral learning.

Cognitive learning is demonstrated through many aspects of competences such as acquisition of knowledge. So, the concern of this research was, among others, to establish how children with hearing impairment can be helped. (Through effective methods) to acquire interpret and apply knowledge.

Deaf children, who have not yet been exposed to sign language and have not yet acquired spoken language, often spontaneously create their own means of gesture communication for

the purpose of self-expression. The phenomenon is known as homesign. 'Homesign' is an ASL term referring to the idiosyncratic gesture systems used by deaf individuals who were reared in isolation from other deaf signers. Therefore, with the ability to communicate properly, deaf children may be in position to acquire knowledge. This largely depends on the communication techniques used in the classroom by the assigned teachers.

Cognitive learning can also help the deaf children to interpret the information they acquire from their teachers. This requires that teachers use methods that encourage learners to think. (Eron, 2015) Use of sign language and writing are some of the medium through which information can be acquired and interpreted by deaf children.

Through cognitive learning, deaf children can be in position to apply the knowledge acquired for example recognizing road signs, reading labels especially at school showing boys and girls toilets among other examples. Children should be able to apply the knowledge they acquire about "relationships" for example in stopping fights among friends (Eron, 2015).

According to Hoy, Parsons and Kovshoff (2018), classroom communication refers to the interaction inside the formal classroom that is initiated by the learners and or the teacher. Teacher-class communication exists when a teacher communicates with his entire class (Kovac & Fur, 2019). Verbal communication exists when a teacher tells children information they need to know. For example, if a teacher asks a student to "stop talking," this is a direct form of verbal communication. There are ways for teachers to communicate nonverbally with their classes, such as through their posture, gesticulations and proximity to the pupils (Kurtz & Silverman 2017). Instead of telling a student to stop talking, a teacher could use nonverbal communication by moving toward the disruptive student's desk. Not only does the disruptive student receive the message, but other students in the class who observe the intervention

receive it as well. Classroom communication can also take place through writing instructions by the teacher for the whole class (Kurtz & Silverman, 2017).

Pupil-teacher communication is also another way of classroom communication that directs communication between a student and the teacher, but this time it is the student who initiates the conversation (Kovac & Fur, 2019). Also, this can occur during whole-class participation. For example, a student who asks a teacher a question during class discussion engages in student/teacher communication because it is a single student communicating with a single teacher. The reason the reverse situation constitutes teacher/class communication and not teacher/student is that the teacher's actions and messages are directed toward the whole class while the student's questions here are only directed at the teacher (Hoy, 2018). When students write emails to their teacher on graded assignments, this constitutes a written form of student/teacher communication (Kovac & Fur, 2019).

Agler and Crigler (2019) noted that cognitive learning of children with hearing impairment in Kampala and the surrounding districts of central Uganda lags far behind that of their peers without impairment at similar ages or grade levels. By high school, about 50% of national sample of children with hearing impairment were performing at a below-basic proficiency level in reading, comprehension and mathematics Almushama, (2016). . Borefoot (2011) showed that, early childhood learners with hearing impairment have consistently trailed behind their hearing counterparts. Education of early childhood learners with hearing impairment in Uganda is not a recent development. However it has not shown significant improvement on the children's academic performance as was expected (Okware & Ngaka 2017). For instance, the pass rate for learners with hearing impairment in schools for the deaf from the year 2012 to 2016 ranged between 11% and 35% (MoEST 2012-2016). This performance is worrisome because; despite the effort put in by the Ministry of Education and

Sports in training teachers to handle learners with hearing impairments there has not been significant improvement.

### **1.1.3 Theoretical Perspective**

The study was underpinned by the Cognitive Learning Theory of Jean Piaget cited by (Astuti, 2018), which states that, when cognitive processes are working normally then acquisition and storage of knowledge works well, but when these cognitive processes are ineffective, learning delays and difficulties can be seen (Levine, 1975). These cognitive processes are: attention, perception, memory, language, learning and higher reasoning. Learning involves acquiring knowledge through experience, studying and being taught. The first step in cognitive learning is paying attention. Cognition is the process of acquiring knowledge through thoughts, opinions and senses. Information cannot be learnt if the learner is disrupted. This theory stresses that cognitive learning strategies reflected compensation for hearing loss (Tzuriel, 2018). Therefore, since hearing plays an important role in the child's cognitive learning process, teachers have to ensure that they use the appropriate techniques that can be used to teach learners. The theory enabled the researcher to assess how teachers use the cognitive learning framework to help children with hearing impairment to learn through their technical skills and use of instruction materials to facilitate cognitive learning in Early Childhood classes of selected schools in Kampala Capital City Authority. It also tackled classroom communication techniques, use of instruction materials and other factors which can promote cognitive learning of children with hearing impairment. The theory provided the basis on which the researcher found what transpires during the cognitive learning process at early childhood level particularly focusing at education of children with hearing impairment.

#### **1.1.4 Contextual Perspective**

According to Brydges, (2018), there were 1,190 children with hearing impairment enrolled in schools all over Uganda and the number keeps on rising. This poses a major challenge especially to the teachers taking care of these children. Okware and Ngaka (2017) stipulated that government should pursue an inclusive primary policy which accommodates regular children with special needs children. This has posed a great challenge especially to teachers who are not fully trained to handle children with disabilities. The situation is not much better in schools designated for children with hearing impairment, that is special schools for the deaf, where special facilities and well trained teachers are expected. The assumption that teachers in exclusive schools for children with hearing impairment are experts and competent on the required Methodologies may not be correct (Eron , 2015). This is the reason why this study was conducted to investigate the influence of classroom communication techniques on the cognitive learning of children with hearing impairment in selected Primary Schools in KCCA specifically for deaf children.

Among KCCA primary schools, there are special schools for the deaf. These schools have many learners with hearing impairment. Efforts to communicate to them and help them develop their cognitive learning have been made. Teachers were taken through a series of refresher courses on how to communicate and teach those learners. Most of the teachers teaching in the schools for the deaf are somehow versed with sign language but the ability to use this skill is another matter. The teachers endeavor to teach the learners with hearing impairment. They develop and use suitable learning materials to help those learners learn.

The school learning environment of these schools like many other schools in the city is not very conducive for learning. In their neighbourhoods are busy roads with a lot of noise from passing vehicles. A lot of noise also comes from different economic activities nearby such as

welding, carpentry construction markets activities. These activities interrupt and distract the teachers and children who are not profoundly deaf. Those that are visible (through windows) may divert children's attention to the teacher. Therefore, teachers have to compete with such external noises to attract the attention of the children and this slows the children's cognitive learning process.

The learners are kept in special schools because they need specially trained teachers who can give them special attention. Despite all these attempts, the learners have not achieved much academically. Almost all of them are academically below average. They cannot compete favorably with their counter parts with partial and normal hearing. The use of sign language and gestures is still a challenge to most of the teachers teaching in schools for the deaf. Sign language is not a homogenous language (Neiva & Zanchettin, 2018). Teachers may defer on how to present new vocabularies and events to learners with hearing impairment and therefore hinder their cognitive development. Although they communicate, pupils tend not to understand them. Signing letters, words, sentences and numbers is still a challenge to most teachers. This has left a big gap in classroom communication in schools for the deaf in KCCA. It is because of this background that the researcher intended to investigate the influence of classroom communication techniques on cognitive learning of children with hearing impairment in selected primary schools for the deaf in KCCA.

## **1.2 Statement of the problem**

When classroom techniques are used effectively, young children with hearing impairment learn like any other children without hearing impairment. They are able to read words, write sentences, interpret pictures and understand both local and the English languages. Children are expected to spell words and use words to communicate at a level appropriate to their age. Teachers' use of effective classroom communication techniques helps children to acquire interpret and apply knowledge to different life situations (Eron 2015). Teachers under favorable conditions use appropriate teaching methods or techniques that help the hearing-impaired children to compete favorably with others. These teachers are able to develop appropriate learning aids to help in the teaching of hearing-impaired children. They possess teaching techniques to use for example sign language, and use of gestures to communicate to children.

However, many teachers handling children with hearing are not using effective classroom communication techniques and therefore the reason why these children lag behind their normal counterparts in cognitive learning (Malunga, 2007). Some of the teachers lack competence in sign language and rely on traditional methods of teaching children with hearing impairment. (Eron, 2015). This largely explains why 60% of children in these schools pass in the 4<sup>th</sup> grade at Primary Leaving Examinations

Although government is doing a lot to improve more on special needs education, including education of children with hearing impairment, a lot more research evidenced interventions should be done especially on the underlying causes and possible solutions related to cognitive learning for children with hearing impairment. This justified the need for a research study with special reference to KCCA primary schools young children with hearing impairment.

### **1.3 Purpose of the study**

The purpose of the study was to investigate the influence of classroom communication techniques on cognitive learning of young children with hearing impairment in selected primary schools for the deaf in KCCA.

### **1.4 Objectives of the Study**

The specific objectives of the study were to:

- i. Investigate the influence of classroom communication techniques used by teachers on acquisition of knowledge by children with hearing impairment.
- ii. Explore the influence of classroom communication techniques on interpretation of information by children with hearing impairment.
- iii. Find out how classroom communication techniques influence the application of knowledge by children with hearing impairment.

### **1.5 Research Questions**

- i. How do classroom communication techniques used by teacher influence acquisition of knowledge by children with hearing impairments?
- ii. What is the influence of classroom communication techniques used by teachers on interpretation of information by children with hearing impairment?
- iii. How do teachers' classroom communication techniques influence application of knowledge by children with hearing impairments?

### **1.6 Significance of the study**

The study will support the different stakeholders eg MOES, Agencies, NGOs & FBOs engaged in policy making and interventions that can promote the cognitive learning of children with hearing impairment.

This study will enable the primary school administrators to identify the gaps in classroom communication techniques of their teachers and then address them through support supervision.

The study will be beneficial to the lower primary school teachers in that they will improve on their classroom communication techniques. This will in turn assist the pupils with hearing impairment to understanding more of the messages the teachers give.

The inspectorate will use the information to monitor and supervise the lower primary school teachers on how they deliver lessons to learners with hearing impairment in primary schools.

The Ministry of Education and Sports and its relevant Departments and Institutions will use this study findings to improve on the training of its teachers for Special Needs Education especially on hearing impairment with respect to young children (ECD). The integration of SNE and ECD principles and practice will be boosted by this research.

## **1.7 Scope of the study**

The scope of the study stipulates the geographical specifications of the study, the time within which the study could be valid and the context in which the study could be conducted.

### **1.7.1 Geographical scope**

The study area consisted of three primary schools for the deaf located in KCCA. Kampala is the capital and largest city of Uganda with a population of 1,353,189 (2019). It is located in central Uganda at 0°19'N 32°35'E, at 3,900 ft (1,189 m) above sea level. Kampala is popularly known as the city on many hills because it extends over twenty-two hills. This geographical scope was selected because its where there are schools with high population of children with hearing impairment.

### **1.7.2 Time scope**

The research considered the period from 1990-2020 because this was the time when the issue of hearing impairment was investigated very much by different researchers. This is also the period where most policy documents hinted on education of learners with impairments for example the 1992 Government White Paper on education, the 1995 constitution, the 2007 ECD policy and the 2008 Education Act. It is in the same period that in 2015 when UNESCO came up with SDG4. This goal is important for children with hearing impairment because it stresses inclusive and equitable quality education for all (UNESCO). From 2018, the researcher carried out preliminary investigations, test research instruments, collect data from the field, analyze data and compiled dissertation.

### **1.7.3 Content scope**

The fundamental reason for the study was to investigate classroom communication techniques and cognitive learning of children with hearing impairment in selected Primary Schools for the deaf in KCCA. Specifically, the study aimed at investigating the influence of classroom communication techniques on acquisition of knowledge, interpretation of information and application of knowledge by children with hearing impairment. In a nutshell the core message of the study was on how teachers' communication techniques affect the learning of children with impairment.

