

**ADAPTATION OF INSTRUCTIONAL MATERIALS FOR CHILDREN WITH  
HEARING IMPAIRMENT IN PRIMARY SCHOOLS IN  
GOMA DIVISION, MUKONO MUNICIPALITY**

**BY**

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**A DISSERTATION SUBMITTED TO THE GRADUATE BOARD IN PARTIAL  
FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE  
DEGREE OF MASTERS OF SPECIAL NEEDS EDUCATION  
OF KYAMBOGO UNIVERSITY**

**SEPTEMBER, 2019**

**DECLARATION**

I, Nakayiza Farida declare that this report is my original work and that has never been submitted to any institution of higher learning for any academic award.

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## **DEDICATION**

I dedicate this report to my son Bwanika Najib and my mother Hajjat Mariam Mullo for all the love and care they accorded me.

## ACKNOWLEDGEMENT

I thank Allah for the gift of life and wisdom, and more especially for keeping me alive to this date of writing my final dissertation.

I extend my sincere appreciation to my supervisors Dr. Stackus Okwaput and Dr. Paul Emong who took time off their busy schedules to offer guidance to me so that I produce a report of this nature.

I also wish to thank all my lecturers in the faculty of special needs and rehabilitation who have been the providers of knowledge that led to the completion of this course.

I am indebted to the management and staff of Seeta Church of Uganda primary school who provided me with all the information that enabled me to compile this report.

Thanks and appreciation goes to my late father Hajj. Sulaiman Mullo and mother Hajjat Mariam Mullo for the firm foundation they laid for me.

I wish to thank Hajj. Sulaiman Walusimbi for the advice and financial support he gave me during my studies.

Special thanks go to my brothers Ibra, Hassan, Musa, Hakim, Siraje and Sisters; Mastula, Walusimbi and Aisha Kimala for always encouraging and being there for me even in the most difficult situations.

To my colleagues; Mugote Godfrey, Nancy Katumba, Christine Nasazi, Mugisha Charles, Abitegeka Sally and others, thank you for your encouragement and support during the course of study.

May Allah bless you abundantly?

## TABLE OF CONTENTS

|  |           |
|--|-----------|
| Declaration .....  | i         |
| Approval .....   | ii        |
| Dedication .....   | iii       |
| Acknowledgement .....  | iv        |
| Table of Contents .....  | v         |
| List of Abbreviations .....  | x         |
| Abstract .....   | xi        |
| <b>CHAPTER ONE .....</b>   | <b>1</b>  |
| <b>INTRODUCTION.....</b>   | <b>1</b>  |
| 1.3 Background to the Study.....   | 2         |
| 1.4 Problem Statement .....  | 8         |
| 1.5 Purpose of the Study .....   | 9         |
| 1.6 Objectives of the Study .....  | 9         |
| 1.7 Research Questions.....  | 9         |
| 1.8 Study Scope .....  | 10        |
| 1.8.1 Geographical Scope .....   | 10        |
| 1.8.2 Time Scope .....   | 10        |
| 1.8.3 Content Scope .....  | 10        |
| 1.9 Significance of the Study .....  | 11        |
| 1.10 Clarification of Concepts .....   | 11        |
| 1.11 Theoretical Framework .....   | 12        |
| 1.11.1 Cognitive Development Theory.....   | 12        |
| <b>CHAPTER TWO .....</b>   | <b>15</b> |
| <b>LITERATURE REVIEW .....</b>   | <b>15</b> |
| 2.0 Introduction.....  | 15        |
| 2.1 Instructional Materials for Children with Hearing Impairment.....  | 15        |
| 2.2 The Process of Adapting Instructional Materials.....   | 23        |
| 2.2.3 Challenges Encountered by Teachers when Adapting Instructional Material for Learners<br>with Hearing Impairments ..... | 33        |
| 2.3 Summary .....  | 36        |

|  |           |
|--|-----------|
| <b>CHAPTER THREE .....</b>   | <b>37</b> |
| <b>METHODOLOGY .....</b>   | <b>37</b> |
| 3.0 Introduction.....  | 37        |
| 3.1 Research Design.....   | 37        |
| 3.2 Study Area .....   | 37        |
| 3.3 Target Population.....   | 38        |
| 3.4 Sampling .....   | 38        |
| 3.5 Sample Size.....   | 38        |
| 3.6 Data Collection Methods and Instruments.....   | 39        |
| 3.7 Data Collection Procedure .....  | 41        |
| 3.8 Data Analysis .....  | 41        |
| 3.9 Research Ethical Considerations.....   | 41        |
| <b>CHAPTER FOUR.....</b>   | <b>43</b> |
| <b>DATA PRESENTATION AND INTERPRETATION .....</b>  | <b>43</b> |
| 4.0 Introduction.....  | 43        |
| 4.1 Analysis of Respondent’s Demographic Information.....  | 43        |
| 4.2 Objective One: Instructional Materials Adapted for Learners with Hearing Impairment .....  | 45        |
| 4.3: Objective Two: Process of adapting Instructional Materials for Learners with Hearing Impairment.....                                | 47        |
| 4.4: Objective Three: Challenges Encountered by Teachers when Adapting Instructional Material for Learners with Hearing Impairment ..... | 50        |
| <b>CHAPTER FIVE .....</b>  | <b>52</b> |
| <b>DISCUSSION, CONCLUSION AND RECOMMENDATIONS .....</b>  | <b>52</b> |
| 5.0 Introduction.....  | 52        |
| 5.1 Discussion .....   | 52        |
| 5.1.1 Instructional Materials Adapted by Teachers when Teaching Children with Hearing Impairment.....                                    | 52        |
| 5.1.2The Process of Adapting Instructional Materials for Learners with Hearing Impairment ...  | 53        |
| 5.1.3 Challenges Encountered by Teachers when Adapting Instructional Materials for Learners with Hearing Impairment.....                 | 55        |
| 5.2 Conclusion .....   | 57        |
| 5.3 Recommendations.....   | 58        |
| 5.4 Areas for Further Research.....  | 59        |

|   |    |
|---|----|
| References.....   | 60 |
| Appendix i: Schools in Uganda Having Children With Special Needs .....              | 69 |
| Appendix ii: Map of Uganda Showing Mukono District.....                             | 82 |
| Appendix iii: Map of Mukono District Showing Mukono Municipality.....               | 83 |
| Appendix iv: Interview Guide for teachers.....                                      | 84 |
| Appendix v: Observation Guide .....   | 87 |
| Appendix vi: Introductory Letter from the department of Special Needs Studies ..... | 88 |
| Appendix vii: Consent Form for Participants .....                                   | 89 |
| Appendix viii: Pictorials .....   | 90 |



## **LIST OF FIGURES**

|   |    |
|---|----|
| Figure 1: Conceptual Framework on Adaptation of Instructional Materials for Children with Hearing Impairment..... | 13 |
|---|----|

## LIST OF TABLES

|  |    |
|--|----|
| Table 1: Overview of the Number of Schools Providing Education for Children with Hearing Impairment.....           | 4  |
| Table 2: Evidence of an Increasing Enrollment of both Pupils with Disabilities and those without Disabilities..... | 4  |
| Table 3: Primary School Pupils with Different Types of Impairment and Sex in the 2014 .....                        | 5  |
| Table 4: Showing the Sample Size of the Study Population.....  | 39 |
| Table 5: Gender of Respondents.....  | 43 |
| Table 6: Teachers' Teaching Experience.....  | 44 |
| Table 7: Marital Status of the Respondents.....  | 44 |
| Table 8: Teachers' Level of Qualification.....   | 45 |

## **LIST OF ABBREVIATIONS**

|        |   |
|--------|---|
| CI     | Compassion International                          |
| CWDS   | Children with Disabilities                        |
| CWHI   | Children with Hearing Impairment                  |
| DH     | Double the Effort                                 |
| GWEP   | Government White Paper on Education               |
| IN     | International Needs                               |
| LWHI   | Learners with Hearing Impairment                  |
| MOES   | Ministry of Education and Sports                  |
| NGOS   | Non-Governmental Organizations                    |
| SMC    | School Management Committee                       |
| SNET   | Special Needs Education Teacher                   |
| UBOS   | Uganda Bureau of Statistics                       |
| UN     | United Nations                                    |
| UNESCO | United Nations Educational Scientific and Culture |
| UPE    | Universal Primary Education                       |
| USD    | Uganda Society of the Deaf                        |

## **ABSTRACT**

The study investigated the extent to which instructional materials are adapted for children with hearing impairment in primary schools in Goma Division Mukono Municipality. In particular, the study explored the instructional materials that are adapted by teachers in teaching of learners with hearing impairment, how instructional materials are adapted for children with hearing impairment and the challenges encountered by teachers when adapting instructional material for learners with hearing impairment. The study adopted the qualitative approach where by information was collected using interviews and observation. Purposive sampling method was used to select the respondents. The findings indicated that some of the instructional materials adapted included charts, real objects, audio visual materials, pictures, photographs and text books among others. Although teachers mentioned audio visual materials and text books, there was no evidence showing that they adapt audio visual materials and text books. Findings further revealed that age was an important aspect considered when adapting instructional materials. Other considerations mentioned by the respondents were durability, safety of the instructional materials, number of learners, ability, content to be covered, relevancy and availability of raw materials to use. The findings indicated that teachers face a number of challenges in adapting instructional materials and these include; lack of raw materials to use, lack knowledge to adapt instructional materials, materials to use are expensive and negative attitude from stake holders. The researcher recommends that there is need to build the capacity of teachers to enhance their ability to adapt instructional materials for learners with hearing impairments.

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Overview**

The aim of the study was to explore the extent to which adaptation of instructional materials for learners with hearing impairment was done by teachers in Mukono Municipality. This chapter presented the background to the study, motivation of the study, statement of the research problem and the purpose of the study. The chapter also included objectives of the study, research questions, study scope, significance of the study and clarifications of concepts used in the study.

### **1.2 Motivation for the Study**

I am a qualified Special Needs Education Teacher (SNET) in one of the primary schools in Mukono district. The motivation for this study is based on my experience as a teacher for over ten years teaching learners with hearing impairment alongside their hearing peers in an inclusive school arrangement. During this period, I have realized that when instructional materials are adapted and presented before a general class during a lesson in progress, it enables learners with hearing impairment to favorably compete with their hearing peers as they are able to follow the lesson content. However, some teachers teaching learners with hearing impairment don't adapt suitable instructional materials due to unknown reasons. This leads to limited active participation of children with hearing impairment during the teaching/learning process. Therefore, the goal of this study was to find out the extent to which teachers adapt instructional materials in the teaching of learners with hearing impairment (LWHI).

### **1.3 Background to the Study**

Sandbox (2017), states that children with hearing impairment are those with a loss in hearing whether permanent or fluctuating. Some children may have a hearing loss which is so severe that it completely precludes perception and interpretation of spoken language. Others may have mild or moderate hearing loss which permits perception and processing of spoken language although with difficulty. This implies that the existence of hearing loss may hinder children with this condition from participating in learning activities. Children with hearing impairment continue to lag behind their peers in academic achievement especially in the areas of reading and mathematics. Heward (2014) indicates that the gap in achievement between children with normal hearing and those with hearing impairment usually widens as they grow older.

According to the Uganda Bureau of Statistics (UBOS, 2014) the prevalence of disability stands at 12.4% representing 4,340,000 as the population of persons with disabilities (PWDs). Traditionally, children with disabilities including children with hearing impairment were discriminated against by society (Othieno, 2009). They were regarded as invalid, inferior and in need of special protection (Switzer, 2013) and thus unable to benefit from education. In Uganda before the colonial era, children with disabilities had limited attention because they were associated with bad omen in families (Okech, 2011). However, several efforts have been put in place globally to support education of children with disabilities. For example, Musibala (2001) observes that UNESCO in 1990s together with other international agencies such as UNICEF, World Bank, UN development program and UN population fund advocated for all governments and organizations to support education of children with disabilities (CWDs) in inclusive schools and their learning needs be catered for using adapted instructional materials. This advocacy resulted into the world adopting the education for all (EFA) frame work aims at making

education a top priority on the development agenda on the UN cooperation and governments. The learning needs of all children were highlighted by the Salamanca statement and framework for action on special needs education. It states that all children who are marginalized including children with disabilities should attend school in their home communities in inclusive classes (UNESCO, 1994). This implies that schools and teachers are expected to design all possible strategies to ensure that these students participate in learning. In line with this development Uganda committed itself to provide education for all. The role of the teachers is to provide direct assistance through the use of adapted instructional materials to promote positive peer interaction among learners.

In Uganda since the colonial era, progressive efforts to provide education to learners with disabilities has been in place (Okech, 2012). AtimandEron (2002) highlight that, education of children with hearing impairment was established in 1959 when the Uganda society for the deaf (USD) was formed. In the same year lip leading lesson were started at Aghakhan Mosque in old Kampala and Mengo primary school. Through the effort of the Uganda society for the deaf, a primary school for the deaf was later set up next to Mengo primary School. In 1969 another primary school, Ngora School for the deaf was established in Ngora district. On a broader perspective in addition, government has adopted legal and policy frameworks and pragmatic approaches in education to bring about inclusive education for all including children with hearing impairment. For example, UPE policy, training of special education teachers, special needs inspectors and providing conducive environment for development partners to support inclusive education. As a result of the said efforts today there are about 125 schools catering for children with hearing impairment and these are categorized into 46 units, 63 inclusive schools and 16 special schools all over the country. Refer to appendix I: (List of schools as of 2017 in Uganda having children with Special Needs)

Table one show the category of schools and number of children with hearing impairment

**Table 1: Overview of the number of schools providing education for children with Hearing Impairment in Uganda by 2017**

| Category          | Number       | Number of children with HI |       |
|-------------------|--------------|----------------------------|-------|
|                   |              | Boys                       | Girls |
| Units             | 46           | 633                        | 581   |
| Inclusive schools | 63           | 404                        | 406   |
| Special schools   | 16           | 773                        | 755   |
|                   | <b>Total</b> | 1810                       | 1742  |

*Source: Ministry of Education and Sports (2017)*

Evidence from the Ministry of Education and Sports (2012) indicates there are an increasing number of children with disabilities. See table 2

**Table 2: Evidence of an Increasing Enrollment of both Pupils with Disabilities and those without Disabilities.**

| Year | No of pupils with disabilities | No of children without disabilities | Total     |
|------|--------------------------------|-------------------------------------|-----------|
| 2008 | 183,537                        | 7,779,463                           | 7,963,000 |
| 2009 | 204,352                        | 8,084,648                           | 8,289,000 |
| 2010 | 205,018                        | 8,168,982                           | 8,374,000 |

*Source: Computed by the author using 2012 data from the statistical abstract*



According to UWEZO (2016), from P1 to P5, the enrollment was higher and gradually reduced as pupils progressed to higher classes across seven years. The increase in the number of children in schools implied an increase in the need for teachers who were not readily available. This in turn led to high pupil to teacher ratio, high school dropout, poor welfare of teachers, insufficient funds in terms of capitation grant, poor facilities, inadequate instructional materials and infrastructure all contributing to high levels of poor performance in UPE schools.

