

**FACTORS INFLUENCING USE OF SIGN LANGUAGE IN  
TEACHING AND LEARNING IN PUBLIC PRIMARY  
SCHOOLS IN KIAMBU COUNTY, KENYA**

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**A Research project Submitted in Partial Fulfillment of the  
Requirement for the Award of the Degree of Master Education in  
Curriculum Studies**

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## **DECLARATION**

This research project is my original work and has not been presented for an award of a degree in any other university.

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This research project has been submitted for examination with our approval as university supervisors.

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## **DEDICATION**

I dedicate this work to my husband Stephen Ngaruiya and my children, Prudence Nikadziri, Peter Munugu and Ruth Wangui who were a source of encouragement in the realization of this project.

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To God be the glory.

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## **ABBREVIATIONS AND ACRONYMS**

<b>ASL</b>	American Sign Language
<b>CDE</b>	County Director of Education
<b>DC</b>	District Commissioner
<b>DEO</b>	District Education Officer
<b>EFA</b>	Education for All
<b>FPE</b>	Free Primary Education
<b>IDEA</b>	Individuals with Disabilities Education Act
<b>KICD</b>	Kenya Institute of Curriculum Development
<b>KISE</b>	Kenya Institute of Special Education
<b>KSDC</b>	Kenya Society for Deaf Children
<b>KSL</b>	Kenyan Sign Language
<b>KSLRP</b>	Kenyan Sign Language Research Project
<b>MDG's</b>	Millennium Development Goals.
<b>MOE</b>	Ministry of Education
<b>NACOSTI</b>	National Commission for Science, Technology & Innovation
<b>SL</b>	Sign Language
<b>SNE</b>	Special Needs Education
<b>UNESCO</b>	United Nations Educational Scientific and Cultural Organization
<b>UON</b>	University of Nairobi
<b>USA</b>	United States of America

## ABSTRACT

Sign Language plays a critical role towards realization of education. The purpose of this study was to investigate factors influencing use of Sign Language in teaching and learning in public primary schools in Kiambu County, Kenya. The study was based on Naomi Chomsky theory of Language acquisition of 1977. This theory emphasis, everyone has an inborn faculty for first language acquisition, at birth children already have brains whose neural circuits have linguistics information, if nurtured well first language acquisition and use is realized within the shortest time expected. This theory also emphasizes that children think in their first language. This theory advocates for use of Sign Language for learners who are deaf. Neuman, 2009 narrates that a sample size depends on what one wants to investigate, the purpose of the inquiry, what is at stake, what is useful and what can be done within available time and resources. The researcher used 3 reliable instruments; questionnaires, observation checklist and interview schedule. The researcher employed qualitative Case Study design which involved in depth investigation of the problem at hand. The Statistical package for social sciences (SPSS) was used to analyze the data and the data which was presented using frequency tables, pie and bar graphs. Descriptive Statistics that included frequency tables and thematic analysis were used. The study was conducted using the descriptive survey design which describes respondents' characteristics such as opinions, attitudes, believes based on educational or social issues. The study used descriptive survey design. The target was 1 head teacher, 25 teachers and 265 learners. The questionnaires were the main tools used to collect data from the head teacher, teachers and learners. The researcher purposively sampled 1 head teacher, 10 teachers and 104 learners. The researcher established that the teacher factor, the school environment, the curriculum, teaching / learning resources, influenced the use of Sign Language in teaching and learning in public primary schools. Based on the findings, the researcher recommended that: there should be provision of refresher courses in Sign Language, the government through the Ministry of Education to facilitate a good school environment that enhances use of Sign Language. The researcher suggested that a similar study should be replicated in the entire County to establish factors influencing use of Sign Language in public primary schools.