### **1.8 Limitations and Delimitations**

The study faced challenges of some respondents failing to respond to some questions or failing to attend interview meetings during the data collection period. The fact that the study was undertaken within business hours, the researcher faced the timing of respondents as a challenge because there was no time convenient to everyone. Respondents were involved in their day-to-day activities thus, sparing time for an interview and Focus Group Discussion

was regarded as an inconvenience and interruption of one's working schedule. However, the researcher solved this by being polite and humble and seeking for respondent's attention and audience in this regard. By so doing the researcher was able to proceed with his study, explaining to the respondents why one's responses to the study were vital. They were convinced to accept that sparing some little time to participate in the study is important and desirable. In cases of schedules which were not adjustable, appointments were made for an appropriate time, lunch time inclusive. At first teachers felt uneasy about having the researcher attend their lesson presentations. However, after assuring them of the confidentiality and harmlessness of the lesson observation the teachers readily accepted the researcher in their classrooms. The study was restricted to issues related to children with only hearing impairment for purposes of a more focused study.

### **1.9 Operational Definitions of Terms.**

**Children:** in this study, it is the learners who are in p1-p3 classes.

**Classroom communication:** This refers to the interaction inside the formal classroom that is initiated by the learners and or the teacher.

**Cognitive learning:** Is a type of learning which is active, constructive and long lasting. It engages learners in the learning process, teaching them to use their brains more effectively to make connections when learning new things.

**Communication Technique:** Is a systematic procedure of interacting inside the formal classroom that is initiated by the learners or the teacher.

**Early Childhood Education (ECE):** is a branch of education that relates to the teaching of young children (formally and informally) up until the age of eight years

**Facial Expression** is one or more motions or positions of the muscles beneath the skin of the face

**Hearing impairment:** means a condition where an individual or a child can hear some sounds, but very poorly. They may not be able to hear someone speaking, even if they are using a normal voice. However, such an individual may be able to hear only very loud sounds.

**Information interpretation** refers to the implementation of processes through which information is reviewed for the purpose of arriving at an informed conclusion.

The interpretation of data assigns a meaning to the information analyzed and determines its signification and implications

**Knowledge acquisition;** is the process of extracting, structuring and organizing knowledge from a given source, usually human experts, so that it can be used in the situations where it is needed.

**Knowledge application** is when one uses the knowledge one has acquired to make decisions and perform tasks that require that knowledge.

**Lip-reading** is the reading or understanding, as by a deaf person, of spoken words from the movements of another's lips without hearing the sounds made.

**Sign Language:** is a visual language expressed by hands, arms and eye movement. It is a language for persons with hearing impairment.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

This chapter reviews literature related to classroom Communication and Cognitive learning in general followed by literature review related to each of the three objectives of the study which were : Investigate the influence of classroom communication techniques used by teachers on acquisition of knowledge by children with hearing impairment, explore the influence of classroom communication techniques on interpretation of information by children with hearing impairment and assess the influence of classroom communication techniques on application of knowledge by children with hearing impairment.

#### **2.1 Overview of the Influence of Classroom Communication on Cognitive Learning of Children with Hearing Impairment.**

Learning is a product not only of the child's intelligence quotient (IQ), his/her interest (motivation) but also his/her teacher's communication techniques. The way teachers communicate means a lot to the pupils learning' (Atwoli et al. 2007)

Buscemi, & Pharr, (2005) in a study carried out in New York reported that classroom communication was on using a suitable language to convey and decode ideas or meanings, to exchange views, explain processes or demonstrate skills. Other scholars define classroom communication as a transaction in a classroom where everybody in the room can initiate and or receive the messages being handled. Therefore, an effective teaching method also gives learners an opportunity to communicate (Atwoli et al, 2007)

According to Butt and Shafiq (2017) classroom communication is important for transmitting, imparting and sharing information or knowledge to and with the learners. The communication process is vital to effective cognitive learning within a classroom

environment (Powell, 2009). Good classroom instructions can produce positive results especially to children with hearing impairment by communicating to them using both verbal and nonverbal cues, involving them into team communication among others. In support of Maina and Daful (2017), Khamah, (2018) 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, and exhibited level of competency on some type of standardized test. Additional identifiers according to Khama (2018) of learner performance included organizational participation, leadership activities, and good behavior or conduct.

According to Gokalp, (2016), regardless of teaching pedagogy, philosophy, or classroom management style, effective communication was fundamental to the instructional process. Academic development, therefore, was the demonstration of cognitive 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 can solely promote the cognitive learning of these children. More still Boyce, (2017) suggested that oralism, total communication and American Sign Language reveal a shared characteristic of learner diversity in academic, cognitive, and communication needs. Bambaerero, and Shokrpour (2017) 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. Therefore, when classroom communication is effective, the cognitive learning improves as reflected in the academic performance of the year.

Furthermore, Ahmad, Ching, Yahaya and Abdullah, (2015), suggested that hearing contributes greatly to understanding especially in a world where verbal communication

dominates. Aliyu, (2017) in a study carried out in Canada found that hearing stimulated thinking. Aliyo continued to observe that the brain developed in quality as enough oral stimulation is given. Atibuni, Kibanja, Olema, Ssenyonga and Karl (2017) 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.

According to Bilavsky, (2016), there is no universal definition of hearing impairment as both the hearing loss level can differ from person to person. However, a degree of hearing loss of a person 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 prevents a child from totally receiving sounds through the ear*. If the loss was mild the person had difficulty hearing faint or distant sounds. A person with this degree of hearing loss used a hearing aid to amplify sounds. If the hearing loss was severe, the person was not able to distinguish any sound.

Barefoot, Brummett, Williams, Siegler, Helms, Boyle and Mark (2011) also found out those learners with hearing impairments value learning with their communication strength 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 impairment 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. Therefore, this affects their academic performance in such a way that based on available figures, less than 1% of hearing impaired children in developing countries have access to any form of education.

## **2.2 Influence of Classroom Communication Techniques on Acquisition of Knowledge by Children with Hearing Impairments**

One of the ways classroom communication techniques can improve the cognitive learning of children with hearing impairment is to help them acquire knowledge as prescribed by their Curriculum. A study carried out in Zambia by Malunga (2007) found that many learners in classes with hearing impairments were not identified as having the impairment by their teachers. Basically, the teachers did not have any knowledge on hearing impairment and even on the knowledge of assistive devices which help learners to hear. These learners were subjected to being called dull because of their poor acquisition of knowledge in class. Regular teachers did not have the sign language skills or oral language skills necessary to teach learners with hearing impairments.

Ting-Toomey and Dorjee (2018) 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 et al, (2011) also found that learners with hearing impairments value Cognitive learning with their communication strengths such as access to visual information, opportunity to use their residual hearing and use of their strongest language. Similarly, Marschark, et al (2015) reported that learners with hearing impairments must have a firm concept of and foundation in language so that they can acquire knowledge during the teaching and learning process. The greatest disadvantage which hearing loss places on individuals was the deprivation of communication opportunities.

Aliyu, (2017) in a study carried out in Nigeria reported that much of cognitive learning and information transmission were done orally. Maina and Daful (2017) 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 for learners to acquire knowledge.

Findings by Kawas, Karalis, Wen and Ladner (2016) in their study in New York showed that oral language was used to teach learners with hearing impairments because it was a universal agreement among educators of cognitive 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 information and use it in their communication.

Albasha & David (2019) in his study on effective cognitive learning carried out in the United States of America found that various school-related factors such as behaviour expatriation, 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.

Educators according to Rekkedal (2015), were aware of the unrivaled importance of oral language in cognitive learning processes. He further adds that oral communication facilitated meaningful teacher-learner interactions than any other form of communication. This made cognitive learning more readily mediated than writing, signing, gesticulating, pantomiming or whatever medium.

In Uganda, Kigenyi, Kakuru and Ziwa (2017) in a study carried out in Wakiso District reported that there were two basic modes of communication that were used for educating children 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.

Kineman, (2016) stated in his study that nonverbal communication is also another technique that can be used on children with hearing impairment. He argued in his study carried out in the United States of America that a substantial portion of our communication was nonverbal. Non-verbal communication included an exchange of information without the exchange of spoken words (Twoli et al, 2007). Often, information is communicated in nonverbal ways using a group of different nonverbal communication techniques. For instance, a smile can be combined 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 Mandal, (2014).

Ocak (2019) 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 non-verbal 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 by Boyce, (2017) 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 don't understand what the teacher is teaching 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 Vinen Clark , Paynter and Dissanayake (2018) 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 leading to inadequate acquisition of knowledge. Acquisition of knowledge by children with hearing impairment is hampered by many factors; some of them attributed to teachers' ineffective communication techniques and skills (Eron, 2015)

According to an observation by Leigh and Crowe (2015), the Cognitive learning framework for early child education is rigid and therefore difficult for the children to go through hence teachers are not able to complete the syllabus and yet the same children are expected to join the same national primary education. Teachers' expectations on learners with hearing impairment are another challenge because rigid educational curricular and approaches are not conducive to learners who are hearing impaired. Competitive aspect in the education system whereby the learners with hearing impairment compete with the hearing peers poses another challenge (Kalya, 2020). Lack of community involvement that is inability to socially interact with children who are hearing impaired weakens the children's performance (Alhuzail & Levinger 2018). This is made worse by insufficient human and material resources. Also, the late starters within the school become a challenge since they are much older than the average age of the class (Pareek & Rao 2015).

Making of cognitive learning materials and teaching resources is a challenge since teachers need expertise which they do not have and money, which sometimes is hard to come by (Atwoli, 2014, April).. Sometimes teachers face challenges when they teach new concepts and abstract words, which have no signs, names or words for them. This can be evidenced in the teaching of social studies, religious education and science (Ahmad, et al 2015).

According to Lee, (2015), there is always a communication breakdown between the teacher and the learners. The controversy has continued for a long time and now with the emergence of pure different country sign languages, the confusion will be more due to variation of Sign Languages that is Ugandan, Kenyan , American and British and others..

According to Ahmad, et al (2015), intervention should include English language, American Sign Language and total communication approach containing spoken English and Ugandan Sign Language. It is important for parents with hearing impaired children to act as models. Regular schools where children who are deaf and hearing impaired are enrolled will need increased funding to allow them to access quality education.

Leigh and Crowe (2015) says that professionals are better motivated by being provided with challenging projects, rewarding them with education opportunities like workshops, trainings and attending conferences that allow them to keep current in their field.

The communication techniques discussed were used by teachers to help children with hearing impairment acquire knowledge in USA , Ghana, Nigeria, and Zambia. These contexts are different from those of Uganda where government policies are different and teacher motivation and school facilities are inadequate and therefore the justification for this study.

### **2.3 Influence of Classroom Communication Techniques on Interpretation of Information by Children with Hearing Impairment**

This study was also interested in literature concerning the influence of classroom techniques on interpretation of information by children with hearing impairment as per the second objective of the study. According to Banja, (2018), there are several techniques used by teachers to help children with hearing impairment. A study carried out by the Vinen, et al (2018) Titled teaching learners with Hearing Impairments in the United Kingdom highlighted that to some extent many learners with hearing impairments relied on lip reading to acquire

and interpret information despite being aware that only about 30% of words could be lip read clearly. In addition, not all people with hearing impairment could interpret information through lip reading.

The other nonverbal classroom communication technique was facial expressions. In a study carried out in New Jersey by Neill, (2017), it was found that facial expressions was very important in interpreting information and was 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 give the context in which the message was delivered. In addition, facial expressions for happiness, sadness, anger and fear was similar throughout the world (Sato et al, 2019).

Another non-verbal classroom communication technique was the use of gestures. These include, deliberate movements and signals. (Bunglowala & Bungtowala 2015) carried out a study 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 a teacher points his fingers in a certain direction, learners with hearing impairments quickly interprets the meaning.

Other nonverbal classroom communication techniques include finger spelling and sign language. A study carried out in New York by Bambaeroo & Shokrpour (2017) defined sign language as a visual language expressed by hands, arms and eye movement. It is a language used by people with hearing impairment to interpret verbal information. Sign language was the only language that a person with hearing impairment could use by others to interpret information.

Bambaeroo and Shokrpour (2017) 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 Husna, Ratna, Begum, Dey and Hossain, (2015) 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.

Sutiyatno, (2018) 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.

Another communication technique like writing was researched on by Kinckman, (2016). His study carried out in Nigeria revealed that classroom communication and placement of learners with hearing impairment in an inclusive class was important taking into consideration the fact that learners with hearing impairments had varying degrees of understanding. 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.