Statistics on the enrollment of children with disabilities is beginning to emerge and indicating enrollment by different categories of impairments. The statistics further provide that there are more pupils with hearing impairment than the rest as indicated in table 3 below

**Table 3: Primary School Pupils with Different Types of Impairment and Sex in the 2014**

| Class              | Type of Impairment |                  |                   |                   |                     |                   | Sex    |        |         |
|--------------------|--------------------|------------------|-------------------|-------------------|---------------------|-------------------|--------|--------|---------|
|                    | Autism             | Hearing impaired | Mentally impaired | Multiple impaired | Physically impaired | Visually impaired | Male   | Female | Total   |
| P.1                | 1,104              | 9,215            | 10,729            | 789               | 4,549               | 5,952             | 18,009 | 14,329 | 32,338  |
| P.2                | 814                | 7,490            | 6,979             | 657               | 3,833               | 5,439             | 13,351 | 11,861 | 25,212  |
| P.3                | 876                | 8,265            | 6,559             | 645               | 4,577               | 6,262             | 14,165 | 13,019 | 27,184  |
| P.4                | 809                | 7,903            | 6,352             | 617               | 4,722               | 6,793             | 14,062 | 13,134 | 27,196  |
| P.5                | 744                | 6,480            | 4,854             | 459               | 3,941               | 6,081             | 11,741 | 10,818 | 22,559  |
| P.6                | 560                | 4,887            | 3,815             | 334               | 2,966               | 5,120             | 9,221  | 8,461  | 17,682  |
| P.7                | 332                | 2,784            | 2,080             | 199               | 1,732               | 3,219             | 5,453  | 4,893  | 10,346  |
| <b>Grand Total</b> | 5,239              | 47,024           | 41,368            | 3,700             | 26,320              | 38,866            | 86,002 | 76,515 | 162,517 |

*Source: Ministry of Education and Sports*

As seen from the table above, there are varying categories of children with disabilities. However, children with hearing impairment are the highest in number (47,024). This calls for the need to adapt instructional materials to enable them enjoy the right to education as stated by the National and International legal frameworks.

Nganwa *et al.* (2010) claim that when instructional materials are adapted, it enhances effective learning for children with hearing impairment because of being able to follow and actively participate in a given lesson in progress. Materials produced should be directly relevant to children with hearing impairment and institutional needs and reflect local content, issues and concerns. Adapting instructional materials can help develop expertise among staff, giving them a greater understanding of the characteristics of effective materials. Herenda(2010) points out that adapted instructional materials can enhance the reputation of the institution by demonstrating its commitment to providing materials to children with hearing impairment. Materials produced within the institution can be revised and adapted as needed giving them greater flexibility (Jucket *et al.*, 2018). However, some studies suggest that a sizable number of teachers are reluctant to adapt instructional materials that are compatible to the learning needs of children with hearing impairment.

The goal of a human rights-based approach to education is to ensure every child attains quality education that respects and promotes her or his dignity and optimum development. Achieving this goal is, however, enormously more complex. The right to education is high on the agenda of the international community. It is affirmed in numerous human rights treaties and recognized by governments as pivotal in the pursuit of development and social transformation (UNICEF and UNESCO, 2006). Countries in Latin America and the Caribbean, for example, are increasingly making school attendance compulsory for children of pre-primary school age.

Therefore, education is supposed to be for all, available, accessible, acceptable and adaptable. This does not leave out any person including those with disabilities. Access to learning is identified as a right and it is supported by European legislation too. Therefore, it is fundamental to adapt instructional materials in order to make them accessible to all regardless of particular learners' needs (McDonough and Shaw 2012).

Children with hearing impairment are members of the human race. What is best for others is best for those with hearing impairment too (Beauchamp, 2003). They have, like everyone else, rights and talent which nature has bestowed upon them. These talents need to be nurtured and their rights respected. One of these rights is a right to education (UN, 1948). The Dakar Framework for Action on Education states in its fundamental principle that; "the learning needs of persons with disabilities demand special attention. It adds that steps need to be taken to provide equal access to education to every category of disabled person as an integral part of the education system (UNESCO, 1999). All these International documents submit the right to education for people with disabilities as a fundamental freedom.

Education is also one of the key strategies to address issues of marginalization and exclusion. This means that education is a fundamental right that all people including those with disabilities should enjoy (Beauchamp, 2003). Education prepares children to become self-reliant and innovative citizens who are able to make sound decisions that can contribute to the country's development. In this sense, teachers have to adapt a number of instructional materials for teaching children with hearing impairment with a view to ensure that there is equality in society.

In many countries, children with hearing impairments face a lot of challenges in accessing education. In South Africa, children between the ages of 8-15 face challenges of inadequate resources and materials to cater for their education. In Mozambique, almost 3/10 children mostly

girls with hearing impairments are out of primary education. This indicates low access to education among these children, a factor which could be associated with lack of adequate instructional materials (Silverman, 1998).

In Uganda, there is a well-established policy to cater for the education of children with disabilities for example those with hearing impairment. Literacy is viewed as a fundamental human right and the foundation for lifelong learning. It is fully essential to social and human development in its ability to transform lives (UNESCO, 2017).

#### **1.4 Problem Statement**

Hearing impairment may hinder a child from learning and participating in curricular activities in schools. In light of this, there is increased advocacy for adaptation of instructional materials for learners with hearing impairment nationally and internationally. This development is based on the perception that instructional materials for learners with hearing impairment enhance the learning of this category of learners. Like everyone, rights and talents have been bestowed upon them by nature. One of these rights is the right to education (UN, 1948). This is one of the reasons why teachers should adapt instructional materials as a means of responding to this advocacy. Unless materials are adapted, children with hearing impairment may experience challenges in their education because of not being able to utilize the ordinary instructional materials. In Uganda, the high prevalence of children with hearing impairment makes it viable to undertake steps to provide equal access to education for these children as an integral part of the education system. In Goma Division, Mukono Municipality, there are 53 children with hearing impairment. Some of these children are now in primary seven and are being prepared to sit their primary leaving examinations. In this division, no study has been conducted regarding this aspect. It is upon this background that the researcher was inspired to carry out this study in order

to explore the extent to which teachers adapt instructional materials for learners with hearing impairment in Goma Division, Mukono Municipality. No study has been conducted in Goma Division regarding this aspect.

### **1.5 Purpose of the Study**

The purpose of the study was to explore the extent to which instructional materials are adapted for learners with hearing impairment in primary schools in Goma Division, Mukono Municipality and the challenges encountered in the schools.

### **1.6 Objectives of the Study**

The study was guided by the following objectives;

1. To find out the instructional materials that are adapted by teachers in teaching learners with hearing impairment in primary schools in Goma Division, Mukono Municipality.
2. To examine how the instructional materials are adapted for children with hearing impairment in Goma Division, Mukono Municipality.
3. To establish challenges encountered by teachers when adapting instructional material for learners with hearing impairments in primary schools in Goma Division, Mukono Municipality.

### **1.7 Research Questions**

1. What instructional materials are adapted by teachers for learners with hearing impairments in primary schools in Goma Division?
2. How are the instructional materials adapted for children with hearing impairment?
3. What challenges are encountered by teachers when adapting instructional material for learners with hearing impairments in primary schools in Goma Division?

The researcher focused on the research questions above for the reasons that they helped to find out the instructional materials that are adapted for children with hearing impairment, how the instructional materials are adapted for children with hearing impairment and the challenges experienced by teachers in the process of adapting instructional materials for children with hearing impairment.

## **1.8 Study Scope**

### **1.8.1 Geographical Scope**

The study was conducted in Mukono district focusing on one school in Mukono municipality because it is the only school offering education services for children with hearing impairment (CWHI).

### **1.8.2 Time Scope**

The study took an account of the situation from (1997) to-date. This is the period when the UPE policy was implemented. The policy stipulates free education for four children in each family bearing in mind the child with disabilities to be a priority for enrolment in school.

### **1.8.3 Content Scope**

Generally, the study explored the extent to which instructional materials are adapted for learners with hearing impairment (HI) in primary schools in Goma Division Mukono Municipality. Specifically, the study explored instructional materials adapted by teachers in the teaching of learners with hearing impairment, analyzed how instructional materials are adapted for children with hearing impairment, and established challenges encountered in the adaptation of instructional materials for children with hearing impairments in Goma Division.

## **1.9 Significance of the Study**

The findings from this study might be useful in that they may;

- i. Stimulate further research on how to adapt instructional materials for learners with hearing impairment in primary schools.
- ii. Influence policy makers to support teachers to adapt instructional materials for learners with hearing impairment (LWHI).
- iii. Generate effective programs to increase utilization of adapted instructional materials for children with hearing impairment.
- iv. Contribute to the body literature regarding the adaption of instructional materials to children with hearing impairment.

## **1.10 Clarification of Concepts**

**Adaptation** is the altering of materials to improve or make them more suitable for particular type of learner or group of learners (Tomlinson, 2003).

**Hearing impairment** is a loss in hearing whether permanent or fluctuating that adversely affects a child's education performance (Heward, 2014).

**Instructional materials** are those items that express essential knowledge and skills of the subject in school curriculum through a medium or a combination of media for conveying information to a student (Gauther and Lawson, 2000).

## **1.11 Theoretical Framework**

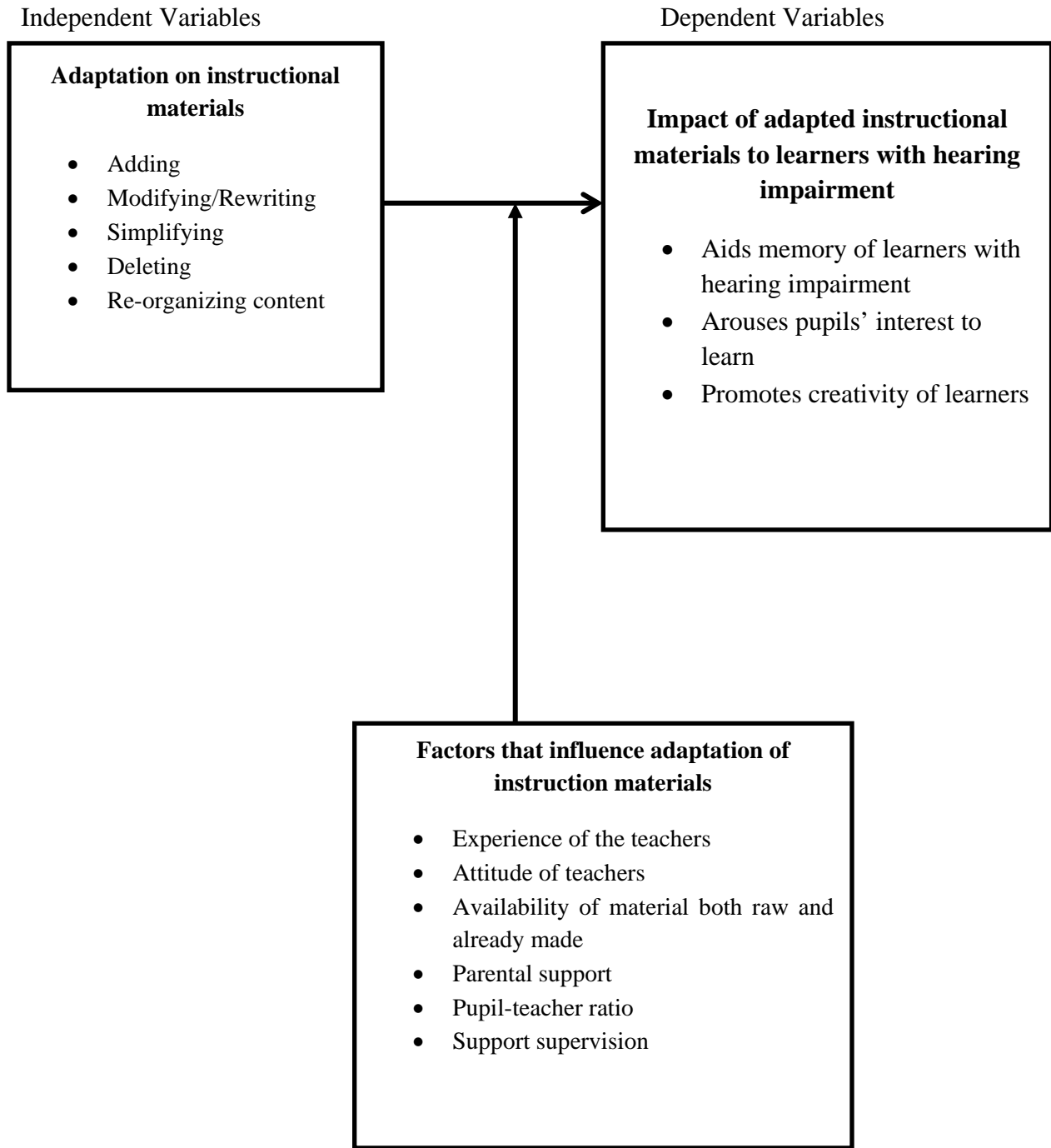
### **1.11.1 Cognitive Development Theory**

Basically, the study was guided by Piaget's (1952) theory of cognitive development which deals with the nature of development of human intelligence. The cognitive theory focuses on development and learning. The theory implies that teachers should make a special effort to adapt instructional materials for individuals and small groups, rather than for the total class group.

Cognitive theory was used because it is an important aspect in adaptation of instructional materials for the learner's developmental levels. The theory emphasizes that the content of instruction needs to be consistent with the developmental level of the learners. The teacher's role is to facilitate learning by providing a variety of experiences which in this case implies instructional materials. The cognitive theory emphasizes the opportunities that allow learners of different cognitive levels to work together and encourage less mature students to advance and understand. Piaget also emphasizes that teachers should allow opportunities to classify and group information to facilitate assimilation of new information with previous knowledge. The theory encourages teachers to explore and experiment with concrete materials that help children to learn more about their environment. With the use of adapted instructional materials, a child is able to compare and contrast things and make perception about his / her own environment. The theory also encourages teachers to adapt instructional materials to allow new information and experiences to be fixed into the existing mental structures of learners (Gichuba, 2010).



**Figure 1: Conceptual Framework on Adaptation of Instructional Materials for Children with Hearing Impairment.**



*Source: Primary Data (Self-generated)*

The conceptual framework above was constructed in a way that it reflects the objectives of the study by presenting the relationship between the study variables. It shows how instructional

materials may be adapted which include; adding, modifying/rewriting, simplifying, deleting and reorganizing content. It further shows that if instructional materials are adapted they facilitate the education of children with hearing impairment by aiding memory, arousing pupils' interest to learn and promotes creativity of learners with hearing impairment. It also shows intervening factors that may influence adaptation of instructional materials which comprise; experience of teachers, attitude of teachers, and availability of both raw and already made materials, parental support, pupil-teacher ratio and support supervision among others.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

This chapter presents literature review in line with the set objectives of the study. It was drawn from public reports, magazines, newspapers, published reports, and dissertations among others. This literature review presents literature in line with the objectives of the study.

Information about the current state of education for children with hearing impairment is scanty not much has been researched in this area and therefore reports and literature is rare especially for the case of Uganda. Evidence from the National Disability Organization supporting and advocating for the rights of deaf people in Uganda. UNAD appreciates inclusive education more than segregation because it promotes interaction and acquisition of acceptable behaviors. This therefore calls for adaptation of instructional materials for children with hearing impairment.

#### **2.1 Instructional Materials for Children with Hearing Impairment**

Clerk (2016) defines instructional materials as anything which is used by learners and teachers to facilitate learning. He further states that materials can be classified into some types as follows: printed materials, text books, student's work sheet, pictures, photographs, newspapers, magazines, audio-visual/ films/video, compact disks, interactive teaching materials such as web based learning materials and computer assisted instructions. Material adaptation refers to application of some strategies to make an instructional material more effective and flexible (McDonough & Shaw, 2012). Adapting their own instructional materials enables many teachers to take into account their particular learning environment and overcome the off fit of instructional materials (Block, 2017).

Lindsay (2007) claims that there is need to adapt all written instructional materials to supplement lessons taught to children with hearing impairment. The author adds that all announcements regarding class times, activities, field work, industry visits should be given in writing as well as verbally. It is also important to give children an opportunity to make copies of their lesson notes available. In addition to that, he says that it is important to adapt flexible delivery of teaching materials via electronic media as children with hearing impairment have difficulty in accessing information in the usual ways. He further said that new technology and the internet in particular, can be used to bridge many gaps.

Oyewumi (2008) encourages teachers to adapt videos and films for teaching children with hearing impairment. He explains that where this is not possible, the teacher may need to consider alternative ways for learners with hearing impairment to access information. The author encourages teachers to adapt visual-media especially overhead projectors or PowerPoint as much as possible. This is because they are effective instructional materials that enhance the learning process for children with hearing impairment.