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background to the study**

Globally, education is one of the basic human rights as contained in the United Nations Convention on the Rights of the child (1989). According to the United Nations Convention, a child has a right to be educated. The Jomtein conference held in 1990 and the Dakar conference held in 2000 advocated for the right based approach to education and stressed the principle that every child including those with special needs have a right to education. Statistics indicate that the basic rights of many children with disabilities to access education are not being met, thus the contributing to the cycle of poverty (Handicap International, 2012).

Many countries commit themselves to see full development of both learners in special and regular schools accelerate to national development but it is also a right for the entire citizen. In the early 60's in developed countries like United States of America, the emphasis in education was to train and equip all learners with skills, attitudes and knowledge for their social roles in life (United States Department of Education, 2008).

In efforts to speed up development, countries adopted policies that emphasizes in Education for All. Worldwide, there has been a significant trend towards the placement of students with special educational needs in mainstream schools rather than in segregated special school classes.

An appraisal exercise on Special Needs Education (Kochung, 2003) report noted that learners with special needs and disabilities require a barrier free environment to maximize their functional potentials. The physical environment where learners with special needs and disabilities operate should be accessible and/or be disability friendly, however, this is left to the head of the school (Mainland, 2009).

The United States of America legislation passed The Education for All Handicapped Children Act which is referred to as Public Law 94-142, gave all children regardless of disability the right to a free public education. In Kenya, the government has passed legislation that supports special education. The children's Act (2001), the Kenya Constitution (2010), the Persons with Disability Act (2003) provides for education of persons with disability among others. All these documents emphasize the right to free and compulsory basic education for all.

The use of Sign Language in the education of the deaf is not a recent phenomenon as it can be traced to the history when one or more deaf persons started using signs to communicate with others. Recorded reference to Sign Language is traced to Greek when Socrates who lived in 469-359 B.C, in his book, Levinson shows how important Greeks thought of the value of Sign language. St Augustine also made a reference to Sign Language as a mode of communication used to reach deaf people for Christ. History of education in many parts of the world was started by the early church.



The origin of Sign Language can be traced to France, to one Abbe Charles de L'Eppe who is credited with the invention of the French Sign Language in the 16<sup>th</sup> century. He observed deaf people in France communicating using signs, refined the signs and adopted them to become Sign Language. From France the use of Sign Language spread to America and the other parts of Europe. In spite of the myths made about sign language, the language is held dear by deaf people. We are confident that any hearing person would agree that if he had no language of his own he would be different from what he is today and would be cut from other members of the society He will not be able to communicate, write and read. Therefore we appreciate the influence of sign language in lives of deaf people.

Researchers (Rosenstein and Vernon, 1961) observed the ability of deaf people to communicate or act in sign language enables them to see clearly. Worldwide, the idea of language has become the most important topic in the field of most hearing impaired schools. Teaching and learning in most developed countries especially in America there has been a significant trend towards the use of Sign Language in all elementary schools for the deaf. According to Chesire (2009), special needs education is about restructuring school systems involving adaptation of classrooms, teaching and learning strategies to make education accessible to all children.

Teachers for the hearing impaired in this case must undergo re-training to acquire the appropriate signing skills (Fulton, 2006). Teachers worldwide are key quality to any educational quality and this is important to special schools. However

developing countries experience critical shortage of good teacher educators especially in hearing impaired schools and the learners' academic performance is affected ([www.kise.ac.ke](http://www.kise.ac.ke)).

Millennium Development Goals (MDGs) adopted by the United Nations in 2000 brought equality in education into focus as stated in MDG Number 3 (GOK, 2005). The progress towards the goal of equality in education has been measured through parameters of access, retention, and school completion rates. This is the basic level of achieving equality. It is inequality in families and stereotypes that bring comparison in school going children.

The National Goals of Education in Kenya are to foster nationalism, patriotism and promote national unity in an individual. Kambui public Primary school in Kiambu County has deaf learners and who use the Sign Language to offer smooth operations, infrastructural development, teaching and learning materials to offer communication in the classroom (MOE, 2005). Sign Language uses combined signing that lead to Total Communication (TC) which is a significant tool to the teacher in classroom instruction.