Kamonya, (2008) reviewed and examined issues and guidelines underlying the classroom communication techniques with interpretation of information by children with hearing impairment as brought out by various researchers. The reviews had vividly captured gaps

existing concerning communication in schools for learners with hearing impairment. Previous studies that were conducted dwelt on factors hindering effective teaching and learning activities for learners with HI (Kamonya, 2008) and effects of sign language as mode of instruction, and acquisition of English affixes by learners with hearing impairment from two learners (Wamae, 2003). For the case of Uganda, the classroom communication techniques do not adequately help children with hearing impairment achieve their academic potential (Aggarwal, 2015).

#### **2.4 The Influence of Classroom Communication Techniques on Application of Knowledge by Children with Hearing Impairment**

Classroom communication techniques can help children with hearing impairment to apply knowledge in different situation as discussed below;

Marschark et al (2006) posits that although most learners with normal hearing rely on speech to communicate with others, learners with hearing impairments mainly apply sign language and a range of other communication techniques to interpret information. For example, students with hearing impairments whose teachers use good classroom communication techniques apply some form of signed communication, lip reading, or assistive technologies, such as hearing aids, cochlear implants (CI) and communication boards to communicate with others.

Sign language has become the accepted language of communication for learners with hearing impairment. This is supported by Butt and Shafiq, (2017), who in a study titled *communication practices in special education: oral, manual and others*, found that this choice (of sign language) 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 but the major way out for children with hearing impairment was remains the sign language.

According to Butt and Shafiq (2017) a sign language was a nonverbal form of communication. It was also a non-speech form type of language and therefore, it was not very effective in interpreting information. The last other nonverbal classroom communication technique was eye gaze. Looking, staring and blinking were important nonverbal behaviours. This showed 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.

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 dependent on a number of factors, such as the level of hearing loss and which techniques they were most comfortable with. Many researchers have not gone into details on how far learners apply the knowledge they acquire from their teachers for example on hygiene and how this is dependent on teachers' communication techniques and therefore the justification for this research

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This Chapter presents the Methodology that was used to guide the Study. It includes research, design, location of the study, target population, sample size and sampling techniques, data collection Methods and instruments, data quality, control, data collection procedure, data processing and analysis. Ethical considerations during the study are also presented.

#### **3.2 Research Design**

The Study used an exploratory design to collect data on the influence of communication techniques on Cognitive learning of children with hearing impairment. This design is advantageous because it enables one to understand the phenomenon better unearthing as much background as possible with the help of what, why and how questions (Barbie, 2010, <https://www.library.scaredheart.edu> (accessed 5/2/2021)). The other advantage of the exploratory design is that it ventures into areas neglected by many scholars for example integrating ECD and SNE issues in one study and therefore has potential to make new discoveries of knowledge

This Study followed a qualitative approach in collecting, analyzing and presentation of data related to teaching of young children with severe hearing impairment. Qualitative approach was preferred because it helps to understand better the feelings, opinions, views and practices of the respondents in relation to the phenomenon being studied (Kombo, & Tromp, 2006)

The qualitative data was collected using interviews, Focus Group Discussions, Observation guide and documentary analysis

### **3.3 Location of Study**

The location of Study was Kampala Capital City Authority (KCCA). Kampala is the Capital and Largest City of Uganda; with a population of 1,353,189 (Abiyinza, 2019). It is located in Central Uganda at 0°19'N 32°35'E at 3,900H (1,189m) above sea level, close to the northern shores of the City on many hills. Three schools for the deaf located within KCCA participated in the Study.

### **3.4 Target Population**

The targeted population of the study was 35 respondents in three schools for the deaf located in KCCA . The three schools were selected because they should be able to set pace for teachers teaching children with hearing impairment in inclusive schools. The study consisted of 32 teachers and 3 head teachers. The 32 teachers from schools were found to be enough for a qualitative study (Barbie, 2010). Only lower Primary teachers were involved in the study because the researcher wanted to get views on how ECD teachers teach children with hearing impairment in the ECD section.

### **3.5 Sampling Technique and Sample Size**

#### **3.5.1 Sampling Technique**

There are many schools in Kampala that admit deaf children especially in the lower primary classes however, not all of the deaf children attending these schools can be characterized as severely deaf. Therefore, the researcher purposively sampled three schools that had admitted children with hearing impairment and decided to sample them. The head teachers from these schools were selected using purposive sampling because in each school there was only one head teacher; The ECD (P1-P3) teachers were also selected purposively because they were more concerned with teaching the infants.

### 3.5.2 Sample size

The study was conducted using a sample size of 30 respondents. The sample size was selected using convenient sampling. This included three head teachers (one from each of the three schools) and twenty- seven teachers (9 from each of the three schools). Twenty-seven teachers of P1-P3 were involved because these classes (P1-P3) fall within the ECD bracket (Tamusuza, 2011).

**Table 3.1: Sample and sample size**

<b>Category</b>	<b>Population</b>	<b>Sample size</b>	<b>Method of sampling</b>
P1-P3 Teachers	40	27 (P.1-P.3 Teachers)	Purposive
Head teachers	3	3	Purposive
<b>Total</b>	<b>35</b>	<b>30</b>	

**Source: Primary Data, 2019**

### 3.6 Research Instruments.

The researcher employed several research instruments to collect information and these included;

#### 3.6.1 Interview Guide

An interview guide was used in collecting data from teachers on communication In-depth techniques suitable for teaching children with hearing impairment. Structured interviews with a set of pre - determined questions with room for more probing and improperful questions were carried out with selected P.1 – P.3 teachers. This method had an advantage of providing in depth data on oral and non-verbal communication by the interviewees (Mugenda & Mugenda, 2003), Amin, 2005. The responses from the respondents were transcribed then analyzed into themes from which conclusions were derived.

### **3.6.2 Focus Group Discussions (FGD)**

Focus group discussions (FGDs), are also called “group interviewing” (Babbie, 2010: 322).

FGDs are used by researchers to elicit ideas from people who have similar or common background and experiences (Mugenda & Mugenda, 2003; Amin, 2005) FGDs enable the researcher to gather valuable information because the focus group members brainstorm on the issues the researcher is interested in (Amin, 2005). In a focus group discussion those who are shy or have forgotten certain ideas are also motivated to contribute (Best & Kahn, 1993).

FGDs have many more advantages according to Babbie (2010). They capture real-life data in a social environment. From FGDs a researcher gets more relevant information than he/she had anticipated.

### **3.6.3 Classroom and Lesson Observation**

There was an observation guide to help the researcher observe the communication techniques used to teach P.1 – P.3 children with hearing impairment. The instrument had four sections that is, how pupils respond and how the teacher assessed his own lesson. Observation involves examining and recording what is happening in a real life situation (Amin, 2005).

This instrument was used for data collection because it provided first hand and rich information (Barbie, 2010; Holloway, 1997). “To yield rich data, a qualitative researcher may therefore use indepth interviews, focus group discussions and observations” Mugenda & Mugenda 2003-P.203.

Post-lesson conferences (interviews) were held to ascertain and solicit for more views on communication techniques and cognitive learning of children with hearing impairment.

### **3.7 Validity and Reliability**

#### **3.7.1 Validity of Instruments**

A panel of experts was used to ensure the face and content validity of the instruments. The questions found vague were eliminated or rephrased. Any ambiguities, misunderstanding and inadequacies were eliminated (Amin, 2005). With regard to face validity, the words used in the instruments were simple, clear and related to the research problem.

With regard to content validity, the researcher ensured that he uses constructivism approach to validate multiple realities that people have in their minds about how classroom communication techniques can improve cognitive learning of children with hearing impairment. Therefore, to acquire valid and reliable multiple and diverse realities, interviews were carried out by the researcher in order to gather the necessary data that was needed which led to more valid, reliable and diverse construction of realities.

#### **3.7.2 Reliability of Instrument**

Mugenda & Mugenda, 1999; Barbbie, 2010) define reliability as the extent to which measure of a construct is consistent and dependable. To ensure reliability, the researcher employed a method of piloting the instruments as a crucial approach when examining respondents. The same instruments were administered to the same teachers in other schools that is, those not involved in this study with a three weeks interval between the tests. Analysis of the two sets of response showed that the instruments were reliable

### **3.8 Procedure of Data Collection**

With an introductory letter from Kyambogo University the researcher approached Headteachers of the special schools for children with learning impairment to get permission to carry out research in their schools. Interviews were carried out with Head teachers and P.1 – P.3 teachers in each of the three participating schools. Focus Group Discussions and lesson

observations in P.2, P.2 and P.3 in each school were also used to collect data on teachers' Communication techniques versus the cognitive learning of children with hearing impairment.

### **3.9 Data Process and Analysis**

For qualitative research "Data analysis is the process of bringing order, structure and meaning to the mass of information collected" (Mugenda & Mugenda, 1999). It actually begins from the time of data collection (Hollooway, 1997). Notes from transcribed interviews, FGDs and lesson observations were cleaned up and categorized according to emerging themes related to the objectives of the study. Codes were used to identify themes and categories. More analysis was done to establish how different teachers communication techniques contribute to the cognitive learning of children with impairment. Data obtained through interviews, FGDs and observations were triangulated to ensure the reliability of the information presented in this report. According to Heal and Forbes (2013) the use of two or more measures to confirm findings increase confidence in the rigor and trust worthiness of a qualitative research.

### **3.10 Ethical Considerations**

The researcher adhered to the ethics of conducting a research study as explained by Barbie (2010). Respondents' informed consent was sought well in advance before the study was carried out. This was done by explaining to them what the stud was about. Respondents were also assured that the information they would give would strictly be used for academic purposes. Respondents were told not to indicate their name anywhere and therefore remain anonymous. They were also told that they had the right not to answer questions unanswered if they didn't wish to offer any response and that the researcher would not pressurize or blame the respondent where such a case arose. The permission to interact with P.1 – P.3 teachers and to observe their lessons was granted by Headteachers after the researcher introduced himself with the help of an introductory letter from Kyambogo University.

## CHAPTER FOUR

### DATA PRESENTATION, ANALYSIS AND INTERPRETATION

#### 4.1 Introduction

This chapter includes presentation, analysis and interpretation of the study. The data which is qualitative in nature was obtained through methods of data collection, namely in-depth interview, focus group discussion (FGD) and lesson observation. The chapter begins with the demographic characteristics of the respondents because teachers performance does not only depend on their training but who they are. For purposes of anonymity the schools used will be referred to as A, B and C and teachers in those schools will be referred to by the codes such as T1A, T2B to mean Teacher 1 in school A or Teacher 2 in school B respectively.

#### 4.2 Demographic characteristics of the respondents

The respondents of this study were the Headteachers of primary schools for the deaf serving in Kampala District and teachers serving in those schools.

**Table 4.1 Bio data of the respondents**

Characteristics	Category	Frequency	Percentage	Total
Sex	Male	3	10	100%
	Female	27	90	
Education level	Certificate	18	60	100%
	Diploma	6	20	
	Degree	1	3.3	
	Post graduate	3	10	
	Others	2	6.6	
Age	Below 18 years	4	13.8	100%
	19-24 years	10	33.3	
	25-30 years	5	18.9	
	31-36 years	11	34	
Teaching experience	Less than one year	4	15.3	100%
	1-3 years	10	31.4	
	Above3 years	16	53.4	
Teacher payment	Pay roll	23	76.7	100%
	Private	7	23.3	

Source: Primary data, 2019

Table 4.1 shows that teachers of schools for the deaf are mainly female. The majority (90%) of the respondents who participated in the study were female. Majority of the respondents (34%) were in the age category of 31-36 years. This shows that majority of the respondents were mature and were able to answer the questions asked. The results further show that (33.3%) of the respondents were in the age category of 19-24 while (18.9%) of them were in the age bracket 25-30 years. This result further indicates that the researcher was able to get information from knowledgeable and mature respondents. Table 4.1 further shows that (53.4%) of the respondents had experience in teaching children with severe hearing impairment in primary schools of the deaf. These findings indicate that majority of the respondents have knowledge and skills regarding the topic under study. The Table also shows that only (15.3%) of the respondents have taught children with severe hearing impairment for only less than one year. Majority (60%) of the respondents had attained a certificate in teaching children with severe hearing impairment. Only (3.3%) of the respondents had attained a degree. This result indicates that most of the respondents had received some level of training regarding children with severe hearing impairment. Table 4.1 also reveals that majority (76.7) of the teaching staff is on pay roll while minority (23.3) of the teachers are on private teaching. This result indicates that majority of the teachers are paid for doing their work so they are expected to do it well.