According to America Red Cross (2012), it is duly stressed that there is need to adapt sign language textbooks and sign language pictures and diagrams. To them, sign language is a form of language used by people who have hearing impairment. Concepts and ideas are represented through the use of manual signs, finger spelling and symbols. On that note, sign language textbooks are crucial resources for effective teaching. Their availability, adequacy, adaptation and utilization are very necessary. Learning difficulties experienced by Special Needs children are worrying whether they are mainstreamed, integrated or separated in the classroom. There is need to adapt and employ relevant instructional materials which will enhance effective teaching and learning. The above reference shows other instructional materials that can be adapted to

enhance the learning of children with hearing impairment. Sign language books, mathematical sets, fractional shapes, flash cards, alphabetical charts, DVDs, sign languages films, counting sticks, brick blocks, clock face for teaching time, toys, wall charts and maps among others.

According to Sumner (1985), adapted instructional materials such as diagrams, pictures, graphs and flow charts are very essential in the teaching and learning process and more so to the learners with hearing impairment as they reduce language and reading demands. This is because visual methods of teaching and learning creates a more lasting experience and relate most readily to other sensory experiences.

Many learners with disabilities that impair their ability to participate in a typical classroom environment across the world cannot benefit fully from traditional educational programs. For these students, computer-based technologies can play an important role. The authors emphasize that adaptive technology now exists, that can enable even those students with severe disabilities to become active learners in the classroom alongside their peers who do not have disabilities(Hasselbring and Williams, 2000).

Although computer technology has the potential to act as an equalizer by freeing many students from their disabilities, the barriers of inadequate training and cost must first be overcome before more wide- spread use can become a reality (Hasselbring and Williams, 2000). It appears hearing impairment is a fundamental educational handicap because it interferes with normal linguistic and intellectual development. However, with proper support when the right and most appropriate instructional materials are adapted by teachers, most children with hearing impairment can and do succeed in school.

Tomlison and Musuhara (2004) defines instructional materials as anything which is used by the teachers or learners to facilitate learning. The author mentions cassettes, videos, dictionaries,

readers, work books or photocopied exercises, photographs, live talks, instructions given by teachers, tasks written on cards or discussions between learners as effective adapted instructional materials.

Mushoriwa and Gasva (2008) are of the view that teachers and parents should try to understand the problems of children and try to co-operate with them in the learning process by drawing maps in geography, pie charts in mathematics and diagrams in science so that learners can easily understand the lesson. They emphasize that teachers should try to stand at one place as they engage the attention of children with hearing impairment as they practically illustrate concepts using the adapted instructional materials.

Studies conducted in the different countries like the United States of America (USA) New Jersey, show that standards and indicators for learning are critically important for students with hearing impairment in particular and disability in general. Since it is the hearing ability of the learner that is affected, effective teaching can be enhanced by teachers through the adaptation of audio-video caption, real objects, developing of sign language charts in reading and mathematics. The text books as instructional material do not always meet the needs of learners as some do not have pictorial illustration that help to bring about useful meaning in abstract concepts to learners with hearing impairment (Tomlison and Musuhara, 2004).

Richards (2002) states that a textbook is a key component in most language programs. In some situations, they serve as the basis for much of the language input learners receive and the language practice that occurs in the classroom. The author adds that textbooks may provide the basis for the content of the lessons, the balance of skills taught and the kinds of language practice the students take part in. In other situations, the textbook may serve primarily to supplement the teacher's instruction. For learners, the textbook may provide the major source of contact they

have with the language apart from input provided by the teacher. In the case of inexperienced teachers, textbooks may also serve as a form of teacher training. They provide ideas on how to plan and teach lessons as well as formats that teachers can use. Much of the language teaching that occurs throughout the world today could not take place without the extensive use of commercial textbooks. Learning how to use and adapt textbooks is hence an important part of a teacher's professional knowledge.

A large body of empirical research has concluded that the dynamic design of multimedia, which may consist of multiple types of media, combined modalities, and audio and visual cues, can have either an advantageous or an adverse effect on learning outcomes for novice learners, depending on their ability to effectively utilize and adhere to certain constraints of working memory (Sung and Mayer, 2012). Multimedia studies compare design combinations of media such as a spoken language, and visual-spatial information such as pictures, animations and charts, and/or printed text.

Such studies assert that the combination of media, when adapted properly, is more effective than any one presented alone. The population for these studies lends itself to the typical college-educated student of normal hearing and average cognitive abilities. While the deaf student population is presented with much of the same instructional challenges as their hearing peers, only a handful of studies have formally researched the design effects of multimedia within the deaf and hard-of-hearing learning environment (Mayer and Moreno, 2010).

Instructional materials adapted children for children with hearing impairment incorporates many types of standard multimedia such as text, pictures, and instructional videos with and without captions, animations, simulations, avatars, and graphic organizers. Research that examined the effectiveness of various adapted materials for learners with hearing impairment showed that

pictorial formats, along with simple or brief text, helped students to learn and recall more information and proved beneficial in content comprehension. Other research focusing on the application of multiple media has also provided favorable results in the comprehension of content when accompanied with a variety of visual modalities, visual media, and adjunct visual aids. Multimedia material may not only improve comprehension of a particular text, but also contribute to hearing impairment children's overall development of literacy skills and motivation because they provide access to rich linguistic experiences. Multimedia materials for children with hearing impairment incorporate many types of the typical media used with hearing children with one exception one that is unique to deaf population. Sign language is a visual language that consists of hand signs, gestures, body movements, and facial expressions to communicate a thought or idea. Sign language is a primary communication modality used with learners with hearing impairment (Rosenet *al.*, 2011).

When learners with hearing impairment learn using sign language, they become cognitively engaged in the learning process. According to McDonough and Shaw (2012), the working memory treats sign language as both a phonological and a visual modality, stimulating the different components of the cognitive architecture. Children with hearing impairment are deaf process sign language in much the same way as a hearing person processes spoken language within working memory. In a series of studies, Hasselbring and Williams, (2000)took up the challenge of investigating how a sign language modality might shape the architecture of working memory for children with hearing impairment. These studies provide insight for understanding the uniqueness and constraints of working memory for children with hearing impairment and the mental processing of sign language. However, there is need to research in the area of instructional material adaptation that adheres to the constraints of working memory in order to avoid overloading working memory.



Rosenet *al.* (2011) provide support for the effectiveness of pictorial presentation of information children with hearing impairment. The adaptation of pictorial instruction facilitates both comprehension and retention of novel information, above those of the textbook and individualized formats. Furthermore, Rosenet *al.* (2011) claim that the heavy emphasis on the verbal print channel for presenting information found in the individual and textbooks format nullified any benefits for the hearing-impaired students who have deficient language and reading skills. The pictorial presentation was the most effective instructional format for the students in this experiment.

**The following are the principal advantages of textbooks;**

- i. They provide structure and a syllabus for a program. Without textbooks a program may have no central core and learners may not receive a syllabus that has been systematically planned and developed.
- ii. They help standardize instruction. The use of a textbook in a program can ensure that the students in different classes receive similar content and therefore can be tested in the same way.
- iii. They maintain quality. If a well-developed textbook is used students are exposed to materials that have been tried and tested, that are based on sound learning principles, and that are paced appropriately.
- iv. They provide a variety of learning resources. Textbooks are often accompanied by workbooks, CDs and cassettes, videos, CD, ROMs, and comprehensive teaching guides, providing a rich and varied resource for teachers and learners.
- v. They are efficient: They save teachers time, enabling teachers to devote time to teaching rather than material's production.

- vi. They can provide effective language models and input. Textbooks can provide support for teachers whose first language is not English and who may not be able to generate accurate language input on their own.
- vii. They can train teachers: If teachers have limited teaching experience, a textbook together with the teacher's manual can serve as a medium of initial teacher training.
- viii. They are visually appealing. Commercial textbooks usually have high standards of design and production and hence are appealing to learners and teachers Richards et al. (2000). The author adds that use of adapted instructional materials like phrase books, dictionaries or human resource of sign language interpreters during an ongoing lessons and exams is useful.

The early and consistent use of a system of total communication serves as a springboard for intellectual development and subsequent academic achievement. Communication methods will likely vary according to the skills of the learners with hearing impairment as well as the curriculum content (Lindsay, 2007).

In Nigeria, it was found out that text books and writing materials as key contributors to school effectiveness at the primary level in developing countries (Boissere, 2004). In Kenya Studies carried out found that, the availability of adapted textbooks had a strong significant and positive impact on learning outcomes. Much literature in developing countries seems to suggest that resources do matter and the most important cost effective input are the textbook and other pedagogical and learning materials (Mushriwan and Gasva, 2001).

Kennedy and Deshler (2001) claims that, such adapted instructional materials prepare young children with hearing impairment for incidental learning with minimal guidance from their teachers. According to the Ministry of Education and Sports (2008) instructional materials

facilitate learning and multi-sensory as well as providing essential textual and visual inputs. They are also important in motivating children to learn. Among the existing instructional materials that can be adapted include; wall charts, Alphabet charts, Readers, Picture cards, Math work cards, Abacus, English work cards, and Letter cards among others.

## **2.2 The Process of Adapting Instructional Materials**

In the course of adapting accessible instructional materials, teachers should consider visual ability of the learner, physical state of the learner, memorization (decoding text/recognizing words), learning difficulties, comprehending information and fluency among others. Musibala (2001) claims that before adapting of an instructional material, it is necessary to identify the learners' needs. He explains that once the learning needs are established, it gives the teacher the basis of deciding on the type of instructional material to adapt. He mentions the following procedures to be observed in the process of adapting instructional materials: Choosing specific learning objectives to meet immediate learning needs of an individual learner and deciding on the activity or subject to be taught in relation to the identified objective.

Musibala (2001) states that the process of adapting instructional materials for learners with hearing impairment begins immediately when the learner has been identified and found to have a hearing impairment. The assessment report is supposed to form the basis for proper intervention that may use charts to express the major themes of the lesson to bring on board children's development and those who have already lost hearing capability (Spunginand Koenig, 2002). In my own view, the extents of instructional material adaptation depend solely on the severity of hearing defect and the needs of the learner concerned. According to Al-zyoudi (2006), every child has unique characteristics, interests, abilities and learning needs which should be put in mind by teachers when adapting instructional materials. This is confirmed by Edge (1993), who

states that when materials are adapted considering unique characteristics of learners they become more suitable for learners with hearing impairment and help to bridge the gap between the classroom and the world.

Lindsay (2007) urges that in the process of adapting instructional materials, teachers should ensure that lists of technical terms which learners with hearing impairment will need to acquire are made available before the lesson. Liu and Ginther (1999) state that adaptation of instructional materials is done to accommodate a variety of individual differences including learning styles and cognitive styles. The author defines Cognitive style to the preferred way individual processes information. The authors explain that prior to adaptation, the teacher should identify learners' individual differences with regard to cognitive styles and acquired knowledge and thus adapt and provide them with instructional materials individually selected and structured.

The interaction that takes place in the classroom allows the teacher to experience and understand learners' personal goals and preferences thus promoting their skills. It is important to adapt instructional materials bearing in mind the learners' interests, preference and needs and give appropriate guidance throughout the learning process (Marchionini *et al.*, 1998). Richards *et al.*, (2000) says that a person who has lived with a hearing impairment from birth is often cut off from the usual form of communication. Therefore, Teachers are advised consider the potential variation in the individual's skills, learning styles and preferences. Teachers teaching children with hearing impairment, have a duty to adhere the principals of proper multimedia adaption that best utilizes cognitive processes within the working memory (Rosen *et al.*, 2011).

Cornwall and Robertson (1999) affirm that "the response to this particular set of diverse learning needs should be through shared responsibility, problem solving, strategy development and partnership with parents, supported by effective coordination and open flexible management

thus, enabling appropriate training and staff development. In addition they observe that learners with hearing impairment may require adaptations of instructional materials, mode of presentations that will enable them to acquire, comprehend, recall, and apply social studies content and related processes. They continue to suggest that, instructional presentation of adapted materials in the teaching/learning context can enhance a student's attention and ability to focus on instruction with a primary purpose of improving on their mathematical and literacy skills and organize information to aid comprehension and recall instructional prompts and foster understanding of new abstract concepts a basis for addressing the Social Studies Framework activities (Sung and Mayer, 1992).

Oyewumi (2008) advises teachers to prepare a brief content outline, a syllabus, and a list of learning objectives for the class ahead of time before adapting instructional materials. These could be distributed to learners with hearing impairment at the beginning of the term so that pupils can be helped at home by their parents to adapt instructional materials. The author encourages teachers to collaborate with children, their families and the specialists in order to adapt suitable instructional materials. Older children with hearing impairment should also have input in decisions with regard to adaptation of their instructional material. According to

Teachers who teach children with hearing impairment require special consideration to adjust to children's needs in the process of adapting instructional materials. This helps to bridge the gap between children with hearing impairment and their peers. Teachers should adjust to the learners needs during the process of adapting instructional materials. Teachers should put into consideration learners who lack listening and speaking skills, and adapt for them instructional materials such as pictures to capture their attention (El-Zraigat and Smadi, 2012).

The drive towards inclusive education seeks to ensure that all learners are empowered to become competent and contributing citizens in an inclusive, changing and diverse society (Engelbrecht *et al.*, 2017). In respect of providing quality education to learners with hearing impairment, focus should be laid on the development of learners' strengths and competencies rather than focusing on their shortcomings by creating specific adaptations on the instructional materials, the curriculum, and classrooms to accommodate learners with hearing impairment as this would help in bridging the gap between the educational outcomes for learners with hearing impairment and hearing learners, bearing in mind the special characteristics of learners with hearing impairment (VanDyker and Fewell, 2013). It maintains that educators should be guided and supported in their endeavors of trying to design new strategies tailored towards seeing positive outcomes for example, getting to know about other successful educators working in inclusive environments, specifically managing the classroom to meet the needs of learners with hearing impairment.

The author observes that before adapting instructional materials, it is important to consider the potential diverse characteristics of learners with respect to the ability of seeing, hearing, manipulating objects, reading and communicating. Then apply instructional strategies to all classroom discussions, group work, handouts, web-based content, labs, fieldwork and assessment. Some countries such as Finland Japan and Thailand show that adapting of instructional materials serves to increase the successful participation of individuals with disabilities in challenging academic programs such as those in science, engineering, mathematics, and technology (Ndurumo, 2002).

Adoyo (2017) revealed that teachers should use the latest techniques and clearly adapted materials for instruction when working with children with hearing impairment. More emphasis

should be laid on showing the practical things to students, so that they can easily understand the lesson by making diagrams on the chalkboard for explaining the things. Adoyo (2017) further explains that if a child with hearing impairment asks a question, the teacher should remain calm and answer the question slowly and clearly to provide clarity. Learners should be encouraged to express themselves freely in the class. Teachers should try to develop activities that involve all the children together. This helps to keep a healthy and collaborative interaction of learners with hearing impairment with their peers in the classroom. It also helps in creating a better social adjustment for them in daily classroom interactions. With the proper care and instruction, children with hearing disabilities can have a positive and productive experience in any learning environment.

In the process of adapting instruction materials to develop particular senses, the teacher should think of children's safety. Instructional materials should be adapted according to the relevance to the activity being carried out and age appropriateness sense levels of maturation depending on age of the child. Material should be placed in a convenient place in the class room during an activity and be stored well afterwards. Good storage will help the teacher to avoid making the same kind of instructional materials all the time and also save costs. The author adds that when adapting instructional materials for children with hearing impairment, the following factors should be considered; durability, attractiveness, age appropriateness, cost effectiveness, availability of raw materials, relevance, usability, possibility to improvise, storage and care. Ministry of Education and Sports (2008) explains that before adapting instructional materials for learners with hearing impairment it is vital to identify any unique feature in a child and plan for him / her appropriately. In particular, the teacher should use appropriate colors that can attract the child's attention or vision.

Tomlison and Musuhara (2004) claims that adaptation tends to be thought of, as a formal process in which a teacher makes a decision about an exercise that needs changing and then writes out a revised version for the class. Adapted materials don't necessarily need to be written or made permanent. It can be quite transitory. For instance, when a teacher rewords a text book explanation of a language point that has not been understood, it is adaptation.