Kenya Society for Deaf Children (KSDC) (1981) reported that education of the hearing impaired in Kenya started in 1958. KSDC noted that poor communication skills by the classroom teachers led to the outcome deaf learners performing poorly at the national examinations level. As a result, we had a high school drop in class eight that could be explained by the inappropriate curriculum and poor methods of instruction that was used. Makumi and Yego (1991) supported this

view. Their research work shows that although learners go to school with great enthusiasm to learn, they leave school for the deaf with poor qualifications. The Kenya Institute of Curriculum Development (KICD) in conjunction with the subject panel for the hearing impaired from the Ministry of Education observed that teachers in schools for the deaf lack competence in signing skills though trained in Primary teacher colleges. This situation in schools for the deaf is a major setback to Sign Language use because teachers can neither use the Kenyan Sign Language grammar effectively and their method of instruction fails the learner (KICD, 2013). According to the Behaviourist theory based on Skinner, language is a form of behavior that is acquired through interaction with the other user and if teachers cannot imitate the language for the deaf learner then a negative attitude develop between the teacher and the learner because the more the teacher teaches verbally the more the deaf learner fails to perform well in class work. Most of the prominent Educationalists do not have adult deaf learners in their panels to identify the factors influencing use of Sign Language in teaching and learning.

The demand for education in Kenya has increased due to government's commitment to Universal primary Education Implementation of FPE has created an opportunity for a large number of children to enroll in existing 19,000 public primary schools. While lack of access to education for children with hearing impaired in a regular setup may be attributed to instructional approaches, poor learning and teaching resource that facilitate use of Sign Language. There is inadequate support in terms of funding and policy framework, few qualified

teachers to handle SEN children (Republic of Kenya, 2007). It is therefore imperative to carry out a study on the factors influencing use of Sign Language in teaching and learning in public primary schools in Kiambu County, Kenya.

## **1.2 Statement of the problem**

All children including those with mild special needs are required to attend primary schools in Kenya (MoE, 2009). Nevertheless, Article 3 of the Persons with Disability Act 2011 reiterates clearly that Sign Language is the language of communication for and with persons who are deaf. In this context hearing impaired schools are supposed to use Sign Language as the deaf learners can not use oral-aural modes of communication. Sign Language therefore, is the first language for those who acquire deafness before they develop speech and language and must be used for teaching and learning for instructions in the classroom. Most of the primary school teachers lack the skills of signing proficiently with deaf learners. Although KICD has been charged with the responsibility of ensuring that the curriculum used in schools is adapted to suit the needs of learners with disabilities it does not adapt all the text books written by different authors to enhance use and promotion of Sign Language in public primary schools.

Further, the existence of four units in Kiambu County indicate the need to adopt Sign Language (KSL, 2004) According to arguments about the mode of communication and/or instruction suitable for learners with hearing impairments in different schools for the deaf, Sign Language as a mode of communication has not been formally recognized as a mode of communication to be used in all public

primary schools. The United Nations Standard rules on equalization opportunities for persons with disabilities (1993) further suggests that learners with HI access education in their national language but lack of recognizing Sign Language as a mode of communication in public primary schools acts as the biggest barrier in the education of the deaf (Bunyasi, 2010). There is limited literature on the process of teaching/learning focusing on Sign Language in Kenya, hence the need for a study on the factors influencing use of Sign Language in teaching and learning in public primary schools in Kiambu County, Kenya.

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

The purpose of the study was to investigate factors influencing the use of Sign Language in public primary schools in Kiambu County, Kenya.

### **1.4 Objectives of the study**

The following objectives were used to guide the study.

The study sought to:

- i. Establish the teacher factor influencing the use of Sign Language in public primary schools for deaf in Kiambu County.
- ii. Determine how school environment influence use of Sign Language in public primary schools in Kiambu County.
- iii. Establish how the school curriculum influences use of sign language in public primary schools in Kiambu County.