#### **4.3 The Influence of Classroom Communication Techniques on Acquisition of Knowledge by Children with Hearing Impairment.**

The data for this objective was intended first to establish the different communication techniques at the disposal of the teachers of children with hearing impairment and how such techniques influenced pupil's acquisition of knowledge. For purposes of triangulation three different methods of data collection were used, that is, interviews, FGD and lesson observation.

The communication techniques, according to the respondents, used to help children with hearing impairment among others, included the following; sign language, finger spelling, facial expressions, gestures writing and verbal communication. T2A elaborated on the communication techniques by saying.

The list is not exhaustive. A teacher may create several signals or use his /her body to demonstrate appoint, as long as all children get the message. The only limitation with this technique is children who are also visually impaired.

When challenged on how verbal communication is a technique for children with hearing impairment TC4 responded this way:

Some children are partially deaf. They can pick some verbal messages if the teachers talks loudly or when they put hearing aids in their ears .A teacher must be conversant with the degree of impairment of each child so as to determine the techniques to use and appropriate seating arrangement in the classroom.

The variety of communication techniques used by teachers of children with hearing impairment was observed during the teachers' lesson presentations. In any one lesson a teacher would use sign language, gestures and facial expressions. Children would be encouraged to physically look at the teacher so as to benefit from several concurrent techniques such as sign language, facial expressions and lip –reading as elaborated by T6C

No one method is adequate to help children understand. I used several of them because children vary in abilities and interest.

If a child misses a point because of an unfamiliar sign language action /symbol then he/she may get it through

another technique being used concurrently, for example gestures. A teacher must therefore be not only conversant with put implement different communication techniques.

The head teachers were conversant with types of communication techniques their teachers use to teach children with hearing impairment. 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 confirmed that most of the teaching and communication that takes place in the classroom is done in sign language because according to them, it was the best communication technique understandable to learners with hearing impairment.

Teachers varied greatly in their assessment of how different communication techniques help children with hearing impairment to acquire knowledge. The most teachers singled out sign language as the most frequently used communication technique. This was supported by one of the head teachers who said.

Most of the teaching and communication that takes place in the classroom is done in sign language because it is the best communication technique understandable to learners with hearing impairment.

In a class where both the teacher and pupils are conversant with a sign language the preferred communication technique is the sign language. According to one teacher in an FGD “More concepts (knowledge) can be expressed using the sign language than using other communication techniques”. Another one added; “sign language is ever expanding as new situation arise, as long the teacher and the learners understand and interpret the new words and phrases in the same way.

However some teachers had their reservations on over reliance on sign language as the only communication technique to help pupils acquired relevant knowledge. According to T9A, in the same class some learners know sign language while others do not sign language. It is really hectic.

In another school, responding to the same issue, T3C also observed that;

We have noticed that some learners who come from different schools learnt to sign certain words differently and this is a huge challenge.

This is possible because there is no authority that nationally controls, coordinates or dictates the formation of sign language vocabularies or symbols since some of them arise in relation to local needs

Head teachers are aware of the problem as one put it this way.

The learners come from different backgrounds and each learner posed different communication challenges for the teacher. The competence in sign language among learners with hearing impairment varies and as a result, teachers found it difficult to cater for individual communication needs of the learners.

Given the reservations about the use of sign languages it follows that some learners do not acquire knowledge as prescribed by the curriculum especially given the fact these are young children who give up once they don't follow what the teacher is doing or saying . The situation is compounded by the weaknesses of some teachers themselves as confessed by T4B.

I had very little knowledge of sign/language I mainly relied on other teachers and learners to assist her I mostly use finger spelling, writing on the board and verbalizing as I try to sign. This is because I only know limited signs.

From this teacher's confession about some teachers' incompetence a new argument arises; that there are other communication techniques ( in addition to sign language) that can benefit the learners (and the teacher) in the teaching –learning process as summarized by Teacher T7A.

Because of my vast experience in teaching these children, I come to realize 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 does not know sign language is able to read in between the lines.

What T7A says, about using several techniques while teaching children with hearing impairment was observed during the teachers' lesson presentations. In any one lesson teachers used several communication techniques, for example as they used signed language, they were watching out whether pupils were also following other non-verbal communication techniques such as facial expressions and body movements . During a post-lesson conference teacher T9B explained while he was using several communication techniques.

I used several techniques to cater for individual differences among the pupils some of them benefit through the sign

language techniques while other gain through gesture and lip-reading. At times one technique helps the learner to get the message or vocabulary which he/she missed through another technique.

In summary, the findings show that while sign language is important in the teaching of young ones with hearing impairment, it should not be the only communication technique. Many others need to be used to take care of several differences among the children. All teachers should therefore be competent in sign language if pupils to acquire knowledge, enough to make them compare with children that do not have a hearing impairment

#### **4.4 Influence of Classroom Communication Techniques on Interpretation of Information by Children with Hearing Impairment**

Interpretation of teachers' communication by children with hearing impairment is handled under objective two of the study. When teachers communicate well and pupils interpret correctly their communication then the lesson competences are developed by the learners. Teachers had similar and at times different and contradicting views on whether and how children interpreted correctly their messages in relation to the communication techniques used. Some teachers recognized lip-reading as a method of communication techniques in the classroom of hearing-impaired children as shared by teacher T2C.

Some children benefit from lip-reading to interpret my messages. Because I am aware that some children are employing these techniques, I expose my face properly as I talk for the benefit of those who can hear some sounds directly or with the help of listening devices. As you talk verbally

while using sign language lip-readers pay attention to the movements of ones lips.

Another teacher in the same FGD (T6C) agreed with T2C but with caution.

I agree, some pupils gain from lip reading, but this means that the teachers' movements in the classroom are limited since you must remain where children directly see your face. You must also never talk while writing on the chalkboard. Trouble also comes when a child in one corner behaves in a way which requires a teachers' attention. The moment you tilt your head or turn your neck while talking verbally or using sign language, then you disorganise or cut off the lip-readers.

In another interview T1A had her misgivings on lip-reading.

When asked for examples of such letters, sounds or words where a tongue plays a big role the teacher gave examples of the vernacular sounds "la" and "ta". According to her the tongue touches a different parts of the palate with minimum movements of the lips. One teacher advised that "Lip-reading" should be combined with other techniques to help children interpret teachers' message correctly.

By coincidence all the head teachers also expressed the limitations of lip-reading as a communication technique in the classroom of children with hearing impairment. One of them said ; Lip-reading with infants, without other techniques may not be very helpful to infants. Children cannot stare at the teacher, to do lip-reading for many

minutes because they easily get distracted by many things.

You know their attention span is short. They prefer varieties of activities. Lip-reading would imply that the teacher is lecturing and children are “listening” which is discouraged in ECD and other levels.

However during lesson observation it was noted that teachers would call on pupils’ attention (by signals) and say something or give instructions as children observed sign languages, gestures and did lip-reading as teacher also made verbal communication. So lip-reading in most cases was never used alone to communicate to children because as T4B observed, “Lip-reading alone is insufficient to help your pupils interpret your messages correctly.”

Facial expressions, body movements and gestures were other communication techniques quoted by the teachers during this study as having a big influence on other children’s ability to interpret teachers’ messages. In an FGD, participants shared how facial expressions help the pupils to understand some of the teachers’ messages. One of them said, if the teacher correlates the lesson content with the relevant facial expression, then the child will know what the content is about . For example when a teacher is talking about a good behaviour of children in the home, his/her face should have smiles. His/her face should show “misery” or disapproval by creating wrinkles on the face; for example when a child comes late or kicks another one. As it is with lip-reading, pupils have to constantly look at the teacher’s face as they also pay attention to other communication techniques. On his/her part, the teacher dramatically alters facial expressions to tally with content he/she is putting across.

In another FGD teachers gave several examples how gestures and body movements help pupils to interpret the teachers’ intended messages. Some of the examples included the following ;

- A teacher can swing arms very fast to show quick movements or high speed.
- Putting one's palms on one's face to show misery or confusion
- Pointing in a certain direction to tell pupils where to go or sit, inviting or chasing away somebody.
- Bending can portray different messages depending on the context(s). It can mean hiding, greeting (with respect) old age, escaping, short height and so on.
- Teacher can demonstrate certain points using his/her body eg stretching arms to demonstrate sizes of things.

In one interview teacher T5C observed that facial expressions, gestures and body movements also had their limitations, for examples certain verbs may be difficult to act for example "believing". Some gestures and body movements may vary from culture to culture. Kneeling down as a sign of respect does not apply to all tribes. So children may misinterpret the behaviour of a child who does not kneel down because his/her culture does not demand it.

From the lesson observations made most teachers in one way or the other automatically used several gestures, facial expressions and body movements for example to give instructions to demonstrate certain points e.g frying, whipping, washing etc depending on the lesson content. One teacher during the post lesson conference intimated to the researcher that teachers' dramatic actions depended on one's interest and passion for teaching young children with hearing impairment.

If you love teaching and more so teaching young children with hearing impairment you will find yourself spontaneously doing all sorts of things to help these children interpret the lesson message correctly. But if your interest is only salary you are likely to teach in a dull way, with less actions,

inadequate or confusing facial expressions and this greatly disadvantages children with hearing impairment.

All teachers observed that proper usage of sign language helps children to interpret the lesson messages correctly. Teacher T8B observed that:

Sign language is a good communication technique because it is a language like other languages. If you use it correctly children will be able to interpret your messages correctly.

In one FGD a member agreed with teacher T8B when she said but also cautioned that; “sign language is one of the best communication techniques for teaching children with hearing impairment but its success is dependent not only teachers’ competence in the sign language but also that of pupils. Children who not are not very conversant with sign language miss out or survive on other teachers’ communication techniques.”

In one lesson observation many pupils were seen putting up arms to answer the teacher’s questions implying that they were following what the teacher was presenting. This teacher (T1A) during post lesson conference proudly said;

I first use several signals and gestures to attract their attention before I start teaching using a sign language. I am able to tell that they are following basing on their facial expressions depending on the lesson message, their eagerness to answer my questions and when I give them an exercise.

During the interviews with teachers, headteachers and FGDs, many challenges associated with sign languages were pointed out. These challenges affect some pupils' ability to interpret the teachers' messages (main lesson content). These included:

- Some teachers are not very competent in sign language
- Some pupils especially P.1 and weak ones are not very conversant with sign languages
- New vocabularies (local and international) whose sign language is yet to be decided upon
- Lack of support from home because parents and siblings do not understand sign language.

One head teacher narrated and summarizes the tough experiences of the teachers as follows.

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 varies and as a result, teachers found it difficult to cater for individual communication needs of the learners.

Teachers pointed out that written messages are another example of teachers' communication techniques especially with P.2 and P.3 children as teacher T8C narrated during an interview;

I usually supplement my other techniques with written messages, pre-written on charts or chalkboard. Or during presentation when I realize that children are lost and I lack any other relevant sign language vocabulary I

quickly write on chalkboard. Or in P.1 I draw the item on the chalkboard if it is easy to draw.

During the lesson observation children were seen with chits that had some writings.

During the post lesson conference the teacher was challenged on whether this doesn't pre-empt the lesson content. The teacher T6B defended himself as follows;

The full content is not given but just highlights or outlines are given. If anything these raise the learners' curiosity.

This helps learners to interpret better the other lesson details through lip reading and sign language.

For P.1 you can draw a series of pictures to depict a story, for example Picture 1: Playing football in the middle of the road and Picture II: Consequences of such behaviour. Picture III: How to behave on the road (walking on pavements)

This approach is comparable to what happens in upper classes and higher levels when learners are told what lies ahead or are given course outlines. This, in advance, streamlines their thinking and minimizes digression into unrelated content or information.

Instructional materials, though not an independent communication technique, were mentioned by several teachers among strategies of helping pupils with hearing impairment interpret teachers' messages correctly. In one FGD a teacher shared the following:

Instructional materials cut across several communication techniques, for example when I am explaining something on the chart my facial

expressions will vary depending on the message I am putting across.