The author gives the following procedures of adapting textbooks to make them more effective instructional materials for learners with hearing impairment: adding, deleting, modifying /rewriting, simplifying and recording.

### **Adding**

This implies that materials are supplemented by putting more in them while taking into account to practical effect on time allocation for instance if a learner finds the explanation of a new grammatical point difficult, further exercises are added before the learners begin the practice.

### **Modifying /Rewriting**

This is the act or process of changing something in order to improve it or making it more acceptable. Rewriting is encouraged because it may relate activities more closely to learners' own background and interests.

### **Simplifying**

Simplifying is mainly done on texts most especially to reading passages. Simplifying can be done according to sentence structure by reducing the length of the sentence or by rewriting a complex sentence or simplifying of content of subject matter regarded as being too advanced. .



## **Deleting**

This involves taking out a material and then replace it with something else.

## **Reordering**

This procedure refers to the possibility of putting the parts of a course book in a different order.

This may mean adjusting the sequence of presentation within a unit, or taking units in a different sequence from that originally intended.

Richards (2000) explains the following ways of adapting instructional materials to suit the needs of learners with hearing impairment;

### **Modifying content**

Content may need to be changed because it does not suit the target learners, perhaps because of factors related to the learners. age, gender, social class, occupation, religion or cultural background.

### **Adding or deleting content**

The book may contain too much or too little for the program. Whole units may have to be dropped, or perhaps sections of units throughout the book omitted. For example, a course may focus primarily on listening and speaking skills and hence writing activities in the book will be omitted.

### **Reorganizing content**

A teacher may decide to reorganize the syllabus of the book, and arrange the units in what she considers a more suitable order. Or within a unit the teacher may decide not to follow the sequence of activities in the unit but to reorder them for a particular reason.

### **Addressing omissions**

The text may omit items that the teacher feels are important. For example, a teacher may add vocabulary activities or grammar activities to a unit.

### **Modifying tasks**

Exercises and activities may need to be changed to give them an additional focus.

For example, a listening activity that focuses only on listening for information is adapted so that students listen a second or third time for a different purpose. Or an activity may be extended to provide opportunities for more personalized practice.

### **Extending tasks**

Exercises may contain insufficient practice and additional practice tasks may need to be added.

Tomlinson and Musuhara (2004) states that it is important to do material evaluation. The author defines material evaluation as procedure that involves measuring the potential value of a set of instructional materials. Evaluation focuses largely on the needs of the users and make subjective judgments about their effects. Evaluation can be carried out pre-use, in- use or post-use. The main aim of evaluating instructional materials pre-use is to measure the potential of what teachers and learners can do with them in the classroom. In-use and post –use evaluation are important in establishing how successful instructional materials are (McDonough and Shaw 2012).

The Government of Uganda (1992) indicates that all educators are responsible for the education of all learners and the teaching style must be adapted to cope with this diversity. The researcher supports the opinion of Pottas (2005) who recommends that adaptations of instructional materials provided in inclusive settings would shed light on the feasibility of learners with HI in mainstream education, especially in the rural areas of South Africa through creating modifications on the teaching materials by drawing pictures on words in abstract order from the

existing teaching materials (SADE, 2001). According to the study conducted in Zimbabwe on noise factors and illumination, reported that, a certain level of working noise is tolerated particularly in situations where students are using a variety of resources or working on group tasks.

There is need to add carpets, window treatments, or acoustical wall/ ceiling coverings to absorb sound and reduce noise from furniture scrapping on hard surfaces by attaching rubber shoes to the legs of students' desks and chairs. The classrooms should also be well lit to enable the hard of hearing and deaf students to properly visualize the pictorial instructional materials, speech reading and to read the signs(El-zraigat, 2012). Accommodations, modification of instructional materials, individualized learning systems are identified to be appropriate for learners with hearing impairment. This is factual as regards to the researcher's experience because it is a pivot in increasing on their levels of class activity participation and positively impacts on their self-esteem (Someth and Lewin, 2012).

In the Ugandan context, the situation is somehow different from the above representation. There are children with multiple forms of disabilities who have enrolled for school. This is backed up by the Ugandan Constitution (1995) article 30 which makes education a human right and article 34 that prohibits discrimination of an individual from joining education on grounds of disability, creed or religion affiliation, or social or economic standing, political opinion. Adapted instructional materials accomplish 83% of what is learnt through sight activating learners in the learning process for they make the learning become very interesting. A further clarification is made by a Chinese saying, "If I hear I forget, if I see I remember, if I do I know". He adds that some of the concepts become more visible and self-explanatory from the diagrams. It reduces the

language demands especially for learners with hearing impairments. Recalling back of what has been learnt is much easier from diagrams or pictures (Harrison, 1994).

According to the researchers' observation, when the pictures (or charts are displayed in the classrooms, then even in the absence of the teacher, the learners can look at the charts and review their own work. They can also connect ideas and remember other related facts. For example, when a class six learner looks at a diagram showing parts of a flower, he or she can recall their functions and whether it is wind, insect or self-pollinated. The above statement confirms the researchers' views that adapted instructional materials are prerequisites for the realization of Education for All. To ensure that all children have access to quality education, education policies and practices must be inclusive to all learners, encourage the full participation to all, and promote diversity as a resource, rather than as an obstacle (Someth and Lewin, 2005).

Inclusive education for all will pave the way to prosperity for individuals and for the society, at large. This prosperity will, in turn, lead to a more peaceful and sustainable development of humanity offering a holistic, practical means of making schools and classrooms more inclusive, learning friendly focusing on the specific issues that need to be addressed when teaching people with disabilities through providing practical guidelines to successfully teach children with disabilities.

Besides adapting learning materials, developing language skills, and especially automatized (unconscious) language skills such as the activation of word meaning has also been shown to be an essential contributor to other complex cognitive abilities. It is better for teachers to raise their voice deliberately, speak too slowly, or exaggerate oral movements excessively. This helps in skills development. The learner will know how to cope up with friends by following their lip movement (Marschark *et al.*, 2002).

Amplification options of Personal hearing devices, frequency modulation systems, communication accommodation, reduced visual distractions, presenting simple structured words/sentences or charts in a sequential manner are the Categories of adapting of instructional materials Chakuchichi (2003). Allowing learners extra time for processing information during the lesson progress, physical/environmental accommodation, Room design modification, specialized lighting, Floor charts use of Pictograms and graphics, are ideal for explaining procedures of locating information (Someth and Lewin, 2005). Having extensively discussed factors on how instructional materials are adapted for learners with hearing impairment it is important that we look at challenges faced by teachers while adapting instructional materials for learners with hearing impairment.

### **2.2.3 Challenges Encountered by Teachers when Adapting Instructional Material for Learners with Hearing Impairments**

Majority of children with disabilities in developing countries of Africa are out of school. This is attributed to unequipped schools, and a lack of instructional and assessment tool. This therefore requires adaption of instructional materials (El-zraigat and Smadi 2012). In a bid to enhance vivid lessons for learners with hearing impairments, teachers face a number of challenges for instance, meager budget lines to cater for the required instruments to help in the adapting of instructional materials for their learners with hearing impairment. Therefore, one would need to understand these setbacks to design policies and mechanisms for effective teaching of children with hearing impairments in normal/ordinary classrooms. Some of these challenges are reviewed below.

The first one is lack of clear policies on inclusive education in some countries. For instance, according to the study by (Gronlund *et al.*, 2010), Tanzania does not have specific policies on

inclusive education. Inclusive education is mentioned in some of the policy documents such as disability policy and education and training policy but these policies do not state how inclusive education should be implemented, monitored and evaluated. The study revealed that instructional materials for students with special needs are lacking. In my own view, this is a common problem whereby in Uganda, there is limited information on the adaptation of instructional materials for children with hearing impairment. The policy on disability education does not speculate specific disabilities. It is rather a combined policy.

Another challenge is inadequate knowledge. This is emphasized in a number of studies. For example, the study by Kesiktas and Akcamete (2011), determined the degree to which the professional standards for Turkish teachers of learners with hearing impairments were addressed during pre-service training and the degree to which the in-service teachers of hearing impairment implemented these professional standards. Findings of the study showed that, there is insufficient knowledge and skills among teachers regarding implementation of inclusive teaching for learners with hearing impairments in ordinary classrooms. Another study by Miles (2003) conducted in Temeke district explored appropriate and sustainable ways of building capacity of key stakeholders in education to reflect, analysis and documentation revealed that in inclusive education some teachers do not possess the required knowledge to address the problems of children with hearing impairments. In my own view, it seems that some teachers in ordinary schools do not possess enough knowledge to adapt instructional materials for children with hearing impairments. This means that such teachers need training in the adaptation of instructional materials for learners with hearing impairment.

Apart from lack of knowledge, there is also another challenge of inadequate resources and poor participation of parents. The study analysis from Simon (2010), found out that schools do not have appropriate teaching and learning resources to help learners with hearing impairment learn

better in normal classrooms. Additionally, the study found that, there is a lack of collaboration and participation of parents in the educational affairs of their children. Moreover, the findings revealed that teachers do not have enough knowledge of inclusion and how to teach learners with hearing impairment in inclusive classrooms. In my own view, it seems that in some schools, there is lack of the resources which can be used in the adaptation of instructional materials to facilitate the teaching and learning of children with hearing impairment. Some parents are also not supportive when it comes to making contribution towards equipment or input needed by teachers to adapt such materials to enhance the learning of children with hearing impairment which limits their learning.

Teachers encounter financial problems which create a setback in the adaptation and use of instructional materials for many schools especially those in rural setting (Musibala, 2001). The author also observes that majority of the teachers lack training in high technology because they are not given opportunities in training institutions in the adaptation and use of high technology instructional materials. The research is in line with Musibala (2001) who claimed that indeed majority of teachers lack knowledge in high technology to facilitate them in the process of adapting instructional materials. Adaptation of materials is difficult due to lack of experience and understanding on the side of teachers because they hardly have any formal training before they take up the teaching profession. In addition to the above challenge many teachers are not motivated to adapt materials due to the constraints on them from the institution(s) where they work (McDonough 1993).

El-Zraigat and Smadi (2012), claims that teachers are not well trained in the teaching children with hearing impairment; this limits them to have basic skills necessary to adapt appropriate instructional materials for learners with hearing impairment. This is because they are they are not

qualified to teach children with hearing impairment. Another challenge mentioned is that schools are suffering from lack of financial supports necessary for meeting teachers needs as far as adapting instructional materials is concerned. Bedoin (2011) says that teachers encounter several challenges such as unequipped schools, lack of instructional and assessment tools and insufficient teachers which hinders effective adaptation of instructional materials.

### **2.3 Summary**

Based on the literature reviewed, adaptation of instructional materials for learners with hearing impairment is necessary. I have noticed that several instructional materials can be adapted to facilitate the learning of children with hearing impairment. Literature has shown that children's needs, unique characters, age, gender, culture, abilities, disabilities and content to be taught should be considered in the process of adapting institutional materials. Literature further reviews that teacher encounter several challenges which limit them from adapting instructional materials. Some of them are lack of basic skills and knowledge necessary to adapt instructional materials, financial problems, lack of collaboration and participation of parents in education affairs of their children. In the chapter that follows the research methodology that follows.



## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.0 Introduction**

This chapter presents the research design. The aspects of focus were; study area, study population, sampling technique, sample size, data collection methods. This chapter also explained data collection procedure, data quality control, data processing, analysis and research ethical considerations.

#### **3.1 Research Design**

A research design is a plan that guides one in carrying out the study from the beginning to the end (Yin, 2003). In this study, a case study with qualitative methods of data collection was used. This is because the researcher wanted to interact with the participants in order to explore the extent to which instructional materials are adapted for children with hearing impairment in primary schools in Goma division in Mukono municipality.

#### **3.2 Study Area**

The study was conducted in Goma Division, Mukono municipality in Mukono district because it is the sub-county with a school that offers education to children with hearing impairment and was also convenient for the researcher to conduct the study in. Refer to appendix II (Map of Uganda showing Mukono District and appendix III Map of Mukono District showing Mukono Municipality).

### **3.3 Target Population**

According to Lokesh (1998), population is any collection of a specified group of human beings or non-human entities such as objects, education institutions, time units and geographical area. For this case, the target population of the study comprised 27 teachers who are employed in the selected school. The Head teacher was also included in the population because he is the immediate supervisor in the school and responsible for overseeing the implementation of the school curriculum.

### **3.4 Sampling**

For the purpose of the study, the researcher used purposive sampling for selecting the teachers. Special Needs Education Teachers (SNET) were considered because they are the people who should be responsible for the adaptation of instructional materials for learners with hearing impairment and hence, were expected to be information rich. The researcher made a preliminary inquiry to obtain the sample from the head teacher.

### **3.5 Sample Size**

The total sample size comprised of 8 participants, both males and females. The sample was ideal because it was expected to enable the researcher to gather sufficient detailed information for the study. This is supported by Cohen et al. (2000) who affirms that the sample enhances reliability and is an important criterion for judging the merit of a case study.

**Table 4:**

**Showing the Sample Size of the Study Population**

| <b>POPULATION</b>                | <b>TARGET<br/>SIZE</b> | <b>SAMPLE</b> | <b>TECHNIQUESUSED<br/>FORSELECTION</b> |
|----------------------------------|------------------------|---------------|--|
| Special Needs Education Teachers | 07                     | 07            | Purposive sampling                     |
| Head teacher                     | 01                     | 01            | Purposive sampling                     |

*Source: Primary*

### **3.6 Data Collection Methods and Instruments**

The researcher used qualitative data collection methods. The choice of the method was guided by the objectives of the study. Bell (2005), states that methods for data collection should be aligned to the objectives of the study in order to generate the information required.

#### **Interviews**

An interview is a method used to gain an understanding of the underlying reasons and motivations for people's attitudes, and preferences (Borg and Gall 1989). The researcher used semi-structured interview. This enabled her probe the respondents' views on the phenomenon and provided her with the opportunity to modify questions that were not clear. (Gallet *al.*, 2007).

Secondly this type of interview was used because of its flexibility in generating more data for the study (Rule and John, 2011). Furthermore, it enabled the researcher to obtain first-hand information of the social world by observing people, listening to them and looking at documents they produce (Creswell, 2007).

The interview was used for eliciting information from special needs education teachers and the head teacher on the adaptation of instructional materials for children with hearing impairment. In

order to obtain data through interviews, the researcher developed an interview guide basing on objectives of the study.

Furthermore, my choice to use interviews was based on the fact that interviews require simple instruments for data collection (Creswell, 2007). Interviews give an opportunity for the participants to understand a situation very well (Yin, 2003). An interview was the key method for collecting information from classroom teachers on the adaptation of instructional materials in teaching learners with hearing impairment. They provided the researcher with the chance of reading the verbal and non-verbal communication of participants which was not easy to control from the participants because the participants had enough time to really express themselves and showed their experiences in terms of supporting the children with hearing impairment in their education both at home and school.

In order to obtain data through interview method, I developed a semi-unstructured interview guide. Refer to Appendix IV (interview guide for teachers). The use of a semi-unstructured interview guide is recommended by Rule and John (2011) for its flexibility in generating more data for the researcher.

## **Observation**

Creswell (2007) describes observation as a method of collecting data by observing the real situations without bias. In this study, the researcher used an open observation guide to observe resources used for adapting instructional material, how they are adapted to suit the needs of children with hearing impairment and the challenges are encountered. The researcher also observed teachers in the teaching - learning process, the classroom environment and the general school environment. Refer to appendix V (observation guide) and appendix VIII indicating pictures of instructional materials and participation of learners in the class.

### **3.7 Data Collection Procedure**

Before going to the field to collect data, the researcher wrote to the Dean of Graduate School requesting for an introductory letter officially introducing her to the Municipal Education Officer (MEO) to conduct a research from the selected primary schools. Refer to Appendix VI indicating a letter from the department of Special Need Studies. Upon receiving permission, the researcher then paid a preliminary visit to the selected schools to make appointments for data collection. The first contact person was the head teacher who then introduced the researcher to the other teachers. During the process of collecting data, the researcher took record of responses from participants in a note book.