- iv. Establish how teaching and learning resources influence the use of Sign Language in public primary schools in Kiambu County.

### **1.5 Research questions**

The following research questions guided the study;

- i. To what extent does the teacher factor influence use of Sign Language in teaching and learning in public primary schools in Kiambu County?
- ii. In what ways does the school environment influence the use of Sign Language in teaching and learning in public primary schools in Kiambu County?
- iii. To what extend does the curriculum influence the use of Sign Language in teaching and learning in public primary schools in Kiambu County?
- iv. How does teaching and learning resources influence the use of Sign Language in teaching and learning in public primary schools in Kiambu County?

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

The study would provide significant useful information to the Ministry of Education and educational policy planners on ways and the use of Sign Language as an instructional method of teaching in the classroom. The findings will form a basis for use of Sign Language for all hearing impaired in public primary schools. The study would help the school administration and teachers to be informed on

the effect of Sign Language use. The people and institutions charged with the responsibility of training teachers may use the study in understanding the situation of Sign language in schools and facilitate any necessary changes. Finally, the study could also be used to provide empirical evidence to other researchers who may want to carry out research in future on factors influencing use of Sign Language.

### **1.7 Limitations of the study**

In this study, the researcher did not have control on some respondents' unwillingness to respond to some questions. In addition, the researcher encountered problems with the head teacher for refusing some of the selected teachers and classes to be observed teaching using of Sign Language. This was a major limitation to the study. However the researcher assured the respondents that the data was used for academic purposes only. This ensured they answered the questions without fear. The researcher guided the teachers in interpreting the questions. Some gave answers that are acceptable hence affected the reliability of the data.

### **1.8 Delimitation of the study**

The study was conducted in Kiambu County. The study covered Kambui public primary school for the deaf. The respondents of the study were 265 pupils and 25 teachers. The main areas addressed by the study were: factors influencing the use of Sign Language, the school environment that affects the use of Sign Language, teachers' qualification, teaching and learning materials used to

influence the use of Sign Language in Kiambu County, thus the views of other stakeholders were overlooked.

### **1.9 Basic assumptions of the study**

The following were the assumptions of the study:

- i. The respondents would be co-operative, honest and accurate upon giving information.
- ii. The teachers who have not trained in special education lack competence to handle learners with special needs and may develop negative attitudes towards the use of Sign Language to deaf in their classes.
- iii. The time allocated to teach Sign Language in public primary schools is not adequate.

### **1.10 Definitions of significant terms**

**Attitudes** refers to mental state of readiness, organized through experience, exerting a directive or dynamic influence upon an individual's response to all objects and situations with which it is related, it can be positive or negative.

**Curriculum** refers to all organized experiences that the schools provide to help children learn and develop.

**Disability** refers to lack of ability to perform an activity in the manner within the range considered normal for human beings.



**Hearing Impaired** refers to all children with hearing impairment ranging from mild to profound hearing loss.

**Physical school environment** refers to the school buildings and school play grounds.

**Professional qualifications** refer to a document which shows that someone has successfully finished a course of study which allows him/her to work in one of the professionals.

**School environment barriers** refers to any obstacles such as attitude, unsuitable teaching and learning resources, accessibility, expenses (funding), teachers, inappropriate teaching strategies, rigidity of the curriculum among others.

**Sign Language** refers to a language that uses manual symbols to represent ideas and concepts. The term is generally used to describe the language of communication in which both manual signs and finger spelling is employed.

**The Deaf** is a term that refers to children whose hearing losses are so severe that they cannot acquire or understand spoken language with or without a hearing aid.

### **1.11 Organization of the study**

The study is organized in five chapters. Chapter one consists of the background to the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, limitations of the study, delimitations of the study , basic assumptions of the study, definition of significant terms and organization of the study.