Another one added:

After I have displayed an instructional material in front of them I will use sign language to explain or ask learners related questions. At this time several communication techniques will be concurrently employed, but surrounding the instructional material.

These are sign language, lip reading, facial expressions where applicable, lip reading and gestures.

So, instructional materials do not only communicate but also aid the teacher to communicate effectively as indicated by the teachers quoted above. Instructional materials attract or accommodate other communication techniques. This caters for individual differences among the learners.

Most of the teachers' classrooms had several types of materials displayed in several corners. Teacher T9C explained:

After using an instructional material I display it to help learners revisit and remind them what we covered.

This is effective for those who are not visually impaired. Children's own work is also displayed to give a sense of participation and ownership of their classroom environment.

The teacher was able to observe that there were charts with numerals and alphabetical letters presented in sign language. This, it is assumed, helps anxious learners to remind themselves the sign language numerals and letters. One teacher explained that while teaching skills of sign language for example finger spelling or other vocabularies, she refers the children to the charts if the child is stuck.

The use of instructional materials in a classroom of children with hearing impairments also has associated challenges as narrated by this teacher TIC during an interview:

The instructional materials are inadequate. When children overcrowd over a textbook or any other materials then they are not in a good posture to do lip-reading or interpret teachers' facial expressions.

Another teacher in an FGD explained her challenge of using an instructional material while using sign languages:

While I would have needed my hands to demonstrate or shift materials, these same hands would be needed for sign language at the same time, which is practically impossible. You know this is not like normal children where you talk using lips as you do some other things with your hands.

When teachers were challenged on how they go about it, one explained:

I have no choice. I have to separate the actions and the words. I explain first (using sign language) and then demonstrate the actions again using the same hands

following the sequence of the points explained using sign language. I hear that some scholars call it miming.

As earlier observed, if a chalkboard is used as an instructional material the teacher must avoid talking while facing it. Similarly, the teacher must avoid using an instructional material from a corner or an angle where pupils won't see his/her full face. If the instructional material is fixed or immovable then the teacher should rearrange the seating arrangement for that particular period so as to enable the pupils see his/her full face.

#### **4.5 Influence of Classroom Communication Techniques on Application of Knowledge by Children with Hearing Impairment.**

Findings in this section are in response to the third objective and research question which concern the teachers' communication technique and pupils' application of knowledge. The guiding principle is that if teachers use good communication techniques while teaching, pupils with hearing impairment will not only understand but also practice the information they get from their teachers.

Most teachers agreed that their communication techniques had a positive impact on pupils' application of the information obtained in new situations, circumstances or tasks assigned. Teacher T7C had this to say on the usefulness of teachers' facial expressions:

When I am teaching children with hearing impairment I deliberately change my face in relation to the content I am handling, because I am aware that pupils are not only attentive to the sign language being used but also observe the change in facial expressions as per the messages being handled. During their informal interactions I saw them shaking and nodding their heads and altering their facial

expressions accordingly; not very different from how I had been doing it.” One typical example I observed was when a pupil’s face became dull as a method of discouraging his friend from beating another child.

Facial expressions convey so many different types of messages such as approval, happiness, agreement or the opposite. Facial expressions can show that there is confusion or demand clarity. They can imply that; “you are welcome” or “why have you come?”

During the lesson observation the researcher noted that, compared to classes of hearing children, pupils and teachers of hearing impaired children changed their facial expressions actively and regularly perhaps because they were aware that facial expressions had a lot to contribute to the communication process. Pupils changed behaviour immediately the teacher changed the facial appearance for example to demonstrate her unhappiness with poor sitting posture or disturbing neighbours or unauthorized and chaotic play.

Another teachers’ communication technique that helps pupils with hearing impairment to apply information obtained was the use of sign language. The sign language, once the teachers and pupils are familiar with it, easily helps pupils to understand, practise and apply the information obtained from the teacher as this teacher in an FGD shared.

I was teaching content on relationships, avoiding conflicts, revenge and being a peacemaker in the morning using the sign language. I became happy in the afternoon when I saw a pupil, using sign language, attempting to stop his friends from fighting. I was sure

it was my morning lesson content that this pupil was applying to reconcile his friends.

A similar observation during an interview with teacher T3B emphasized and confirmed that pupils put into practice the messages they get through the sign language type of communication technique. He said;

I was teaching on how to keep our classroom environment clean, for example depositing litter in the dustbin and avoiding or minimizing littering our environment. I got excited when I saw one pupil, two hours after my lesson, trying to ask her friend, using language and gestures, to take unwanted pieces of paper to the dust bin. You know it is very satisfying when you see your learners applying the facts you gave them immediately an opportunity arises.

This child was able to advise his friend because he (the former) had understood, accepted and now owned the teacher's content on "keeping our environment clean." All pupils cannot understand and respond to the lesson content in the same way and at the same rate.

Teachers, during the FGDs, gave several examples how different communication techniques help learners to apply the knowledge acquired accordingly.

I used body movements when teaching about time management, for example the body posture when you are in a hurry, running, or having an evening walk. To my amusement I saw them changing postures depending on where they were wanted; for example running back to their classrooms after break. Obviously few of them were walking upright, not

bothering whether they were late or not. Few examples of pupils who refuse to apply the content covered will always be there.

Gestures, as a communication technique, help pupils to apply the information given accordingly. For example pupils do certain activities or go to paces, positions/locations depending on the teacher's gestures. After a teacher has made gestures on how to draw straight margin lines pupils straight away begin to avoid drawing zig zag lines.

One teacher (T6A) explained how the teacher's use of gestures helps children in out-of-school environments.

Most of the gestures used by the teachers are used by other people outside the school environment. By the time children go to these environments they are already prepared by the teacher how to interpret and apply the gesture related information. Children have no problem understanding the traffic police man/woman on whether his/her signals/gestures mean; 'stop', 'go', 'hurry', 'slow', 'turn', 'come here' or 'go away'.

The Observation of T6A is applicable to other lesson messages, that is, children are prepared to behave, act and live appropriately not only in school but also in out-of-school environments.

Lip-reading as a communication technique became a contentious issue in relation to its influence on children's application of knowledge. T1C; "For sure I don't know how much pupils gain from me using the lip-reading technique. Yes, I see them change in behaviour,

that is, applying the knowledge I give them but I can't tell how much lip-reading contributes since it is never used alone.”

In one FGD a teacher tried to explain this phenomenon this way;

You know lip-reading happens when a teacher is using verbal communication for the sake of those who are not completely deaf. So it is not easy to separate gains from verbal communication and lip-reading because our bosses have not helped us on how to establish the degree of hearing impairment. You only assume that since the learner is keenly watching your lips then he/she is gaining something.

Another important communication technique that helps children with hearing impairment to apply knowledge is “verbal communication” as reported by Teacher T9C during an interview:

Verbal communication also helps pupils to apply the content learnt to their lives. Some of these children who are partially deaf actually gain from teacher's verbal communication, while those who are totally deaf will gain from other communication techniques.

In one FGD teachers observed that for pupils to listen, understand and apply the information from the teacher the teacher must:

- Speak slowly as he or she also uses sign language
- Avoid vocabularies and phrases beyond the learners' level
- Be loud enough

- Block out other noise interference
- Use interactive methods that will help him or her to know whether learners are following

The respondents observed that as the teacher talks he or she must also use other communication as observed by teacher TC9 during an interview.

In another FGD respondents gave several examples on how they noticed that the verbal messages conveyed to learners were being applied:

After covering content on hygiene I saw many children washing their hands after coming from the toilets or throwing litter in gazzetted places. After conveying a topic on safety I saw them on their own role playing how to follow instructions of the traffic police on busy roads.

There are many other techniques teachers can use to help pupils apply the message they have acquired. Clearly written, using phrases and vocabularies appropriate to the pupils' age will help them know what to do and go ahead to do it. Some messages may be written as instructions, commands, advice or caution. Teachers gave the following examples of messages that help pupils apply the knowledge acquired.

- Help each other
- Do not fight
- Avoid sharp objects
- Obey your parents
- Keep your classroom clean
- Do not go home before time
- Avoid gifts from strangers

Some of these messages may appear as class rules and regulations and compound messages one teacher in an FGD observed that these messages help children to apply content related to any of these messages to his/her way of behaving. Through the sign language pupils remind those who are breaking the rules to stop. The same teacher noted that this form of communication was more suitable to P.3 and above where pupils reading abilities and vocabularies are relatively higher.

Instructional materials are used by teachers to communicate different messages. Pupils are likely to apply (to their lives) the messages they get from the instructional materials. T2C in an interview observed that:

Pictures and other forms of instructional materials help children understand and practice the messages they see.

One child told me that he no longer plays football in the middle of the road after seeing the consequence from the teacher's charts.

In pictorial form charts may advise or direct what a pupil should do (or avoid) for example dangers of fighting, stealing or going home alone. Most likely pupils will heed this information if they understand it.

During class observation teachers were seen using counters to teach mathematical concepts. Children were able to practice and apply these concepts using other types of materials such as

seeds, small stones and bottle tops. During a post-lesson conference teacher T8B explained how the concept developed using adding counters was applicable in real life of the child “counting and adding counters is not for theoretical purposes. The child will use these concepts in real situations to know or solve problems for example: three uncles contributing exercise books, one gives 3, another 2 and the third one 1 and the child gets a total of 6 exercise books. Or if goats escape from their house, first time 3 goats runaway later followed by 4 in total how many goats escaped.” However the teacher complained of inadequacy of teaching materials; “At times we teach theoretically because of lack of IMS” she lamented.

Because children have hearing impairment the teacher must make sure that pupils are watching the instructional materials (charts, real objects, and others) as he demonstrates or explains using sign language or other techniques. Instructional materials will help children understand and apply the intended message if they contain accurate messages and they are properly made. Other communication techniques such as written messages, and sign language can be used to help pupils understand and apply the associated content.

In summary, different communication techniques are used to help children with hearing impairment to acquire, interpret and apply information (content) got from a teacher.

While Sign Language is preferred and assumed to be the most effective communication technique, some of the techniques such as facial expressions, gestures, lip reading, finger spelling, verbal and written messages need to be used concurrently with sign language to increase pupils’ cognitive learning.

## CHAPTER FIVE

### DISCUSSION CONCLUSION AND RECOMMENDATION

#### 5.0 Introduction

This chapter presents the study discussions conclusions and recommendations based on the study findings. The purpose of this study was to assess the influence of classroom communication techniques on cognitive learning of young children (P.1-P.3) with hearing impairment in selected primary schools for the deaf in Kampala Capital City Authority (KCCA).

#### 5.1 Discussion

##### 5.1.1 The Influence of Classroom Communication Techniques on Acquisition of Knowledge by Children with Hearing Impairment.

The influence of classroom communication techniques on acquisition of knowledge by children with hearing impairment was the first objective of the study.

According to the respondents (P.1-P.3) teachers of children with hearing impairment there are many communication techniques a teacher can use to teach children with hearing impairment as one teacher put it that:

The list of communication techniques is not exhaustive. A teacher may create several signals or use his/her body to demonstrate a point as long as all the children get the message.

Although there are many common communication techniques for teaching such children for example sign language, gestures, lip-reading, finger spelling, verbal and written communication, the teacher's statement quoted above means there are more other possible ways an innovative teacher can use to teach children with hearing impairment. Therefore, as

it said with children without hearing impairment it can be said of children with hearing impairment that “There are as many methods of teaching as there are teachers “(Atwoli et al, 2007). There should therefore be no excuse for poor academic performance among children with hearing impairment, since their teachers can creatively and innovatively come up with new methods. (Lathan Joseph <https://onlinedegrees.sandiego.edu>>)

However sign language was cited by most respondents as the most frequently used and the most effective method of teaching children with hearing impairment, as observed by many scholars.

According to the respondents several communication techniques are used concurrently to help children acquire the planned lesson content as one teacher put it.

No one method is adequate to help children understand. I used several of them because children vary in abilities and interest. If a child misses a point because of an unfamiliar sign language, action or symbol then he/she may get it through another technique.