### **3.8 Data Analysis**

The researcher used qualitative content analysis. Therefore, field notes from interviews were checked to ensure that they are comprehensive and contain relevant details. The researcher then transcribed field notes with relevant details identify significant statements and then clustered them into categories based on objectives.

#### **Coding**

This process involved attaching labels to the categories of data in relation to the objectives of the study using the first three letters of the alphabet, to code the data as follows; A for objective 1, B for objective 2 and C for objective 3. This helped in identifying specific responses for each objective.

### **3.9 Research Ethical Considerations**

Ethical considerations in research are a set of values that professionally guide researchers when conducting investigations (Norton, 2009). Further, Norton (2009) affirms that though ethical

issues vary from profession to profession, the common ones are honesty, objectivity and confidentiality. In order to ensure the research successful, I considered the ethical issues (Creswell, 2007). First and foremost, I had to seek clearance from Kyambogo University; I then went to Mukono Municipality headquarters to request for a letter from the Municipal Education Officer (MEO) introducing me to the schools I had chosen. When I went to schools I presented the letter to the school head teacher and introduced myself. I briefly talked about the research topic. I went ahead and explained to the head teacher the participants I was interested to work with. I had to seek consent from the participants and further requested the schools to help me identify the teachers that I could interview refer to appendix VII indicating the consent form for participants. I guarded against any unethical practices that could arise during and after the study by ensuring the following processes;-

- a) Privacy and confidentiality. I reassured the participants that the information given was strictly private and confidential by not publishing the given data.
- b) Voluntary participation by participants and consent. I got consent from the participants to get information, take and use photographs in the study.
- c) Personal conflict as a teacher in the area. To avoid this, I gave proper identification of myself and what I am doing assuring the participants that it's for study purposes only.

## CHAPTER FOUR

### DATA PRESENTATION AND INTERPRETATION

#### 4.0 Introduction

This chapter presents the findings of the study. The study sought to examine the extent to which instructional materials are adapted for learners with hearing impairment in primary schools in Goma Sub-County Mukono Municipality.

The study found out instructional materials that are adapted by teachers in the teaching of learners with hearing impairment, analyzed how instructional materials are adapted for children with hearing impairment and to established challenges uncouncted by teachers when adopting instructional materials for learners with it.

#### 4.1 Analysis of Respondent's Demographic Information

This section presents the general information of respondents in the study. Table 5 shows information on respondents' gender.

**Table 5:**

#### Gender of Respondents

N=8

| Gender       | Frequency | Percentage  |
|--------------|-----------|-------------|
| Male         | 2         | 25%         |
| Female       | 6         | 75%         |
| <b>Total</b> | <b>8</b>  | <b>100%</b> |

*Source: Primary*

Findings in Table 5 shows that 25% of the respondents were male while 75% were female. These findings mean that the two genders were represented in the sample. However, there were more female respondents who participated than their male counterparts.

**Table 6:**

**Teachers' Teaching Experience**

| <b>Experience</b>  | <b>Frequency</b> | <b>Percentage</b> |
|--------------------|------------------|-------------------|
| 5-10 years         | 3                | 37.5%             |
| 10 years and above | 5                | 62.5%             |
| <b>Total</b>       | <b>8</b>         | <b>100</b>        |

*Source: Primary*

Table 6 indicates that data was obtained from 8 teachers. The results revealed that 37.5% of the teachers had teaching experience of 5-10 years while 62.5% of the teachers had teaching experience of 10 years and above.

**Table 7:**

**Marital Status of the Respondents**

| <b>Status</b> | <b>Frequency</b> | <b>Percentage</b> |
|---------------|------------------|-------------------|
| Married       | 6                | 75%               |
| Single        | 2                | 25%               |
| Divorced      | 0                | 0%                |
| <b>Total</b>  | <b>8</b>         | <b>100%</b>       |

*Source: Primary*



Table 7 above shows that 75% of the respondents were married while the remaining 25% were single. None of the respondents was divorced.

**Table 8:**

**Teachers' Level of Qualification**

| <b>Qualification</b> | <b>Frequency</b> | <b>Percentage</b> |
|----------------------|------------------|-------------------|
| Grade III            | 0                | 0%                |
| Diploma              | 6                | 75%               |
| Degree               | 2                | 25%               |
| Masters              | 0                | 0%                |
| <b>Total</b>         | <b>8</b>         | <b>100%</b>       |

*Source: Primary*

Table 8 depicts that as far as teachers' level of qualification is concerned, 25% were degree holders compared to 75% who were diploma holders. All respondents' qualifications were above grade III and below Masters level. This implies that data was got from the right people.

**4.2 Objective One: Instructional Materials Adapted for Learners with Hearing**

**Impairment**

The objective one sought to find out the instructional materials that are adapted by teachers. The data shows that teachers adapted various instructional materials which include drawings, pictures, flash cards, maps, puzzles, puppets, games, textbooks, demonstration, real objects, drama, charts and real objects. When asked about the materials that they adapt, one teacher said that;

*As a teacher, you need to be creative when teaching children with hearing impairment. I keep on interchanging different instructional materials depending on the content and subject taught. For example, in mathematics I use bottle tops, sticks, stones and other real materials.*

Another respondent pointed out that she also adapted puzzles, puppets and games because they are the cheapest and help the children to understand well.

In the views of a teacher, she said that she adapted text books, local materials like real objects, and flash cards. She said that this helps children with hearing impairment to remember, understand and practice what they have learnt. She said,

*When adapted instructional materials are used, it gives children chance to be creative in developing their own materials and even practicing that content learnt.*

Concerning instructional materials adapted for learners with hearing impairment, another respondent said that he adapted charts and real objects in teaching learners with hearing impairment in his school.

According to another teacher, she said that she adapted charts and audio visual materials to teach learners with hearing impairment. Her reason for adapting these instructional materials was that they create a better understanding of the content and aid memory. In her own words, she stated,

*I mostly use charts to convey my messages to learners with hearing impairment. Charts are cheap and easily available; in fact, I can modify them at any given time in order to suit the content that I would wish to deliver to the learners. I also used the audio visual materials but they got spoilt and not easily replaced since the support from the administration is inadequate.*

It was also mentioned by a respondent who said that she adapted the local environment and text books. She further stated that the adapted instructional materials help learners to follow what is delivered. Another respondent added that the adaptation of the local environment and text books creates full participation of learners since it is real and interesting. The respondents said,

*In teaching learners with hearing impairment, the first thing that comes to my mind is the local environment. There are some of the learners who are hard of hearing and can therefore hear something if in close range without any distortions. Such learners need a quiet environment so as to effectively learn. I also ensure to have as many text books as possible and some are given to the learners so that I deliver as we move with them on the same page.*

The data however also indicates that the teachers do not adapt electronic technologies such as videos, computer programs among others.

Another teacher said that;

*I do not adapt electronic technologies like videos and computer programs simply because they are expensive and not easy to find in our environment. However, I am aware of their effectiveness in teaching learners with hearing impairment.*

#### **4.3: Objective Two: Process of adapting Instructional Materials for Learners with Hearing Impairment**

The second objective of the study was to find out the process of adapting instructional materials for learners with hearing impairment. The data showed that respondents were of the view that factors like age, durability and safety were considered when adapting instructional materials for learners with hearing impairment.

A teacher said that they consider age, durability and safety. She further explained that for children in lower classes, instructional materials like puzzles, real objects, number cards, locally made clock faces, abacus and the local environment are adapted mostly because they make children to actively participate as they grasp the content that is being given to them. In her own words, a teacher said,

*Age is important to be considered in the process of adapting instructional materials because children in lower classes learn much and incidentally through the use of attractive instructional materials such as jug saws, puzzles and real objectives.*

In addition to that, another respondent also said that age of a learner dictates the nature of instructional material to be adapted.

*Learners interests depend so much on age. So it is vital to put into consideration the aspect of age when adapting instructional materials because what is preferred by children in lower classes can be different from learners in upper classes.*

In the views of another respondent, she noted that another factor to be considered when adapting a particular instructional material is its durability. She noted that some materials are not durable and thus are adapted for a very short time which hinders the learning process. She adds that there is a need to ensure that the durability of an instructional material is considered before adapting one. She said that,

*In the process of adapting instructional materials, it requires one to adapt materials which are durable because it is tiresome to adapt instructional materials from time to time. Materials such as bottle tops and old boxes last longer if used compared to manila cards or paper.*

Similarly, another teacher said that age of the learners is considered when adapting a particular instructional material. She also mentioned that the number of pupils is also a major factor that determines the instructional materials to be adapted.

Another respondent explained that before adapting instructional materials for learners with hearing impairment it was vital to identify any unique feature in a child and plan for him / her appropriately. It was noted that the teacher should identify colors that attract their learners and appropriately use them in the process of adapting instructional materials and this created full attention and participation of the learners.

The teachers also gave their views regarding the procedures of adapting textbooks to make them more effective instructional materials for learners with hearing impairment. They generally mentioned adding, deleting, modifying/ rewriting, simplifying and recording.

A teacher said;

*In the process of adapting instructional materials, the available materials are supplemented by putting more in them while taking into account the practical effect on time allocation. For example, if a learner finds the explanations of a new grammatical point difficult, more exercises are added before the learners begin the practice.*

Another teacher responded by saying that;

*We always modify instructional materials like textbooks by changing something in order to make them more suitable and relating activities more closely to learners' own background and interests.*

In addition to the above, another teacher proposed reorganizing content is another procedure of adapting instructional materials. She stated;

*I may decide to reorganize the order of the book and arrange its units in a more suitable order so as to make it more adaptable to teaching learners with hearing impairment.*

The findings also showed that teachers first prepared raw materials to use then made arrangements to start the process of adapting. This was because the researcher found some raw materials such as palm leaves and banana fiber in the class. This implied that teachers were organized.

Pertaining to the people involved in the adaptation, results showed that teachers are the key people involved in the adaptation. In her own words, one of the teachers said,

*It is the teacher's responsibility to adapt instructional materials depending on the content, age and needs of children.*

Concerning how materials for co-curricular activities had been adapted, it was found out that children under the guidance of the teacher made their own instructional materials. These materials were adapted using local materials such as paper, banana fiber, polythene bags and used rubber.

#### **4.4: Objective Three: Challenges Encountered by Teachers when Adapting Instructional Material for Learners with Hearing Impairment**

The objective sought to find out the challenges encountered by teachers when adapting instructional materials for learners with hearing impairment. The data shows that teachers lacked knowledge and materials to enable them adapt the instructional materials. Materials were not easily available and that they were expensive.

In her own words, a teacher said;

*Due to the fact that the school is located in an urban area, it is hard to get local materials such as sisal, palm leaves and banana fiber, yet it is vital for these children to get exposed to different instructional materials adapted using local materials to promote their creativity and imagination skills. The school administration endeavors to provide teachers with some money to buy materials such as colors, threads and markers but they are not adequate to cater for the needs of all learners with hearing impairment in the school.*

It was also mentioned by a teacher that the materials were expensive. It was noted that inadequate materials to use in the process of adapting instructional materials made teachers to teach in abstract which made children with hearing impairment to lag behind.

The study found out that some teachers lacked knowledge to effectively adapt instructional materials. This was majorly due to lack of formal training in adaptation of instructional materials for learners with hearing impairment. In his own words, the head teacher said,

*We are currently having a challenge of few staff who are trained to teach learners with hearing impairment but efforts are being put together to ensure that this issue is resolved.*

The data collected also revealed that teachers faced budget constraints and limited information on the adaptation of instructional materials for learners with hearing impairment.

A teacher said;

*We are faced with a major challenge of limited finances to procure materials in adapting instructional materials. Some of these materials are costly and end up adapting very few instructional materials which are not enough for the learners.*

Another teacher said that there are policies about inclusive education that are not implemented;

In her own words she said:-

*There are policies on inclusive education in Uganda, but the challenge is that most of these policies remain on paper and are not usually implemented. I believe that if these policies were implemented, then the adaptation of instructional materials would not be a challenge.*

It was also stated by a teacher that there is general lack of knowledge about adaptation of instructional materials, he said;

*Some teachers to date do not have sufficient knowledge about the adaptation of instructional materials. They still find it hard to make the available materials adaptable to the teaching of learners with hearing impairment.*

In summary, data therefore, indicates that teachers encountered several challenges in the adaptation of instructional materials for learners with hearing impairment. This affects their education, but there are several ways which can help teachers to overcome challenges such as improvising and consultation among others.

## **CHAPTER FIVE**

### **DISCUSSION, CONCLUSION AND RECOMMENDATIONS**

#### **5.0 Introduction**

This study was designed to examine the extent to which instructional materials are adapted for learners with hearing impairment in primary schools in Goma Division, Mukono Municipality. The study was guided by objectives which were to; explore instructional materials that are adapted by teachers in teaching learners with hearing impairment, explore how instructional materials are adapted for children with hearing impairment and establish challenges encountered by teachers when adapting instructional materials for learners with hearing impairment. Data was collected through observation and interviews with the head teacher and teachers.

#### **5.1 Discussion**

The findings presented in chapter four are discussed in relation to the objectives of the study.

##### **5.1.1 Instructional Materials Adapted by Teachers when Teaching Children with Hearing Impairment**

The findings indicated that an attempt is made to adapt instructional materials for learners with hearing impairment. Some of the instructional materials adapted according to the findings included charts, real objects and text books. The study established that most of the teachers used charts, real objects and text books because they were easily available and easy to adapt.

The findings are in line with Richards *et al.* (2000) who states that textbooks are a key component in most language programs. In some situations, they serve as the basis for much of the language input learners receive and the language practice that occurs in the classroom. The author adds that textbooks may provide the basis for the content of the lessons, the balance of



skills taught and the kinds of language practice the students take part in. In other situations, the textbook may serve primarily to supplement the teacher's instruction. For learners, the textbook may provide the major source of contact they have with the language apart from input provided by the teacher. In the case of inexperienced teachers, textbooks may also serve as a form of teacher training. They provide ideas on how to plan and teach lessons as well as formats that teachers can use. Much of the language teaching that occurs throughout the world today could not take place without the extensive use of commercial textbooks. Learning how to use and adapt textbooks is hence an important part of a teacher's professional knowledge.

Findings also indicated that teachers adapt charts this finding is related to the Ministry of Education and Sports (2008) where charts are mentioned as one of the adapted instructional materials. It is explained that instructional materials like charts facilitate learning and visual inputs of learners with hearing impairment.

Findings also showed that teachers don't adapt electronic technology such as video and computer programs because it is expensive and teachers lack necessary skills yet Clerk (2016) mentions electronic technology to be effective in the teaching of children with hearing impairment.

### **5.1.2 The Process of Adapting Instructional Materials for Learners with Hearing Impairment**

Findings concerning factors considered in adapting instructional materials for learners with hearing impairment show that age are an important aspect to look at. Other considerations mentioned by the respondents were durability, safety of the instructional materials, and number of learners, ability, content to be covered, relevancy, and availability of raw materials to use. The findings are in agreement with Rodriguez-Gonzalez (2012) who postulated that teachers should lay great emphasis on the learner's age, gender, culture, abilities and disabilities as they adapt

instructional materials and select appropriate strategies for delivery of instruction and then apply a universal design to all course activities.

The findings also indicated that in the process of adapting instructional materials, care should be taken in identifying likes and dislikes of the learners. These unique features can refer to the color that the child likes or certain materials as observed during the interactions with him or her. The findings are in line with Ministry of Education and Sports (2008) who explain that before adapting instructional materials for learners with hearing impairment, it is vital to identify any likes of a child and plan for him/ her appropriately. In particular, the teacher should use appropriate colors that can attract the child's attention or vision.