Chapter two comprises the meaning of Sign Language objectives of the study, theoretical and conceptual frame work and summary of literature review. Chapter three covers the research methodology which include ;research design, target population , sample size and sampling procedure, research instruments, validity, instrument reliability, data collection procedure and data analysis techniques. Chapter four focuses on data analysis, interpretation and discussions. Chapter five presents summary of the study, conclusions, recommendations and suggestions for further research.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter presents a comprehensive literature review of eleven sub-sections. These includes: the meaning of Sign Language, the use of sign Language in public primary schools, environment and the use of Sign Language, the teaching/learning resources, teachers' qualification, adequacy of learning and teaching materials, attitudes of teachers and head teacher, theoretical framework and conceptual framework.

#### **2.2 The concept of Sign Language**

Sign Language is a language used by deaf persons to communicate to each other and can be traced back to the Greek philosopher Socrates who lived in 469-359 B.C. who pondered how people could communicate if they were not having voice and tongue.

Sign Language is a language that dictionaries cannot be consulted when checking the definitions of signs, origin of sign, as one would use the English dictionaries instead; Sign Language dictionaries are guided on how to sign a word written in English (Uganda Sign Language Research Project, 2006) Sign Language is the use of symbols while communicating. For example signs are used to show different movements directions like; contact point, single movement, double movement, slow movement, single circular movement, double circular movement,

repeat to and from movement, vertical movement, horizontal movement., single up and down movement (Botswana Sign Language Resource Project, 2008).

The Amendment Act (2011) on Persons with Disabilities stipulates that Sign Language is an assistive device where the deaf person uses an interpreter in broadcast sense as a basis of all human communication. Sign Language is a system of using manual-general signs as a medium of communication by the members of a given deaf community (Kenya Society for deaf children, 2006). Based on the linguistic research in the second half of the twentieth century is the finding that sign Language has all the properties that distinguish human language from the other (non-linguistics) modes found in the animal kingdom. Sign language is culture based by the deaf people and has not been colonized like the other languages. Sign Language is used naturally by deaf people in Kenya, as elsewhere. Sign is defined by its codification and standardization and it is developed using a system of graphic symbols and it is formed by a group of deaf persons living in a community and it is not imposed on them (Okombo, 2006).

Sign Language is a language that has signs that function as words. These words are composed of phonemes and morphemes that combine a unique way to make each word distinct. These signs are made up of four interacting elements (gestural parameters) namely: Handshape, location, movement or motion and orientation (Akaranga, Kaula, Mwachiti, Mweri, 2006). Sign Language is the language of communication for and with persons who are deaf. The term “deaf” in this context is used to refer to persons whose hearing impairment is to the extent that

they cannot use oral-aural modes of communication with or without sound amplification. Sign Language therefore, is the first language for those who acquire deafness before they develop speech and language (KICD, 2010).

### **2.3 The use of Sign Language in public primary schools**

At the time de L’Epee was promoting use of SL in France, there was a strong wave towards oralism in other parts of Europe especially in Britain and Germany. The developed countries concern of Oral Language has shifted to Sign Language communication. Accepting the use of Sign Language at least in principle opened classrooms to natural language of the deaf. The first kind of communication is what is referred to in the United States and Canada as American Sign Language (ASL) (Stokoe, 1992).

In Kenya, Sign Language has grown and developed into Kenyan Sign Language (KSL) (KSDC, Ogutu, 2006). KSL is accepted as the mother tongue for children who are deaf. It is also the medium of instruction for learners who are hearing impaired in both pre-school and lower primary levels. At higher levels, Kenyan Sign Language and Signed English are used interchangeably in addition to usage of other components of Total Communication during the learning process and in other co-curriculum activities.

While children with hearing abilities acquire language spontaneously from members of the family and community, those with deafness come to school without any structured language skills. It is in hearing impaired schools that

children are taught Sign Language that it enables the teaching and learning process to flow smoothly.