Teachers explained that while one is using, for example, sign language he/she will at the same time use facial expressions, gestures , body movements and verbalize as children lip-read his/her message. Using several techniques caters for individual differences among children with hearing impairment. By the end of the lesson each child will at least have acquired some content or skill as per the lesson competences. This approach also called eclectic approach (Kellough & Carjuzaa, 2009) ensures that no child is left behind. It contrasts with the “one-size –fits all” approach in which only one method (or instructional material) is used to teach all children despite their differences.(Twoli et al, 2007, Rekkedal, 2015)

The ECD Teachers (respondents), in their response on the preferred communication technique, identified sign language as the most used technique as one teacher in an FGD shared;

More concepts (knowledge) can be expressed using the sign language than using other communication techniques”.

This was confirmed by one head teacher who said that most communication in the classroom of children with hearing impairment was done through sign language. Although there are varieties of sign language (from country to country) (Neiva & Zanchettin, 2018) sign language is an international and formalised language. Once the teacher and his /her pupils understand the sign language then acquisition of knowledge by children will take place normally (other factors held constant) due to the same interpretation of sign language. There are more possibilities of interpreting other communication techniques such as gestures and facial expressions differently (Kincman, 2016)

However, as the respondents observed, sign language as a communication technique also had its challenges and limitations beginning with teachers themselves as one teacher (T4B) confessed.

I have very little knowledge of sign Language. I mainly relied on other teachers and learners to assist me”

Such teachers may lack competence and confidence to teach using the sign language leading to poor acquisition of knowledge by learners: (Incompetence in language affects teachers’ delivery (Eron, 2015). Another sign language- related challenge, but this time beyond the teachers’ control are the variations and inadequacies of sign language as noted by teachers T3C that some children who transfer from other schools learnt to sign words differently

compared to their new schools. This may result from local, and non-conventional words that are given a certain sign or symbol understandable only to that community (Adoyo, 2004)

Teachers and such learners must reconcile their differences for the latter to learn. It is for this reason that the class of Special Need Education (SNE) children are supposed to be small (1:10) ratio compared to other ECD children (1:25) (Avoke, 2005) to enable the teacher understand and act on each child's challenges. Children who do not know sign language add an additional burden to the teachers to teach them first the sign language before teaching the official curriculum content.

Children with hearing impairment face another challenge of isolation. They would be peers may dodge them because of communication barriers and therefore miss out on contribution from peers (Eron, 2015). Similarly, at home they may not get much help from parent's siblings and media (audio-type) because of limitations in sign language. All these are sources of learning not easily accessible by children with hearing impairment.

Children with hearing impairment that is not severe (Butt, 2017) can adequate gain from verbal communication to acquire the intended information /knowledge from the teacher as Tc4 shared.

“Some children are partially deaf they can pick some verbal messages. If the teacher talks loudly or when they put hearing aids in their ears.”

Some children have an additional advantage over other children. For these children to gain from this advantage the teacher must ensure that they are seated strategically where they can hear relatively well (preferably in the front line). Secondly these children should have hearing assistive gadgets in their ears. Finally the class must be free of other undesirable noises from within and outside the class (Twoli et al, 2007). Teachers identified as a challenge the location of schools involved in the study because of noises from activities outside the

classrooms such as welding, market activities and hooting from taxis. This was witnessed several times in all the schools during lesson observations. Teachers would pause now and again to let the outside noise subside before continuing with their lessons. Initially when these schools were started these places were isolated and sparsely populated.

Teachers expressed their inability to determine the degree of deafness and therefore appropriate interventions and approaches. This agrees with the observation by Eron, (2015), that SNE teachers should be supported to carrying out their duties effectively. In summary for the communication process to be effective, not only in the pedagogical setting but in all human endeavors, barriers to communication noise inclusive, must be removed or managed appropriately (Atwoli, et al, 2007).

Respondents shared the ways they established that due to their communication techniques pupils acquired the intended content as one teacher T1A put it,

When they answer my verbal and written questions correctly then I know that the intended content is being or has been mastered.

However the teachers were not able to attach specific communication techniques to specific content (or skill) mastery since many communication techniques are used concurrently. However they noted that when the sign language is used correctly or wrongly chances of affecting pupil's achievement are easy to detect. This strengthens the observation and arguments about the superiority of sign language over the other sign language communication techniques (Kincman, 2016, Malunga, 2007).

One of the strategies to help children with hearing impairments to be at the same footing with their counter parts that do not have the hearing impairment is to avail competent and well-motivated teachers. In addition to a good and relevant initial teacher education programme for such teachers, regular Continuous Professional Development (CPDs) courses should be

organized for them. Uganda National Association of the Deaf (UNAID) has been organizing seminars for such teachers but not as adequately as desired due to limited funding. In such CPDs or the coordination at district and national levels, most new and evolving vocabularies can be agreed upon how to present them in a sign language so as to minimize local and national variations. This is so because Uganda has once centralized national curriculum (with exception of few foreign curricula for international schools). A case in point is COVID 19 with its accompanying relatively new phrases and vocabularies such as corona virus, sanitizer, social distancing, Standard Operation Procedures (SOPs), Astra Zeneca, vaccine and many others.

### **5.1.2 Influence of Classroom Communication Techniques on Interpretation of Information by Children with Hearing Impairment.**

The influence of classroom communication techniques on interpretation information by children with hearing impairment was the second objective of the study. There was need to establish how different communication techniques help children with hearing impairment to interpret the information presented by their teachers.

One of the communication techniques identified by respondents that can help pupils interpret information given by teachers is lip-reading

Some few respondents agreed that lip-reading helps children with hearing impairment to interpret teachers' communication correctly as teacher T2C shared.

Some children benefit from lip-reading to interpret my message.

This view is supported by the lesson observation made by the researcher. The teacher who was conducting a lesson alerted the pupils to look at her face not only for the sign language but also for lip reading. The teacher tried to avoid facing in directions where pupils wouldn't

do lip-reading. Some pupils concurrently looked at teachers' hands for sign language and teacher's lips for lip-reading.

However, many teachers expressed their reservations on lip-reading as a communication technique for children with hearing impairment. One teacher observed that such a technique is possible with small classes where pupils will sit directly opposite to the teacher. Children seated in the wings, that is at an angle cannot properly do lip-reading. Another teacher observed that where the tongue plays a big role in pronunciation of words /sounds such as "la", "ta" "love" or tea by touching the palate differently learners fail to gain from lip-reading because the movements of lips is minimal. One head teacher supported teachers, but with a different reason

Lip-reading with infants without other techniques may not be helpful to them.

Children cannot stare at the teacher to do lip-reading for many minutes

because they get distracted by many things.

Banking on lip-reading for P.1 pupils or pupils who are intellectually weak is disastrous because one cannot be sure whether they observed the lips correctly (Paynter & Dissanayake, 2016). For example P.1 children who have not been taken through intensive pre-reading exercises will write the numeral "7" as "F". Implying that what you think they have seen is not what they have seen.

Lip-reading involves a lot of guess work. (Boyce, 2017) Observes that pupils get 30% correct through lip-reading of the message put across by the teacher. That implies interpretation itself would be less because this 30% is for receiving the message and not necessarily understanding it. Many researchers and scholars such as Kurien(2010) have downplayed the lip-reading technique. Besides this as a method of classroom communication. However the lip-reading technique should not be discarded because it supplements other techniques and no

one can be sure whether there are no pupils who uniquely find it helpful (Seifert, 2019) because children learn differently (Aggarwal, 2005) Teachers need to help pupils get the context of the lesson content (through other communication techniques) so as to help them guess or estimate correctly what the teachers lips are “saying”.

If done correctly, facial expressions, body movements and gestures can greatly help pupils to interpret the lesson content, as one teacher in an FGD put it.

If the teacher correlates the lesson content with the relevant facial expressions, then the child will know what the content is about.

These three communication techniques are collectively referred to as “nonverbal communication”. Teachers gave various examples of messages and content that can be passed on and interpreted correctly by children with hearing impairment such as:

Using the facial expressions to express love, joy, contentment, approval, agreement, success (Positive emotions) or fusing facial expressions to express anger, anguish, hatred, disagreements, failure among others (negative emotions). While the pupils observe teacher’s face to interpret his /her message better the teacher also observes their faces to assess their reactions.

Teachers also observed that teachers use their whole bodies, arms, fingers, legs and do all sorts of movements to demonstrate appropriate points or messages, for example tip toeing to mean escaping, or beating one’s chest to show pride, power, arrogance, and confidence.

Teacher can raise or stretch their arms to demonstrate length, width, height or give directions. In a nutshell, so many different messages can be put across non-verbally (Atwoli et al, 2007).

In the lesson observations made all the teachers were using different forms of non-verbal communications to help their pupils interpret their messages correctly. One teacher

demonstrated using her whole body, arms and fingers that if you tip toe to go and steal, you will be caught, whipped several times and therefore causing you to feel pain and laughed at or despised by other people. These dramatic presentations attracted pupil's attention and caused them to enjoy the lesson. By reading their facial expressions a teacher can tell whether pupils are interpreting his/her message correctly. Pupils were able to interpret the message (on dangers of stealing) correctly by drawing relatively well the different stages of that immoral behaviour.

For the non-verbal communication techniques to succeed:

- A teacher must use them correctly for example the teacher must vary facial expressions depending on the content being presented. Some teachers, due to personal and private problems, will put on stern face although the message requires a smiling face and therefore confusing the learners the more (Atwoli et al, 2007)
- A teacher must attract learners to be observant, link the sign language and teacher's facial expressions and body movements. The seating arrangement in the class must allow all learners to have a clear view of their teacher.
- A teacher must ensure that the non-verbal communication techniques for example the gestures and signals are understood in the way intended by the teacher. The teacher must be aware of the conventional and culturally loaded meanings attached to gestures and body movements for example pointing a finger may mean showing a direction or warning and threatening someone. The teacher must therefore ensure that pupils understand the general context of the lesson so as to be able to interpret the message conveyed through the non-verbal communication techniques.

Among the challenges associated with non-verbal communication techniques especially those involving the use of arms, hands and fingers is that these three (body parts) are concurrently

needed to do the sign language. The teacher may have to use the sign language first and then use the body language /movements next to strengthen the point. Doing both concurrently would have been better but at times is impractical. (Neil, 2017)

As observed by one teacher during the post lesson conference if a teacher love teaching and loves his/her pupils, automatically and spontaneously he/she will find himself /herself using all sorts of facial expressions and body movements to illustrate a point. It requires more dedication on the part of the teacher to teach these children compared to children without hearing impairment because the latter group pose relatively less challenges (Eron, 2015)

Sign language, as already indicated under 5.1.1 is one of the commonest communication techniques used by teachers' in the classrooms of children with hearing impairment. Teacher T8B declared.

It is a language like other languages. If you use it correctly children will be able to interpret your messages correctly.

This teacher's assertion was confirmed by the researcher during a lesson observation. Pupils were putting up their arms to answer teacher's questions or respond to their colleagues' answer especially if it was a wrong one. Teacher's facial expression of smile and approval was a sign that pupils were acquiring and interpreting the lesson content correctly.

As it is with other pupils, teachers of children with hearing impairment must follow the usual pedagogical principles for example moving from known/simple to unknown/complex concepts, using instructional materials, using several communication techniques, active involvement of learners and to continuously assess their progress and repeating complicated concepts if need arises. (Aggarwal, 2005, Kellough & Carjuzaa, 2009)

Like other aspects of the teaching –learning process the use of sign language also has its challenges and limitations. These include some teachers’ and some learners’ incompetence in the sign language (Eron, 2015). This barrier to communication can be over-come by effective coaching training in the sign language. The P.1 teachers have to labour in teaching children sign language because most of them (children) start when they are not conversant with the language. Even if they were conversant many P.1 children do not easily follow the teacher’s rapid movement of fingers, hands and arms. So, a teacher has to move at a slow pace to enable children follow the sign language.

Interpretation of teachers’ communicated messages may also be negatively affected if the teachers’ and learners’ signed language vocabularies do not tally because either the teacher is forming new signs of previously unknown words or the child picked “strange” signs from elsewhere.

As it is with acquisition of knowledge, children with hearing impairment lack extra assistance from any other people (a part from the teachers) because most people at home do not know and do not use sign language. This therefore means that generally, children with hearing impairment compared to their counterparts, relatively have less learning opportunities outside their classroom (Alhuzail & Levinger, 2018).

There are other forms of communication that teachers use to help children interpret the lesson content correctly .As teacher T8C narrated during an interviewed

I usually supplement my other techniques with written messages, pre-written of charts or chalk board.