The data collected revealed that various stakeholders are involved in the adaptation of instructional materials for learners with hearing impairment. Findings showed that teachers, learners, parents, school management committee members and resource persons are the people involved in the adaptation of instructional materials. The findings are in line with Mushoriwa and Gasva (2008) who are of the view that teachers and parents should try and understand the problems of children and try to cooperate with them in the learning process by drawing maps in Geography, pie charts in Mathematics and diagrams in science so that learners can easily understand the lesson. They emphasize that teachers should try to stand at one place as they engage the attention of students with hearing impairment as they practically illustrate concepts using the adapted instructional materials.

Findings further revealed that procedures for adapting instructional materials included adding, deleting and modifying. During these procedures, it was noted that teachers can add information in materials like text books so as to suit the learning needs of learners with hearing impairment. These findings are in agreement with Tomlison and Musuhara (2004) who claims that adaptation

tends to be thought of, as a formal process in which a teacher makes a decision about an exercise that needs changing and then writes out a revised version for the class. He further mentioned that it can be quite transitory, for instance, when a teacher rewords a text book explanation of a language point that has not been understood, it is adaptation. Adapted materials don't necessarily need to be written or made permanent.

The researcher agrees with the above findings, indeed learners have individual differences which require special consideration in order to adapt suitable instructional materials to meet their needs. In addition different stake holders should be involved in the adaptation of instructional materials because of the different knowledge, skills and experience they have as far as instructional material adaptation is concerned.

### **5.1.3 Challenges Encountered by Teachers when Adapting Instructional Materials for Learners with Hearing Impairment**

Although there are several efforts made to adapt instructional materials for learners with hearing impairment, findings indicated that several challenges were encountered by teachers when adapting instructional materials.

Findings indicated that teachers encounter financial problems this finding is related to that of Musibala (2001) who revealed that teachers encounter financial problems which create a setback in adaptation and use of instructional materials for many schools especially those in rural setting.

Findings also indicated that teachers lack knowledge to adapt instructional materials this finding is in line with Musibala (2001) who stated that majority of teachers lack knowledge in high technology to facilitate them in the process of adapting instructional materials for children with hearing impairment.

Findings indicated that there is lack of clear policies concerning adaptation of instructional materials. The teachers stressed that the country has many policies that govern inclusive education but the challenge was in the implementation. This is in line with Gronlund *et al.* (2010) who stated that Tanzania does not have specific policies on inclusive education. Inclusive education is mentioned in some of the policy documents such as disability policy and education and training policy but these policies do not state how adaptation of instructional materials should be implemented, monitored and evaluated.

Findings show that there is lack of resources due to budget constraints. Adaptation of instructional materials requires some financial input which in most cases is not readily available thus posing a major challenge. The findings are in line with Simon *et al.* (2010) who found out that schools do not have appropriate teaching and learning resources to help learner with impairment.

Besides the above findings, the following instructional materials were adapted by teachers teaching children with hearing impairment: models, frames charts, flash cards, crafts, balls and ropes. This showed that teachers have tried to adapt some instructional materials but to a certain extent they may not be enough to enhance the learning of learners with hearing impairment.

The findings also revealed that manila cards, news print, paper, markers, palm leaves, banana fiber, wood, color, nails, glue, water, polythene bags, clay, raffia, pieces of cloth and old boxes were some of the resources used by teachers to adapt instructional materials.

This meant that teachers had tried to exploit and adapt both the local materials and already made materials.

Finding also showed that teachers first prepare raw materials to use and then make arrangement to start the process of adapting materials. This is evidenced because the researcher found some raw materials such as palm leaves and banana fiber in the class. This implied that teachers were organized.

Pertaining to the people involved in the adaptation of instructional materials, findings indicated that teachers and learners are key people involved in the adaptation. This implied that there was a joint effort made to train learners with HI to adapt instructional materials. Also findings indicated that teachers consider age of learners, the needs of learners and availability of raw materials.

## **5.2 Conclusion**

The study examined the extent to which instructional materials were adapted for learners with hearing impairment in primary schools in Goma division. In spite of the limitation experienced by teachers, the main conclusion drawn from the findings was that there was an attempt made to adapt a variety of instructional materials for learners with hearing impairment which included real objects, charts, flash cards and text books among others, However, according to the observation made by the researcher it seems teachers adapt very few instructional materials as compared to those mentioned in the literature.

Secondly findings indicated that there are some aspects that are considered when adapting instructional materials. Most teachers considered age as an important factor which was good. However, on the other hand factors mentioned by the teachers vary, much as they are equally important. This implied that at a certain extent some learners needs may not be fully met which may impact on the academic performance of learners with hearing impairment.

Another finding is that there were several challenges encountered by teachers when adapting instructional materials for learners with hearing impairment. Among them were; lack of resources to use, expensive materials and negative attitude from stake holders, meager budget, lack of clear policies, limited knowledge on adaptation of instruction materials, lack of collaboration, lack of training in technology among others. This implied that teachers need to be trained to exploit the immediate environment fully and it is also vital to sensitize stake holders to positively change their attitude towards children with hearing impairment.

The finding generally points out the need to put in place some recommendation that may support teachers teaching learners with hearing impairment improve on the adaptation of instructional materials.

### **5.3 Recommendations**

From the study findings, many factors have been identified that hinder adaptation of instructional materials for learners with hearing impairment. However, it may not be possible to address all these factors within a short time. I therefore wish to put forward the following recommendations that may be adapted in order to support teachers teaching children with hearing impairment.

1. There is need for the ministry of education and sports in collaboration with Non – Governmental Organizations to build the capacity of teachers to enhance their ability to adapt instruction materials for learners with hearing impairment.
2. The special needs Education officer should do regulars supervision concerning education of children with hearing impairment not leaving out the issue of instructional material adaptation.
3. The Head teacher should give priority on issues concerning materials required in the adaptation of instructional materials for learners with hearing impairment.

4. Special Needs teachers should network with other stake holders who can help them adapt instructional materials for learners with hearing impairment.

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

Based on the findings of the study, there is need for other researchers to conduct further research on the following areas.

- i) Assessment of adapted instructional materials for learners with hearing impairment.
- ii) Integrating modern technology in the adaptation of instructional materials for learners with hearing impairment
- iii) Influencing stake holders to value adapting instructional materials for learners with hearing impairment.

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### Appendix I: SCHOOLS IN UGANDA HAVING CHILDEN WITH SPECIAL NEEDS

| SCHOOLS IN UGANDA WITH CHILDREN WITH SPECIAL NEEDS (SPECIAL SCHOOLS, UNITS AND INCLUSIVE ) 2017 |                     |                |           |                 |                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |        |   |   |
|---|---------------------|----------------|-----------|-----------------|---------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--------|---|---|
| SN  | S C H O O L         | Type of School | OWNERSHIP | DISTRICT        | TYPE OF SPECIAL NEED/DISABILITY |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |        |   |   |
|   |                     |                |           |                 | H                               |   | I |   | V |   | I |   | M |   | R |   | P |   | I |   | OTHERS |   |   |
|   |                     |                |           |                 | M                               | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F |        |   |   |
| 1   | A B E R P / S       | U n i t        | G A       | O Y A M         | 3                               | 0 | 2 | 1 | 1 | 7 | 1 | 0 | 4 | 1 | 2 | 2 | 3 | 2 | 0 | 2 | 1      | 1 | 6 |
| 2   | A G O L A P / S     | U n i t        | G A       | T O R O R O     | 8                               | 1 | 3 | 7 | 8 | 6 | 4 | 1 | 1 | 1 | 0 | 8 |   |   |   |   |        |   |   |
| 3   | A G U R U R U       | U n i t        | G A       | T O R O R O     | 3                               | 1 | 3 | 3 | 0 | 7 | 2 | 8 | 3 | 0 | 2 | 0 | 1 | 3 |   |   |        |   |   |
| 4   | A L E M E R E P / S | U n i t        | G A       | A M U L A T A R | 1                               | 3 | 1 | 2 | 1 | 9 | 1 | 4 | 5 | 4 | 5 | 2 | 0 | 0 |   |   |        |   |   |
| 5   | A M A N A N G P / S | Inclusive      | G A       | B U K W O       | 1                               | 4 | 1 | 0 | 7 | 1 | 2 | 3 | 9 | 2 | 7 | 2 | 1 | 4 | 0 |   |        |   |   |
| 6   | ANGAL GIRLS P/S     | U n i t        | G A       | N E B B I       | 0                               | 0 | 1 | 5 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0      | 0 | 0 |
| 7   | ANGWECIBANGE        | U n i t        | G A       | D O K O L O     | 2                               | 8 | 2 | 0 | 8 | 8 | 4 | 0 | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0      | 0 | 0 |
| 8   | ARUA DEM. SCHOOL    | U n i t        | G A       | A R U A         | 0                               | 0 | 1 | 2 | 3 | 0 | 5 | 7 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0      | 0 | 0 |
| 9   | A R U A P / S       | Inclusive      | G A       | A R U A         | 2                               | 5 | 6 | 3 | 1 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0      | 0 | 0 |
| 10  | A T A N G A P / S   | U n i t        | G A       | P A D E R       | 3                               | 1 | 1 | 9 | 1 | 2 | 1 | 2 | 9 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0      | 0 | 0 |
| 11  | BALITTA LWOGI P/S   | U n i t        | G A       | L U W E R O     | 5                               | 1 | 1 | 0 | 5 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0      | 0 | 0 |

**SCHOOLS IN UGANDA WITH CHILDREN WITH SPECIAL NEEDS (SPECIAL SCHOOLS, UNITS AND INCLUSIVE ) 2017**

| SN | S C H O O L                      | Type of School | OWNERSHIP | DISTRICT  | TYPE OF SPECIAL NEED/DISABILITY |     |     |     |        |     |     |     |     |        |
|----|----------------------------------|----------------|-----------|-----------|---------------------------------|-----|-----|-----|--------|-----|-----|-----|-----|--------|
|    |                                  |                |           |           | H I                             | V I | MR  | P I | OTHERS | H I | V I | MR  | P I | OTHERS |
|    |                                  |                |           |           | M                               | F   | M   | F   | M      | M   | F   | M   | F   | M      |
| 12 | BEMB HILL P/S                    | Inclusive      | G A       | LUWERO    | 4                               | 4   | 1   | 0   | 3      | 4   | 2   | 3   | 1   | 1      |
| 13 | BISHOP RWAKAIKARA P/S            | U n i t        | G A       | KIBAALE   | 2 7                             | 3 0 | 1   | 2   | 1 3    | 7   | 1 6 | 0   | 3   | 6      |
| 14 | BISHOP STUART DEM.               | U n i t        | G A       | MBARARA   | 1                               | 1   | 0   | 0   | 4 0    | 3 5 | 0   | 0   | 0   | 0      |
| 15 | BISHOP WESTMUKONO                | U n i t        | G A       | MUKONO    | 2 3                             | 1 3 | 1   | 3   | 2      | 2   | 0   | 0   | 0   | 0      |
| 16 | BISHOP WILLIS DEM. SCH           | Inclusive      | G A       | IGANGA    | 0                               | 0   | 3 0 | 2 2 | 0      | 0   | 0   | 0   | 0   | 0      |
| 17 | B R I M P / S                    | Inclusive      | G A       | B U K W O | 4                               | 6   | 1   | 3   | 1      | 1   | 2 1 | 1 1 | 0   | 0      |
| 18 | BUCKLEY HIGH                     | U n i t        | G A       | IGANGA    | 1 2                             | 2 4 | 0   | 0   | 0      | 0   | 0   | 0   | 1   | 2      |
| 19 | BUDADIRI GIRLS P/S               | U n i t        | G A       | SIRONKO   | 4 1                             | 3 1 | 0   | 0   | 0      | 0   | 0   | 0   | 0   | 0      |
| 20 | B U K W O P / S                  | Inclusive      | G A       | B U K W O | 1 0                             | 1 5 | 2 3 | 8   | 6      | 8   | 1 3 | 1 5 | 2   | 1      |
| 21 | BUMBO UNIT FOR THE DEAF          | U n i t        | G A       | M B A L E | 5 0                             | 3 5 | 0   | 0   | 0      | 0   | 0   | 0   | 0   | 0      |
| 22 | BUSHENYI CENTRE FOR THE DISABLED | U n i t        |           | BUSHENYI  | 1 0                             | 1 0 | 2   | 2   | 1 2    | 1 6 | 0   | 0   | 2   | 2      |

**SCHOOLS IN UGANDA WITH CHILDREN WITH SPECIAL NEEDS (SPECIAL SCHOOLS, UNITS AND INCLUSIVE ) 2017**

| SN | S C H O O L                                  | Type of School | OWNERSHIP | DISTRICT  | TYPE OF SPECIAL NEED/DISABILITY |     |    |     |        |     |     |     |     |        |
|----|--|----------------|-----------|-----------|---------------------------------|-----|----|-----|--------|-----|-----|-----|-----|--------|
|    |  |                |           |           | H I                             | V I | MR | P I | OTHERS | H I | V I | MR  | P I | OTHERS |
|    |  |                |           |           | M                               | F   | M  | F   | M      | F   | M   | F   | M   | F      |
| 23 | BUTAMBALA SCHOOL FOR THE DEAF                | Special school | P         | BUTAMBALA | 2 3                             | 2 7 | 0  | 0   | 0      | 0   | 0   | 0   | 0   | 0      |
| 24 | BUWOLOGOMA P/S                               | Inclusive      | G A       | IGANGA    | 7                               | 5   | 0  | 1   | 5      | 2   | 1   | 1   | 1   | 0      |
| 25 | C H E B O I P / S                            | Inclusive      | G A       | B U K W O | 4                               | 4   | 4  | 4   | 4      | 5   | 2 9 | 1 0 | 1   | 4      |
| 26 | CHEMURON P/S                                 | Inclusive      | G A       | B U K W O | 7                               | 2   | 6  | 2   | 1 2    | 9   | 2 1 | 8   | 0   | 0      |
| 27 | E D I O F E P / S                            | U n i t        | G A       | A R U A   | 2 3                             | 2 0 | 0  | 0   | 0      | 0   | 1   | 2   | 0   | 0      |
| 28 | ENTEBBE CHN'S WELFARE P/S                    | Special school |           | ENTEBBE   | 0                               | 0   | 0  | 0   | 3 2    | 2 7 | 0   | 0   | 0   | 0      |
| 29 | E R U B A P / S                              | U n i t        | G A       | A R U A   | 3 3                             | 3 0 | 0  | 0   | 0      | 0   | 0   | 0   | 0   | 0      |
| 30 | GOOD SAMARITAN SCHOOL FOR THE DEAF KITENGESA | Special school | P         | MASAKA    | 2 2                             | 2 4 | 0  | 0   | 0      | 0   | 0   | 0   | 0   | 0      |
| 31 | GOOD SHEPHERD SPECIAL SCH                    | Special school | P         | KABAROLE  | 2                               | 4   | 1  | 1   | 9 4    | 9 9 | 4   | 4   | 0   | 0      |