This teacher claimed that these written messages are too brief to pre-empty the lesson content but act as a clue especially where sign language has its own limitations.

The written message may be in form of pictures .At an appropriate time teacher will refer to the written messages for example in P.2 –P.3 or drawn diagrams/pictures in P.1 –P.3 .

Written messages raise learners' curiosity and help them to remain focused. This helps them to remain focused. This helps them to easily interpret the teacher's message.

Related to the use of written messages is the use of instructional materials as a unique mode of communication to and with children with hearing impairment. Respondents, during FGDs explained how the use of instructional materials cuts across other communication techniques, for example one can use facial expressions when explaining messages on a chart, sign language, can be used when one is demonstrating how to keep oneself clean using the necessary materials. The lessons which were observed in progress included the use of instructional materials.

Teachers explained that instructional materials help children to interpret their lesson content correctly. Pupils employed all the other senses (except hearing) to explore more knowledge in relation to the materials presented. Because their sense of sight is okay children with hearing impairment can remember 30% of what they see compared to XX% of children with visual impairment who can remember 20% of what they hear. (Aggarwal, 2005). This means that as far as learning is concerned pupils with hearing impairment are relatively less disadvantaged than those who are visually impaired.

The use of instructional materials has also its challenges and precautions, for teachers to be aware of and perhaps attend to as Teacher T1C shared.

The instructional materials are inadequate. When children over-crowd

over a text book or any other materials then they are not in a good posture to do lip-reading or interpret the teacher's facial expressions.

As already seen with other communication techniques, the use of instructional materials requires the use of hands, which hands are also needed at the same time to communicate using the sign language; for example a teacher cannot use a pointer to elaborate a point on a chart or chalkboard when the same hand is needed for sign language. One teacher shared her solution to this problem.

I explain first (using sign language) and then demonstrate the actions again using the same hands following the sequence of the points explained using sign language. I hear that some scholars call it “miming.

Teaching children with hearing impairment require a lot of creativity and innovativeness much more than is required to teach children who do not have that impairment. (Neiva & Zanchettin, 2018)

For instructional materials to serve their purpose they must be of the expected quality such as appropriateness, beauty, correctness, clarity and used following pedagogical principles such as challenging pupils to think and create their own points related to or arising from the chart or any instructional materials

### **5.1.3 The Influence Of Classroom Communication Techniques On Application Of Knowledge By Children With Hearing Impairment**

Investigation of the influence of classroom communication techniques on application of knowledge by children with hearing impairment was the third and final objective of the study. The key concern of this study was to establish how different communication techniques help children with hearing impairment not only to understand but also to practice the knowledge, values and skills delivered to them by their teachers. This argument is based on one of the UNESCO’s broad aims of education that is “learning to do” (UNESCO,). Even at such lower levels (p1-p.3) and with such vulnerable children the practical application of

knowledge must be emphasized because, after all, some of the them drop out of school at this stage (Aliyu, 2017)

One of the communication techniques used by teachers that helps pupils to apply knowledge is the use of facial expressions. If done correctly and appropriately facial expressions can convey many different messages to pupils and in many cases they will start applying the relevant and acceptable messages “read” from the teachers’ (Face Kinckman, 2016)

As teacher T7C, during an interview shared, pupils not only copied from her how to alter facial expressions depending on what you want to convey but also started applying them to settle disputes among themselves .According to her one pupils “put on a dull face as a message of discouraging his friend from fighting another one”. Change of behaviour as a result of teacher’s facial expressions was also noticed during lesson observations. Children would sit calmly and be attentive if they noticed “toughness” on teacher’s face. Facial expressions is one of the non-verbal types of classroom communication identified by several scholars (Kigenyi; 2017, Neil 2017)

Children easily remember teacher’s facial expressions in relation to a certain message or teacher’s reaction to their behaviour. This memory helps them to put into practice what the teacher’s facial expression demanded. (Kinckman, 2016)

Sign language was cited by most respondents as one of the most important communication techniques that help pupils both understand and apply knowledge to new situations. Several examples were given on how after teaching using sign language teachers observed pupils applying the content at their level and in their context. One teacher in an FGD said,

In the morning I was using sign language to teach content on relationship, a voiding conflicts, revenge and being a peace maker. I became happy in the afternoon when I saw a pupil, using sign language, attempting to stop his

friends from fighting. I was sure that it was my morning lesson content that this pupil was applying to reconcile his friends.

Other teachers gave similar testimonies, implying that sign language, like other languages can help children to apply knowledge in new situations on conditions that:

- both teachers and pupils understand and use sign language
- teachers apply Bloom's taxonomy of educational principles, for example helping children not only to know, (receive) comprehend but also to apply content to new situations. (Sindelar, et al, 2012)
- Pupils are motivated to see the value and relevance of what is taught (Singh, 2019).

The dominance of sign language in the education of children with hearing impairment is indisputable (Marschark et al, 2006; Heward, 2002; Eron, 2015). If conditions stated above are fulfilled pupils will apply knowledge received through the sign language. However, as it is with children without hearing impairment, these pupils will not apply the knowledge acquired if the rest of the community, teachers inclusive, are contradicting this content for example disposal of litter, politeness, time management and many other aspects of human behavior (Heward, 2002. Eron, 2015).

Body movements as a communication techniques involve sub categories such as use of fingers and arms to make gestures and the whole body movements to illustrate or demonstrate certain concepts or skills. Teachers cited several examples how illustrating a point using body movements helped pupils to apply the intended concept, skill or behaviour. One such example was when teacher demonstrated how to walk depending on the urgency or purpose. During break time pupils walked in a relaxed manner while the bell and other signals for end of break caused the children to run. Teachers explained that teachers' gestures in the

classroom train pupils to follow same or similar gestures outside the classroom in the community for example how to act in relation to traffic as guided by the traffic police.

Body movements and use of gestures also generally belong to non-verbal type of communication (Atwoli et al, 2007). This involves dramatic presentations and miming. Body movements greatly help children with hearing impairment because they get motivated and can remember well what they saw (Aggarwal, 2001). This agrees with the observation that pupils remember better what they see than what they hear.

However, it must be emphasized that, as it is with other communication techniques, application of knowledge gained through body movements depends on the way how the lesson competences are stated and handled during the lesson presentation (Okeke, 2020, Ocak Karabay, 2019). To avoid rote learning, as it is with children who do not have a hearing impairment, hands –on and minds on, learners –centered approaches must be used. Children must be given opportunities and challenges to help them apply the knowledge gained in class.

Similarly, for body movements to cause the desired impact on the child’s learning and application of that content the teacher: must use them (body movements) accurately. If the content talks of squatting the teacher must squat and not bend or pretend to squat. There is therefore no room for physical laziness on the part of the teacher.

- Should not exaggerate body movements to turn his /her lesson into a comedy. If facts are exaggerated, then the risk of turning them into fiction or a fairy tale increase and therefore taken lightly. For example if a teacher “over demonstrates “the behaviours of a bad ( or a good ) child, then children will think that such a child does not exist in the real world and therefore the teacher is telling myths , legends or stories for entertainment . Let a teacher demonstrate what is near to a real life – situation of the child

- Watch out to check whether all pupils are able to see his or her body movements and gestures

Their application of knowledge will depend on what they see and perceive. Seating arrangement and reduction of other distractions must therefore be worked on by the teacher before and during the lesson presentation.

Lip reading as a communication technique was recognized but also downplayed by the teachers and head teachers. One teacher observed that lip reading happens when the teacher is using other techniques such as verbal communication and sign language. According to the teacher one cannot tell how much lip reading itself contributes to a child's learning and application of knowledge. Since pupils watch teachers' lip movements therefore it means they are gaining from it; at least to supplement other communication techniques. Teachers' reservation on lip reading are shared by some scholars who observed that lip reading can only contribute 30% of pupils' learning because pupils, many times, pupils guess wrongly what the movements of lips meant or implied (Okongo, 2015). Therefore, lip reading should not be used alone to teach children with hearing impairment. This can arise from situation where a teacher uses verbal communication to teach children who are partially deaf and the teacher deceives himself /herself that those with hearing impairment (totally deaf) will benefit from his/her lip movements.

Some of the children with hearing impairments can hear if they have hearing – aid gadgets (placed in their ears) and /or when the teacher talks loudly. The children's ability to apply the knowledge acquired, as need arises, is the same as for children without hearing impairment. During several FGDS teachers gave circumstances under which verbal communication can benefit pupils with hearing impairment such as teachers' speaking pace, audibility and a noise – free environment.

Other teachers testified that they witnessed pupils implementing the messages they had heard the teacher communicate in the classroom. The same argument about other communication techniques applies to verbal communication, that children's application of knowledge depends on many factors such as teachers' methods of teaching, statement of the competences and the role modeling by the people children interact with (Malunga, 2007). Therefore, verbal communication is no license for the teacher to lecture or use teacher centered methods of teaching. The teacher can or challenges pupils to contribute to the lesson through sign language, written response, drawing or miming.

There are many techniques the teacher can employ to tell whether pupils are getting all his /her verbal messages such as reading their facial expressions (Eron, 2015), response to his/her questions and whether they are tilting their heads to capture teachers' messages. With time and experience a teacher can crudely estimate the severity of each learners hearing impairments and then be able know how to arrange their seating arrangement. A teacher can also play an important role in various fora to help the deserving children get hearing aid devices

While a teacher may have chances to negotiate about noise coming from the school itself, he/she may have little powers on noise coming from outside the school. Since the Teachers' Code of Conduct recognizes the roles of teachers in their communities the teacher can always initiate community – based strategies of minimizing or eliminating such noise. (MoES, 2007)

Teachers in schools of children with hearing impairment can also use written messages as a form of communication. Relevant messages (information, instruction, guidance, caution and others) can be summarized on chalkboards, charts, or strip cards. Some of the written messages may be class rules and regulations. Children's responses, reactions, and application of those written messages will depend on their content. A child is likely through sign language or gesture to alert a fellow pupil that he/she will be in trouble if he/she breaks a

given and written rule displayed on the wall. Pupils can therefore help each other on the application of the written messages especially if the teacher has been using methods and strategies that promote cooperation and peer support such as group methods, cooperative learning (Adoyo, 2004) school family initiative (Bazilio, 2019) Child to Child or Uganda Kids Unite (Brydges, 2018) . This agrees with the argument by many scholars that a lot of pupils' learning also come from their peers (Kigenyi, 2017). Teacher's written messages trigger peer to peer interaction.

Teachers also equated the use of instructional materials with other techniques. Teachers T2C during an interview asserted that

Pictures and other forms of instruction Help children understand and practice the messages they see. One child told me that he no longer plays football in the the road after seeing the consequences from the teacher's chart

What children see (or hear for those who have that bit of chance) and whatever they manipulate in the classroom they will do the same out of the classroom and out of school (Kigenyi, 2017). If, according to teacher T8B, a teacher using counters helps pupils to make correct additions then pupils will use the same concepts and competences to count and add real things at home for example goats, chicken, eggs, bananas or utensils.

Since the sight of children with hearing impairments is okay (except some few) then the teachers must maximize this opportunity by availing and using many instructional materials not only for the teacher but also for pupils to manipulate. Children will remember 90 % of what they learn once they hear, see and touch or do (Tamusuza, 2011). An instructional material or picture will save the teacher the labour of explaining because “One picture speaks a thousand words” (MoES, 2007).

However there is need to note that both quantity and quality of instructional materials matters, if children with hearing impairment are to gain from their use. Ambiguity must be avoided, for example a person putting a hoe on his shoulder can mean that he is relaxing after doing a lot of work or is lazy and reluctant to use the same hoe. It is important that pupils must get the maximum possible from the instructional materials, since because of limitation of language they will have few chances to discuss with others or parents the related message.

Teachers and head teachers expressed their dismay about the inadequate materials due to poor funding from the government and parents as one head teacher observed.

Every time I request for more learning materials, the management tells me to hold on till the next term. Schools for the deaf have some cognitive learning materials; however these materials are inadequate to serve all children with hearing impairments.

The possible cause for the above scenario is the uniform capitation grants formula used to disburse money to government aided primary schools. There is no preferential treatment for SNE schools and yet such schools need relatively more money per child given the necessity to use much many more materials and strategies to help these children be put at par with children be who do not have serious impairments.