**SCHOOLS IN UGANDA WITH CHILDREN WITH SPECIAL NEEDS (SPECIAL SCHOOLS, UNITS AND INCLUSIVE ) 2017**

| SN | S C H O O L                         | Type of School | OWNERSHIP | DISTRICT | TYPE OF SPECIAL NEED/DISABILITY |     |    |     |        |     |     |    |     |        |
|----|-------------------------------------|----------------|-----------|----------|---------------------------------|-----|----|-----|--------|-----|-----|----|-----|--------|
|    |                                     |                |           |          | H I                             | V I | MR | P I | OTHERS | H I | V I | MR | P I | OTHERS |
|    |                                     |                |           |          | H I                             | V I | MR | P I | OTHERS | H I | V I | MR | P I | OTHERS |
| 32 | GOODWILL SPECIAL NEEDS DEM. ACADEMY | Special school | P         | WAKISO   | 0                               | 0   | 0  | 0   | 6      | 18  | 0   | 0  | 0   | 0      |
| 33 | G U L U H I G H                     | U n i t        | G A       | G U L U  | 0                               | 0   | 15 | 20  | 0      | 0   | 0   | 0  | 0   | 0      |
| 34 | GULU P/S ANNEX FOR THE BLIND        | U n i t        | G A       | G U L U  | 0                               | 0   | 23 | 26  | 0      | 0   | 0   | 0  | 0   | 0      |
| 35 | GULU PRISON P/S                     | U n i t        | G A       | G U L U  | 0                               | 0   | 0  | 0   | 24     | 32  | 0   | 0  | 0   | 0      |
| 36 | HASSAN TOURABI EDUC. CENTRE         | U n i t        | G A       | WAKISO   | 19                              | 13  | 0  | 0   | 0      | 0   | 0   | 0  | 7   | 4      |
| 37 | HORNBY HIGH SCHOOL                  | Inclusive      | G A       | KABALE   | 2                               | 5   | 1  | 6   | 5      | 3   | 0   | 0  | 0   | 0      |
| 38 | HORNBY JUNIOR SCHOOL                | Inclusive      | G A       | KABALE   | 0                               | 0   | 11 | 14  | 7      | 1   | 0   | 0  | 0   | 0      |
| 39 | I G A N G A S . S                   | Inclusive      | G A       | IGANGA   | 0                               | 0   | 25 | 15  | 0      | 0   | 0   | 0  | 0   | 0      |
| 40 | I K W E R A P / S                   | U n i t        | G A       | A P A C  | 0                               | 0   | 18 | 35  | 0      | 0   | 0   | 0  | 0   | 0      |
| 41 | ISHEKYE UNIT FOR THE HANDICAPPED    | Inclusive      | G A       | SHEEMA   | 15                              | 11  | 1  | 1   | 10     | 8   | 5   | 3  | 12  | 4      |

**SCHOOLS IN UGANDA WITH CHILDREN WITH SPECIAL NEEDS (SPECIAL SCHOOLS, UNITS AND INCLUSIVE ) 2017**

| SN | S C H O O L                                   | Type of School | OWNERSHIP | DISTRICT  | TYPE OF SPECIAL NEED/DISABILITY |     |     |     |        |     |     |     |     |        |
|----|---|----------------|-----------|-----------|---------------------------------|-----|-----|-----|--------|-----|-----|-----|-----|--------|
|    |   |                |           |           | H I                             | V I | MR  | P I | OTHERS | H I | V I | MR  | P I | OTHERS |
|    |   |                |           |           | H I                             | V I | MR  | P I | OTHERS | H I | V I | MR  | P I | OTHERS |
| 42 | KAKUMIRO BOYS                                 | Inclusive      | G A       | KIBAALE   | 2                               | 0   | 0   | 0   | 2 0    | 2 9 | 3   | 5   | 0   | 0      |
| 43 | KALASA MIXED DAY & BOARDING P/S               | Inclusive      | G A       | LUWERO    | 4                               | 4   | 1   | 1   | 8      | 1 0 | 1   | 1   | 4   | 2      |
| 44 | K A M E T P / S                               | Inclusive      | G A       | B U K W O | 1 2                             | 2 0 | 9   | 3   | 1 3    | 1 0 | 1 6 | 1 2 | 2   | 1      |
| 45 | KAMPALA SCHOOL FOR THE PHYSICALLY HANDICAPPED | Special school | G A       | KAMPALA   | 0                               | 0   | 0   | 0   | 3 8    | 4 5 | 3 4 | 3 1 | 5   | 9      |
| 46 | KAMURASI DEM SCHOOL                           | U n i t        | G A       | MASINDI   | 7                               | 8   | 1 4 | 1 5 | 1 1    | 1 4 | 3   | 1   | 1 2 | 5      |
| 47 | KAPCHORWA DEM. SCH                            | U n i t        | G A       | KAPCHORWA | 6                               | 5   | 1 7 | 6   | 4      | 4   | 2   | 1   | 0   | 0      |
| 48 | K A P K O R O S P / S                         | Inclusive      | G A       | B U K W O | 0 2                             | 0 6 | 0 7 | 0 9 | 1 5    | 6   | 5 5 | 3 6 | 0 7 | 0 2    |
| 49 | KASAMBYA UNIT FOR THE BLIND                   | U n i t        | G A       | MUBENDE   | 0                               | 0   | 1 7 | 1 5 | 0      | 0   | 0   | 0   | 0   | 0      |
| 50 | K A S H W A P / S                             | Inclusive      | G A       | KIRUHURA  | 1 1                             | 8   | 5   | 5   | 1 6    | 8   | 3   | 1   | 0   | 0      |
| 51 | K A T A K W I P / S                           | Inclusive      | G A       | KATAKWI   | 1 2                             | 4   | 0   | 0   | 0      | 0   | 0   | 0   | 0   | 0      |
| 52 | KATEERA BIIKIRA P/S                           | U n i t        | G A       | KIBOGA    | 5                               | 5   | 5   | 2   | 1      | 1   | 1   | 0   | 0   | 0      |

**SCHOOLS IN UGANDA WITH CHILDREN WITH SPECIAL NEEDS (SPECIAL SCHOOLS, UNITS AND INCLUSIVE ) 2017**

| SN | S C H O O L                         | Type of School | OWNERSHIP | DISTRICT  | TYPE OF SPECIAL NEED/DISABILITY |     |     |     |        |     |     |     |     |        |
|----|-------------------------------------|----------------|-----------|-----------|---------------------------------|-----|-----|-----|--------|-----|-----|-----|-----|--------|
|    |                                     |                |           |           | H I                             | V I | MR  | P I | OTHERS | H I | V I | MR  | P I | OTHERS |
|    |                                     |                |           |           | H I                             | V I | MR  | P I | OTHERS | H I | V I | MR  | P I | OTHERS |
|    |                                     |                |           |           | H I                             | V I | MR  | P I | OTHERS | H I | V I | MR  | P I | OTHERS |
| 53 | KATIKAMU SEBAMALA P/S               | Inclusive      | G A       | WOBULENZI | 1                               | 0   | 1   | 2   | 1 6    | 9   | 2   | 1   | 0   | 3      |
| 54 | KAVULE PARENTS SHOO L FOR THE DEAF  | Special school | P         | BUDAKA    | 3 4                             | 2 9 | 0   | 0   | 0      | 0   | 0   | 0   | 0   | 0      |
| 55 | K I N Y I N Y A P / S               | Special school | G A       | KYEGEGWA  | 4 5                             | 5 3 | 0   | 0   | 0      | 0   | 0   | 0   | 0   | 0      |
| 56 | K I R E K A H O M E                 | Special school | G A       | WAKISO    | 0                               | 0   | 0   | 0   | 4 3    | 3 6 | 0   | 0   | 0   | 0      |
| 57 | KISORO DEM. SCHOOL                  | U n i t        | G A       | KISORO    | 1 6                             | 1 9 | 1 1 | 9   | 1      | 1   | 4   | 2   | 3   | 2      |
| 58 | KITEEZI CENTRE FOR THE DISABLED CHN | Inclusive      |           | KAMPALA   | 1                               | 0   | 6   | 9   | 1 9    | 1 5 | 1   | 1   | 1   | 0      |
|    | KIWOLERA ARM P/S                    | U n i t        | G A       | KUMULI    |                                 |     |     |     |        |     |     |     |     |        |
|    | KOMUKUNYU GIRLS P/S                 | U n i t        | G A       |           | 0 0                             | 0 0 | 0 6 | 1 9 | 0 0    | 0 0 | 0 0 | 0 0 | 0 0 | 0 0    |
| 59 | K O R T E K P / S                   | Inclusive      | G A       | B U K W O | 6                               | 7   | 2 0 | 1 9 | 2 2    | 8   | 4   | 1 4 | 7   | 5      |

**SCHOOLS IN UGANDA WITH CHILDREN WITH SPECIAL NEEDS (SPECIAL SCHOOLS, UNITS AND INCLUSIVE ) 2017**

| SN | S C H O O L                        | Type of School | OWNERSHIP |   | DISTRICT  | TYPE OF SPECIAL NEED/DISABILITY |     |    |     |        |     |     |    |     |        |
|----|------------------------------------|----------------|-----------|---|-----------|---------------------------------|-----|----|-----|--------|-----|-----|----|-----|--------|
|    |                                    |                |           |   |           | H I                             | V I | MR | P I | OTHERS | H I | V I | MR | P I | OTHERS |
|    |                                    |                |           |   |           | H I                             | V I | MR | P I | OTHERS | H I | V I | MR | P I | OTHERS |
| 60 | KYAGWE ROAD P/S                    | Inclusive      | G         | A | KAMPALA   | 0                               | 0   | 13 | 3   | 10     | 6   | 2   | 2  | 3   | 3      |
| 61 | KYAMBOGO P/S                       | U n i t        | G         | A | WAKISO    | 0                               | 0   | 2  | 0   | 21     | 9   | 2   | 2  | 5   | 1      |
| 62 | K Y O M Y A                        | U n i t        | G         | A | WAKISO    | 22                              | 13  | 9  | 4   | 6      | 5   | 0   | 0  | 0   | 0      |
| 63 | L A R O O P / S                    | Inclusive      | G         | A | G U L U   | 23                              | 27  | 0  | 0   | 0      | 0   | 0   | 0  | 0   | 0      |
| 64 | LUTEETE MIXED P/S                  | Inclusive      | G         | A | LUWERO    | 7                               | 5   | 5  | 7   | 11     | 15  | 3   | 3  | 7   | 4      |
| 65 | LUWERO BOYS P/S                    | Inclusive      | G         | A | LUWERO    | 23                              | 28  | 0  | 0   | 11     | 20  | 0   | 0  | 0   | 0      |
| 66 | MAFUBIRA P/S                       | Inclusive      | G         | A | J I N J A | 0                               | 0   | 0  | 0   | 47     | 31  | 4   | 7  | 0   | 0      |
| 67 | M A K H A I P / S                  | Inclusive      | G         | A | M B A L E | 27                              | 35  | 0  | 0   | 0      | 0   | 0   | 0  | 0   | 0      |
| 68 | M A N J I Y A P / S                | u n i t        | G         | A | BUDUDA    | 78                              | 83  | 0  | 0   | 0      | 0   | 0   | 0  | 0   | 0      |
| 69 | MARTIN NKOYOYO INCLUSIVE P/S       | Inclusive      | P         |   | MUKONO    | 5                               | 4   | 19 | 14  | 4      | 2   | 0   | 0  | 3   | 5      |
| 70 | MASAKA SCH.FOR SNE                 | Special school | G         | A | MASAKA    | 45                              | 50  | 0  | 0   | 0      | 0   | 0   | 0  | 0   | 0      |
| 71 | MASINDI CENTRE FOR THE HANDICAPPED | Special school | G         | A | MASINDI   | 36                              | 32  | 0  | 0   | 37     | 36  | 5   | 4  | 0   | 0      |

**SCHOOLS IN UGANDA WITH CHILDREN WITH SPECIAL NEEDS (SPECIAL SCHOOLS, UNITS AND INCLUSIVE ) 2017**

| SN | S C H O O L                   | Type of School | OWNERSHIP |   | DISTRICT  | TYPE OF SPECIAL NEED/DISABILITY |     |    |     |        |     |     |    |     |        |   |   |   |   |   |   |   |   |   |
|----|-------------------------------|----------------|-----------|---|-----------|---------------------------------|-----|----|-----|--------|-----|-----|----|-----|--------|---|---|---|---|---|---|---|---|---|
|    |                               |                |           |   |           | H I                             | V I | MR | P I | OTHERS | H I | V I | MR | P I | OTHERS |   |   |   |   |   |   |   |   |   |
|    |                               |                |           |   |           | H I                             | V I | MR | P I | OTHERS | H I | V I | MR | P I | OTHERS |   |   |   |   |   |   |   |   |   |
|    |                               |                |           |   |           | H I                             | V I | MR | P I | OTHERS | H I | V I | MR | P I | OTHERS |   |   |   |   |   |   |   |   |   |
| 72 | MPONDWE P/S                   | Inclusive      | G         | A | M B A L E | 4                               | 2   | 5  | 8   | 0      | 0   | 0   | 0  | 0   | 0      |   |   |   |   |   |   |   |   |   |
| 73 | MBARARA MIXED                 | Inclusive      | G         | A | MBARARA   | 8                               | 1   | 7  | 2   | 0      | 3   | 0   | 1  | 2   | 6      | 6 | 6 | 9 | 7 |   |   |   |   |   |
| 74 | MISANVU DEM. SCH              | U n i t        | G         | A | MASAKA    | 0                               | 0   | 2  | 6   | 1      | 2   | 4   | 1  | 1   | 0      | 0 | 0 | 0 |   |   |   |   |   |   |
| 75 | MM WANYANGE P/S               | U n i t        | G         | A | J I N J A | 2                               | 1   | 1  | 3   | 1      | 3   | 1   | 9  | 2   | 2      | 1 | 7 | 0 | 4 | 1 | 6 | 1 | 6 |   |
| 76 | MOYO GIRLS P/S                | U n i t        | G         | A | M O Y O   | 0                               | 0   | 0  | 1   | 3      | 0   | 0   | 0  | 0   | 0      | 0 | 0 | 0 | 0 | 0 |   |   |   |   |
| 77 | MPONDWE P/S                   | Inclusive      | G         | A | KASESE    | 3                               | 1   | 4  | 2   | 4      | 1   | 6   | 1  | 0   | 7      | 7 | 7 | 5 | 8 |   |   |   |   |   |
| 78 | MUKOYON P/S                   | Inclusive      | G         | A | BUKWO     | 8                               | 1   | 4  | 1   | 4      | 1   | 7   | 0  | 0   | 1      | 7 | 1 | 1 | 2 | 2 |   |   |   |   |
| 79 | NANCY COMP. SCH. FOR THE DEAF | Special school | G         | A | L I R A   | 8                               | 5   | 8  | 3   | 0      | 0   | 0   | 0  | 0   | 0      | 0 | 0 | 0 | 0 |   |   |   |   |   |
| 80 | NANCY SCHOOL FOR THE DEAF     | Special school | G         | A | L I R A   | 9                               | 6   | 1  | 1   | 2      | 0   | 0   | 0  | 0   | 0      | 0 | 0 | 0 | 0 |   |   |   |   |   |
| 81 | N A U Y O P / S               | Inclusive      | G         | A | M B A L E | 2                               | 8   | 2  | 1   | 6      | 1   | 3   | 2  | 3   | 1      | 2 | 5 | 3 | 2 | 7 | 8 |   |   |   |
| 82 | NDESE C.O.U P/S               | Inclusive      | G         | A | MUKONO    | 0                               | 9   | 0  | 9   | 0      | 2   | 2   | 0  | 9   | 0      | 9 | 0 | 1 | 1 | 0 | 1 | 8 | 1 | 8 |