## **5.2 CONCLUSION**

### **5.2.1 The influence of classroom communication technique on acquisition of knowledge by children with hearing impairments.**

There are many communication techniques from which a teacher can choose to teach children with hearing impairments. The common ones are; sign language, lip reading, facial expression, body movement, verbalization and written message. The most commonly use technique used was the sign language type.

The more techniques used concurrently the better because of individual differences among learners. While all communication techniques contribute to pupils' acquisition of knowledge, sign language was particularly singled out as the most effective method of helping pupils acquire knowledge. However, it was noted that for sign language to be effective both the teachers and learners must be conversant with the language. The academic performance of children with hearing impairment is below that of children without hearing impairments because of many possible factors, incompetence in sign language inclusive.

### **5.2.2 The influence of classroom communication techniques on interpretation of knowledge by children with hearing impairment.**

There are many communication techniques teachers use to help pupils with hearing impairment to interpret the lesson content correctly. One of such techniques mentioned by teachers (respondents) is lip reading. Children do lip reading to try to get the teachers' message. Teachers, as observed by many scholars, noted that through lip-reading pupils do not gain much from teacher because it involves a lot of guess work.

Non-verbal communication techniques such as facial expressions, body movements and gestures greatly help children to interpret the lesson content as deduced from children's own facial expressions and written exercises. For these techniques to be effective the pupils must be attentive and observant. A teacher must devise methods of reconciling the need to use arms, hands and fingers to demonstrate a point while at the same time needing to use the same body parts for sign language.

Sign language was identified as the best communication technique that helps pupils interpret the lesson content correctly because it is equated with other languages. Some children were able to respond correctly to teachers' questions using sign language implying that they had correctly interpreted the lesson content. However, sign language as a communication

technique faces several challenges such as teachers' and pupils' incompetence in the language, the ever-emerging new words and lack of support (for the child) from other people due to their lack of sign language skills. It should be noted that sign language alone is not enough for the pupils to develop the appropriate competences. Pedagogical principles, as it is with teaching pupils without hearing impairment, must be followed.

Other communication techniques used to help pupils interpret lesson content correctly are written messages and the use of instructional materials. Written clues or key vocabularies or phrases given to children before the beginning of the lesson do not pre-empt the lesson but help the pupils to think ahead and remain focused. Well prepared and used instructional materials help pupils to acquire and interpret the lesson content correctly because they ease the understanding and remembering of the related content. The inadequacy of the instructional materials remains the major challenge in the education of children with hearing impairment.

### **5.2.3 The Influence Of Classroom Communication Techniques O Application Of Knowledge Children With Hearing Impairment.**

If teachers use effective communication techniques, pupils with hearing impairment will apply the knowledge, values and skills acquired to their day –to- day living. Pupils are able to “understand” what the teacher’s facial expressions, body movements and gestures mean or demand of them and in most cases they respond appropriately. Similarly, pupils also use facial expressions to approve or disapprove their peer’s behaviour.

Sign language is an indispensable communication technique in the classroom (and outside classroom) of pupils with hearing impairment despite associated few challenges such as lack of its mastery and the ever evolving new words. This technique can help pupils apply

knowledge if the teacher uses learner centered methods, in the same way other children are taught.

Other techniques that teachers use to help pupils apply knowledge include lip reading, verbal (oral) and written messages in addition to the use of instructional materials. As witnessed from lesson observations, at any one moment a teacher employs several communication techniques helps (eclectic approach) to convey and share his /her lesson content with the pupils. The use of several communication techniques to cater for pupil's individual differences and to bridge the gap of the limitation of the individual communication techniques. The success of the communication techniques, above all, depends on the general pedagogical principles such as active engagement of learners from simple to complex knowledge, values and skills.

### **5.3 Recommendations**

Basing on the findings of the study, it was revealed that there are several hindrances to proper classroom communication between teachers and children with hearing impairment but this can be enhanced by ensuring all the concerned beneficiaries do the following:

Efforts should be made by the Department of Special Needs Education of the Ministry of Education and Sports in organizing refresher courses for all teachers and school directors in pre-primary and primary schools in order to enhance their classroom communication techniques of teaching learners with hearing impairment that need to be filled through research studying.

The head teachers should regularly supervise, mentor and coach their teachers to enable them improve on their classroom communication techniques. In addition to that the head teachers should regularly organize continuous professional development workshops for their lower primary school teachers to enable them deliver knowledge effectively.

The lower primary teachers should see to it that they improve their communication techniques when teaching children with hearing impairments in their schools. They also need to assess their learners regularly in order to find out the type of learning difficulties they have.

Parents should get involved in their children's education by providing them with all the learning materials necessary, communicating to teachers, understanding the best communication techniques themselves, getting involved in school activities in order to give their children the necessary support to enable them communicate effectively. This is because successful education needs the three pillars that are actively involved (parents, teachers and children).

Ministry of Education and Sports and Kyambogo University should revise and enrich curriculum for training Special Needs Education teachers.

#### **5.4 Areas for Further Research.**

Arising from the findings and observations made there are many other gaps related to the education of children with hearing impairment.

Attitudes of teachers towards children with hearing impairment need to be investigated. This is important because attitudes and passion affect teacher's commitment and performance.

There is need to establish the appropriate methods needed for teaching children who have both visual and hearing impairment. The challenges of these children are more complicated and therefore need to be isolated and exclusively studied.

Action research is needed on the learning and use of sign language in the wider community for the purposes of increasing the population that can interact with children with hearing impairments.

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## APPENDICES

### APPENDIX I: INTERVIEW GUIDE FOR TEACHERS

#### **Interview Guide for Teachers on How Classroom Communication influence the Cognitive Learning of Children with Hearing Impairment**

1. How long have you been teaching children with hearing impairments?
2. What classroom communication techniques do you usually use?
3. How does each of those influence pupils' acquisition, interpretation and application of knowledge?
4. Which classroom communication technique are you most comfortable with?

Please state your reasons.

5. In your opinion, which classroom communication techniques have you observed be most influential when teaching children with hearing impairment?
6. What classroom communication challenges do you face? Comment on your competence in the sign language
7. In your opinion, is the classroom environment supportive for effective classroom communication?
8. What measures would you suggest for enhancing classroom communication?
9. What type of Cognitive learning materials do you use?
10. How often do you use text books?

11. How do you find teaching vocabulary using text books to children with hearing impairment?

Does the teacher make the work in the text books simpler?

12. Does the school provide enough Cognitive learning material for the deaf children?

If yes how adequate are the Cognitive learning materials

If No explain briefly

13. Is there enough lighting in the classroom?

14. How is noise kept away from the classroom?

15. Is the classroom well ventilated?

16. Are all children able to see you when you are teaching in class?

If No, give one reason

17. Are all the classes in your special primary /units acoustically treated?

If no, is there any effort being made to treat the classes acoustically? Please Explain briefly

18. How would you describe the state of facilities in your school /unit.

**Thank you for participating in the study.**

## **APPENDIX 2 :INTERVIEW GUIDE FOR HEADTEACHERS**

### **Interview Guide for Head teachers on how Classroom Communication influence the Cognitive Learning of Children with Hearing Impairment**

1. How long have you been a head teacher in this school?
2. What classroom communication techniques are commonly used in the school?
3. How competent are your teachers in the sign language?
4. How often do you observe lessons? Please state your reasons
5. Are Cognitive learning materials readily available and accessible? Please state your reasons
6. Are the classroom environments supportive of effective classroom? Communication?  
Please state your reasons
7. Has classroom communication influenced the Cognitive learning of children with hearing impairment?
8. How competent are your teachers to teach children with hearing impairment?
9. Do you receive any funding from government to teach children with hearing impairment?
9. Is this school regularly inspected?
11. If yes who carries out the inspection
12. Ever since they started inspecting, do you witness any improvement?
13. If yes, describe briefly.
14. Give suggestions on how the education of children with hearing impairment can be improved upon.

13. Is there enough lighting in the classroom?

14. How is noise kept away from the classroom?

15. Is the classroom well ventilated?

16. Are all children able to see you when you are teaching in class ? Why is this important

17. Are all the classes in your special primary /units acoustically treated that is enabling sounds to be clear?

If no, is there any effort being made to treat the classes acoustically? Please explain briefly

18. How would you describe the state of facilities in your school/unit.

Thank you for participating in the study .

**Thank you for participating in the study.**

### **APPENDIX 3: FOCUS GROUP DISCUSSION GUIDE**

1. Which communication techniques do you use to use to teach pupils with hearing impairments?
2. How does each communication technique help pupils?
  - I. To acquire
  - II. Interpret
  - III. Apply knowledge?
3. How does u find lip reading as a communication technique?
4. How competent are you and your pupils in the sign language?
5. How does the verbal /oral communication technique benefit your pupils and yet they are deaf?
6. What are the challenges of teaching children with hearing impairments generally and p.1 children particular?
7. Many people in the homes and the wider community do not understand and use sign language. How does it affect pupils with hearing impairments?
8. Many people in the homes and the wider community do not understand and use sign language. How does affect pupils with hearing impairments?
9. How any authority or organization supported you as a teacher of children with hearing impairment?
10. How equipped is your school offer effective education to children with hearing impairments
11. Comment on your children's academic performance compared to children with hearing impairment in other schools

#### **APPENDIX 4: LESSON OBSERVATION GUIDE**

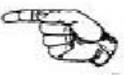
1. Which communication techniques is the teacher using during teaching?
2. What shows that pupils are following what the teacher is saying or doing?
3. Is the teacher using learned – centered methods?
4. How does the teacher position himself /herself (for all children to see him/her well)?
5. Does the teacher position a child who is communicating something in such a way that all children can see his/her face properly?
6. How is the teacher using instructional materials and the chalk board?
7. How does a teacher speak when communicating to children with hearing impairments?

#### **Post lesson conference guide**

8. Were all your pupils following what you were presenting? What is the evidence?
9. Which communication techniques were using to teach?
10. Which communication technique does u think help pupils understand better?
11. Which aspects of your lesson you consider
  - a. Positive and why
  - b. Negative and why
12. Suggest ways you can improve on your teaching of such children

APPENDIX 5: SIGN LANGUAGE AND NUMERALS.

Clery School For The Deaf ASL Finger Spelling Chart

<i>Letters</i>				
 <b>A</b>	 <b>B</b>	 <b>C</b>	 <b>D</b>	 <b>E</b>
 <b>F</b>	 <b>G</b>	 <b>H</b>	 <b>I</b>	 <b>J</b>
 <b>K</b>	 <b>L</b>	 <b>M</b>	 <b>N</b>	 <b>O</b>
 <b>P</b>	 <b>Q</b>	 <b>R</b>	 <b>S</b>	 <b>T</b>
 <b>U</b>	 <b>V</b>	 <b>W</b>	 <b>X</b>	 <b>Y</b>
 <b>Z</b>	<i>Numbers</i>			
 <b>0</b>	 <b>1</b>	 <b>2</b>	 <b>3</b>	 <b>4</b>
 <b>5</b>	 <b>6</b>	 <b>7</b>	 <b>8</b>	 <b>9</b>

## APPENDIX 6: INTRODUCTORY LETTER

**KYAMBOGO  UNIVERSITY**

P. O. BOX 1, KYAMBOGO – KAMPALA, UGANDA

**Faculty of Education**  
Department of Early Childhood Education

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### INTERNAL MEMO

**FROM:** Chair, Department Graduate Board, 1<sup>st</sup> April 2019

**TO:** Mr. Kisakye David REF: 16/U/13379/GMEC/PE  
C/o Early Childhood Education  
Department

**REF: APPROVAL OF RESEARCH PROPOSAL**

This is to inform you that the Faculty Graduate School Board at its meeting of 28<sup>th</sup> February 2019 approved your research proposal for the Master of Education (Early Childhood Education). You can now proceed to the field for data collection.

Thank you.  
Yours sincerely,



Dr Ejuu Godfrey

**FOR: CHAIR, FACULTY GRADUATE BOARD**

**CC** Chair, Early Childhood Education Department Graduate Board

#### Supervisors

- 1 Dr. Maani S John  
Teacher Education and Extension
- 2 Dr. Sr. Evangelista Busingye  
Early Childhood Education