**SCHOOLS IN UGANDA WITH CHILDREN WITH SPECIAL NEEDS (SPECIAL SCHOOLS, UNITS AND INCLUSIVE ) 2017**

| SN | S C H O O L                 | Type of School | OWNERSHIP | DISTRICT | TYPE OF SPECIAL NEED/DISABILITY |     |    |     |        |     |     |    |     |        |
|----|-----------------------------|----------------|-----------|----------|---------------------------------|-----|----|-----|--------|-----|-----|----|-----|--------|
|    |                             |                |           |          | H I                             | V I | MR | P I | OTHERS | H I | V I | MR | P I | OTHERS |
|    |                             |                |           |          | H I                             | V I | MR | P I | OTHERS | H I | V I | MR | P I | OTHERS |
| 83 | NGORA SCHOOL FOR THE DEAF   | Special school | G A       | NGORA    | 84                              | 88  | 0  | 0   | 0      | 0   | 0   | 0  | 0   | 0      |
| 84 | NKOZI DEM. SCHOOL           | Inclusive      | G A       | MPIGI    | 4                               | 1   | 1  | 2   | 0      | 0   | 1   | 1  | 2   | 0      |
| 85 | NSAWO C/U P/S               | Inclusive      | G A       | LUWERO   | 08                              | 14  | 07 | 09  | 17     | 15  | 0   | 0  | 22  | 25     |
| 86 | NYABYEYA P/S                | Inclusive      | G A       | MASINDI  | 0                               | 0   | 10 | 13  | 11     | 20  | 0   | 0  | 0   | 0      |
| 87 | NYONDO DEM.SCHOOL           | Inclusive      | G A       | MBALE    | 4                               | 7   | 5  | 5   | 15     | 10  | 2   | 1  | 13  | 15     |
| 88 | OWINYI P/S                  | Inclusive      | G A       | PAKWACK  | 07                              | 09  | 06 | 09  | 10     | 11  | 11  | 08 | 00  | 00     |
| 89 | PAIPIR P/S                  | Inclusive      | G A       | PADER    | 22                              | 12  | 1  | 0   | 1      | 0   | 1   | 2  | 25  | 21     |
| 90 | PAJOBI P/S                  | Unit           | G A       | ARUA     | 0                               | 0   | 0  | 0   | 0      | 0   | 0   | 0  | 9   | 4      |
| 91 | RUGAZI CENTRAL P/S          | Inclusive      | G A       | RUBIRIZI | 7                               | 6   | 0  | 0   | 6      | 3   | 6   | 2  | 8   | 7      |
| 92 | RWERA MIXED P/S             | Unit           |           | NTUNGAMO | 9                               | 7   | 3  | 5   | 20     | 25  | 5   | 2  | 4   | 1      |
| 93 | SALAMA SCHOOL FOR THE BLIND | Special school | G A       | MUKONO   | 0                               | 0   | 41 | 32  | 0      | 0   | 0   | 0  | 0   | 0      |

**SCHOOLS IN UGANDA WITH CHILDREN WITH SPECIAL NEEDS (SPECIAL SCHOOLS, UNITS AND INCLUSIVE ) 2017**

| SN  | S C H O O L                 | Type of School | OWNERSHIP | DISTRICT      | TYPE OF SPECIAL NEED/DISABILITY |     |     |     |        |     |     |    |     |        |
|-----|-----------------------------|----------------|-----------|---------------|---------------------------------|-----|-----|-----|--------|-----|-----|----|-----|--------|
|     |                             |                |           |               | H I                             | V I | MR  | P I | OTHERS | H I | V I | MR | P I | OTHERS |
|     |                             |                |           |               | H I                             | V I | MR  | P I | OTHERS | H I | V I | MR | P I | OTHERS |
| 94  | SEETA C/U P/S               | U n i t        | G A       | MUKONO        | 1 0                             | 1 5 | 5   | 6   | 1 0    | 9   | 1   | 2  | 0   | 0      |
| 95  | SHIMON DEM. SCHOOL          | Inclusive      | G A       | KAMPALA       | 2                               | 1   | 0   | 0   | 8      | 1 1 | 0   | 0  | 3   | 0      |
| 96  | SIR APOLO KAGWA NAZIGO S.S  | Inclusive      | G A       | MUKONO        | 0                               | 0   | 1 7 | 1 5 | 0      | 0   | 0   | 0  | 0   | 0      |
| 97  | SNE- KITANGA P/S            | Inclusive      | G A       | K A B A L E   | 9                               | 6   | 1   | 3   | 7      | 6   | 4   | 3  | 6   | 9      |
| 98  | SPIRE ROAD P/S              | U n i t        | G A       | J I N J A     | 0                               | 0   | 1 5 | 2 2 | 0      | 0   | 0   | 0  | 0   | 0      |
| 99  | ST. BENADETTA PARENTS P/S   | U n i t        | G A       | H O I M A     | 6                               | 1 0 | 4   | 5   | 1      | 1   | 1   | 1  | 0   | 0      |
| 100 | ST. JOHN'S S.S. NYABWINA    | Inclusive      | G A       | SHEEMA        | 1 5                             | 0   | 1 0 | 0   | 0      | 0   | 8   | 0  | 3   | 0      |
| 101 | ST. JOSEPH P/S GANGAMA      | U n i t        | G A       | M B A L E     | 2                               | 4   | 5   | 6   | 1 5    | 1 7 | 2   | 0  | 8   | 9      |
| 102 | ST. LUDOVICO'S P/S KITANA   | U n i t        | G A       | H O I M A     | 2 0                             | 1 5 | 4   | 2   | 0      | 0   | 3   | 3  | 2   | 0      |
| 103 | ST. MARY GORETINGETTA GIRLS | Inclusive      | G A       | L I R A       | 4                               | 6   | 1 3 | 1 2 | 7      | 1 1 | 3   | 2  | 6   | 7      |
| 104 | ST. THEREZA BUJUNI P/S      | U n i t        | G A       | K I B A A L E | 6                               | 3   | 3   | 2   | 1      | 1   | 2   | 2  | 3   | 7      |

**SCHOOLS IN UGANDA WITH CHILDREN WITH SPECIAL NEEDS (SPECIAL SCHOOLS, UNITS AND INCLUSIVE ) 2017**

| SN  | S C H O O L                         | Type of School | OWNERSHIP | DISTRICT    | TYPE OF SPECIAL NEED/DISABILITY |     |     |     |        |     |     |     |     |        |
|-----|-------------------------------------|----------------|-----------|-------------|---------------------------------|-----|-----|-----|--------|-----|-----|-----|-----|--------|
|     |                                     |                |           |             | H I                             | V I | MR  | P I | OTHERS | H I | V I | MR  | P I | OTHERS |
| 105 | ST. URSULA SPECIAL SCHOOL           | Special school | G A       | J I N J A   | 0                               | 0   | 0   | 0   | 3 8    | 2 9 | 0   | 0   | 0   | 0      |
| 105 | ST.ANGELA MAGALE GIRLS BOARDING P/S | U n i t        | G A       | MANAFA      | 1 2                             | 1 5 | 3 0 | 3 8 | 9      | 1 4 | 4   | 6   | 0   | 0      |
| 106 | ST.MARK V/SCHOOL FOR THE DEAF       | Special school | G A       | MASAKA      | 107                             | 4 8 | 0   | 0   | 0      | 0   | 0   | 0   | 0   | 0      |
| 107 | STS. PETERS & PAUL P/S              | U n i t        | G A       | KABAROLE    | 7                               | 8   | 2 3 | 1 2 | 1 0    | 8   | 0   | 2   | 3   | 0      |
| 108 | S U A M P / S                       | Inclusive      | G A       | B U K W O   | 3 7                             | 3 6 | 0 8 | 0 6 | 1 1    | 8   | 1 1 | 1 2 | 0 2 | 0 9    |
| 109 | TUKORE INVALIDS P/S                 | Special school | G A       | MBARARA     | 3 9                             | 4 0 | 0   | 0   | 3 1    | 3 2 | 8   | 6   | 6   | 2      |
| 110 | UGANDA SCH FOR THE DEAF             | Special school | G A       | KAMPALA     | 5 6                             | 5 3 | 0   | 0   | 0      | 0   | 0   | 0   | 0   | 0      |
| 111 | WAKISO SCH FOR THE DEAF             | Special school | G A       | WAKISO      | 5 7                             | 4 8 | 0   | 0   | 0      | 0   | 0   | 0   | 0   | 0      |
| 112 | WALUKUBA WEST P/S                   | U n i t        | G A       | J I N J A   | 1 9                             | 1 5 | 3   | 2   | 6      | 1 4 | 5   | 2   | 9   | 5      |
| 113 | WALUWERERE P/S                      | U n i t        | G A       | B U G I R I | 3 0                             | 2 5 | 5   | 6   | 7      | 1 5 | 8   | 0   | 1 0 | 8      |
| 114 | WANDEGEYA MUSLIM P/S                | Inclusive      | G A       | KAMPALA     | 2                               | 0   | 3   | 3   | 8      | 6   | 1 0 | 1 7 | 3   | 1      |

**SCHOOLS IN UGANDA WITH CHILDREN WITH SPECIAL NEEDS (SPECIAL SCHOOLS, UNITS AND INCLUSIVE ) 2017**

| SN  | S C H O O L      | Type of School | OWNERSHIP | DISTRICT | TYPE OF SPECIAL NEED/DISABILITY |             |            |            |             |             |            |            |            |            |
|-----|------------------|----------------|-----------|----------|---------------------------------|-------------|------------|------------|-------------|-------------|------------|------------|------------|------------|
|     |                  |                |           |          | H I                             | V I         | MR         | P I        | OTHERS      | H I         | V I        | MR         | P I        | OTHERS     |
|     |                  |                |           |          | H I                             | V I         | MR         | P I        | OTHERS      | H I         | V I        | MR         | P I        | OTHERS     |
| 115 | W I G U A P / S  | Inclusive      | G A       | K O L E  | 2 2                             | 1 8         | 1 6        | 2 6        | 3           | 6           | 1 1        | 1 5        | 0          | 3          |
|     | <b>T O T A L</b> |                |           |          | <b>1793</b>                     | <b>1721</b> | <b>800</b> | <b>808</b> | <b>1068</b> | <b>1005</b> | <b>391</b> | <b>301</b> | <b>310</b> | <b>234</b> |

### OTHER INCLUSIVE SCHOOLS

| SN  | S C H O O L               | T Y P E          | OWNERSHIP |   | DISTRICT |
|-----|---------------------------|------------------|-----------|---|----------|
| 116 | WAMPEEWO PRIMARY SCHOOL   | Inclusive School | G         | A | WAKISO   |
| 117 | ST JOHN KATABI P/S        | Inclusive School | G         | A | WAKISO   |
| 118 | SURE PROSPECTS            | Inclusive School | P         | O | WAKISO   |
| 119 | VICTORIA MONTESSORI       | Inclusive School | P         | O | WAKISO   |
| 120 | ST LUKE NKUMBA            | Inclusive School | G         | A | WAKISO   |
| 121 | ST JOSEPH NANSANA         | Inclusive School | G         | A | WAKISO   |
| 122 | ALUNDA ENTONO             | Inclusive School | P         | O | WAKISO   |
| 123 | ST KIZITO CATHOLIC SCHOOL | Inclusive School | G         | A | WAKISO   |
| 124 | LITTLE BEARS              | Inclusive School | P         | O | WAKISO   |
| 125 | SACRED HEART              | Inclusive        | G         | A | WAKISO   |

**KEY:**

HI: Hearing Impairment

VI: Visual impairment

MR: Mental retardation

PI: Physical Impairment

GA: Government Aided

PO: Private owned

In some schools the number of children with special needs is not yet captured

**APPENDIX II: MAP OF UGANDA SHOWING MUKONO DISTRICT**



*Source: Google*

Key



District of Study

### APPENDIX III: MAP OF MUKONO DISTRICT SHOWING MUKONO MUNICIPALITY



*Source: Mukono District Statistical Abstract*

Key

 Area of Study

**APPENDIX IV: INTERVIEW GUIDE**  
**INTERVIEW GUIDES FOR SPECIAL NEEDS EDUCATION TEACHERS**

As part of my Master of Special Needs Education program requirement, I am undertaking a research study entitled” **Adaptation of instructional materials for children with hearing impairment in the primary schools in Mukono district.**”

The purpose of the study is to explore the extent to which instructional materials are adapted for learners with hearing impairment in primary schools in Goma division Mukono municipality.

You have purposely been chosen totake part in the study because it is presumed that you have valuable information about the study. This interview will take approximately 30 minutes. Kindly provide appropriate answers to questions where fitting.

The information you will provide shall only be used for the purpose of this research and shall be treated with confidentiality.

**Section 1.**

**Bio data:**

a) **Gender;** Male  Female

b) **Level of qualification;** Grade III  diploma  degree  Masters

c) **Teaching experience;** 5-10 years  10 years and above

d) **Marital status;** Married  Divorced  Si



## **Section 2.**

### **A. Instructional materials that are adapted by teachers in the teaching of learners with hearing impairment.**

1. As a teacher, what instructional materials do you adapt for learners with hearing impairment?
2. What is the importance of adapting instructional materials for learners with hearing impairment?
3. How have the adapted instruction materials impacted on the education with HI?

### **B. How instructional materials are adapted for learners with hearing impairment.**

4. What factors do you consider before adapting instructional materials for learners with hearing impairment?
5. Why do you consider such factors?
6. What process do you follow when adapting instructional materials for learners with hearing impairment?
7. Why do you follow that process?
8. Which stakeholders do you involve in the adaptation of instructional materials for learners with hearing impairment?

### **C. Challenges encountered by teachers in the adaptation of instructional materials for learners with hearing impairment.**

9. What challenges do you encounter when adapting instructional materials for learners with hearing impairment?
10. How have they affected the education of children with hearing impairment?
11. How have you been able to overcome them?

**Thank You for Participating in this Interview**

## **APPENDIX V: OBSERVATION GUIDE**

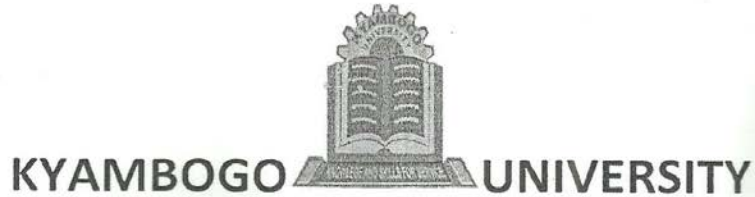
### **(a) Classroom**

1. Instructional materials adapted for learners with hearing impairment
2. Resources used to adapt the instructional materials
3. How the materials are adapted
4. Who are the people involved in the adaptation of instructional materials for learners with hearing impairment?
5. What considerations are followed in the adaptation of instructional materials for learners with hearing impairment?

### **b) Outside the classroom**

6. Instructional materials adapted for co –curricular activities
7. How have they been adapted?

## APPENDIX VI: INTRODUCTORY LETTER



P. O. BOX 1, KAMPALA  
FACULTY OF SPECIAL NEEDS & REHABILITATION  
Tel: 0414-286237/285001/2 Fax: 0414-220464  
DEPARTMENT OF SPECIAL NEEDS STUDIES

15<sup>th</sup> January, 2018

The DEO/DIS/Head Teacher/Teacher/Community/Opinion Leader/Church Leader

Dear Sir/Madam,

**RE: INTRODUCTION OF RESEARCH STUDENT ON DATA COLLECTION**

This is to introduce the bearer Rev/Dr/Sr/Mr/Mrs/Ms. NAKAYI ZA FARIDA  
Reg.No: 16.1.1.13589.1.G.M.S.H./P.C.... who is a bonafide student of Kyambogo  
University in the Faculty of Special Needs and Rehabilitation, Department of Special  
Needs Studies. As partial fulfillment of the requirement for the award of the  
Diploma/Degree, he/she is required to undertake a research on the approved area of  
study.

The purpose of this letter is to request you to allow him/her have access to information  
from your office, school or area of operation necessary for the study.

Kyambogo University will be grateful for any assistance rendered to the student.

Yours faithfully,

  
Dr. Okwaput Stackus  
HEAD OF DEPARTMENT

OS/aj



Received on 17.06.2018

## APPENDIX VII: CONSENT FORM FOR PARTICIPANTS

### CONSENT FORM FOR HEADTEACHER AND SPECIAL NEEDS EDUCATION TEACHERS TO PARTICIPATE IN THE STUDY

**Dear participant,**

The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that you are free to decide not to participate or to withdraw at any time.

The topic to be studied is Adaptation of instructional materials for learners with hearing impairment in primary schools in Goma sub county, mukono municipality, Mukono district.

The purpose of the study is to examine the extent to which instructional materials are adapted for learners with hearing impairment in primary schools in Goma subcounty, Mukono district.

The procedure of collecting data will include interviews and observation on the topic above in which you are requested to participate.

Feel free to ask any questions about the study either before participating or during the time you are participating. I shall be glad to share my findings with you after the research is completed. However, your name will not be associated with research findings in any way and only the researcher will know your identity as a participant.

Thank you

Please sign the consent form with full knowledge of the nature and purpose of the procedures

**I agree to take part in this study as described in the above information**

Name of participant-----

Signature-----

Date-----

# APPENDIX VIII: PICTORIALS