#### **2.4 Role of the school environment and use of Sign Language**

The successful use of Sign Language depends on the learners interactions when playing in the schools compound. Ngao (2005) defines the school's environment as a place for socialization that includes the buildings and surrounding grounds. It encompasses conditions such as cleanliness, noise, temperature and lighting as well as biological, chemical and structural hazards. The learning environment is a key factor to learners who are deaf in the development of Sign Language.

Studies have shown in the United States of America in 2005 shows the influence of school environment on the use of Sign Language leading to the learner's achievement that is affected either positively or negatively by the school environment (Mercer, 2003). Studies about student achievement and building conditions concluded that the school significantly affects student achievement. There is enough research evidence to show that the buildings in which students spend a good deal of their time learning, influences how they learn (Earthman, 2004). A desirable school environment in design is friendly having wide entrance to classrooms for learners who are hearing impaired to support use of Sign Language (Higgins, 2005). Obviously a deaf learner cannot learn in a dark place as they need vision to communicate.

## **2.5 Teachers' qualification and use of Sign Language**

Teaching styles and high quality of education depends on the quality of the human resource available and this can be found in teachers (UNESCO, 2004). Education must offer an instrument of change and development and not only to focus on the availability of teachers. The teacher factor is important as a basis to academic achievement (World Bank Report, 1986).

Teachers' qualification is a technique that is widely accepted (Carr-Saunders and Wilson 1994). Problems that lead to poor quality education persists because of the shortage of both qualified and properly trained teachers. This has impacted negatively on the academic achievement of the learners (UNESCO, 1991). Earlier, teachers without proper academic qualifications and professional training failed to do justice to their subjects. High qualifications develop self confidence in the teacher who in turn serves as a source of inspiration to his/her pupil (Kiarie, 1996). He further suggests that a teacher must possess theoretical knowledge about human learning behavior, demonstrate better teaching skills and facilitate pupils' learning. A teacher must also display positive attitude that foster learning and genuine human relationships and also should have knowledge of the subject matter. It is noted that learners' academic performance level is caused by teachers because it's them who most matter in a child's life in school (Ominde, 1964). If a teacher lacks in appropriate qualification and self confidence, then he has a lower self esteem due to lack of content mastery that leads to poor performance by learners.

Teachers' academic and professional are prerequisite to the mastery of Sign language that contributes to the nature for pupils' performance; citing lack of efficient use of Sign Language in teaching methods as good setup reflection of teachers' professional qualification (Kathuri and Nyaga, 1997). Teachers must master Sign Language Structure before she/he develops Signing Skills that will be used at all times for proper learning to take place in the classroom. Sign Language therefore plays a pivotal role that affects all activities in the school (Oracha, 2007).

## **2.6 Head teachers' role in enforcing the use of Sign Language**

The head teacher has a role in enforcing the use of Sign Language in school as the school is the best place where any intervention takes place. Therefore the head teacher has an important role in making sure that teachers under him/her have mastered Sign Language (Carol and Chau, 1996). Most teachers in any school will not use Sign Language in classroom work unless they are supervised by their head teacher. The head teacher should also master Sign Language and teach lessons for the teachers to emulate before so drawing up work plans or schedules among others (Codally and Nystrand, 1983).

The quality of the head teacher is very crucial in determining the use of Sign Language outcome in her/his school. He is the most important influential individual in a school therefore he must have good managerial skills set for the benchmark. The head teacher should ensure that school follows signs agreed upon to be used for teaching in the curriculum and that Sign Language is



effectively implemented in order for the school to achieve its goals, the main one being academic excellence (Hinger, 1995).

## **2.7 Teaching/Learning Resources and use of sign language**

The experience of using a range of teaching/learning resources and related equipments, supplies, furniture and various forms of printed media for teachers are critical in facilitating the process of teaching and learning worldwide (UNESCO, 2007). These resources include hearing aids that offer services to teachers to enrich their teaching however the resources are expensive and need a replacement (Koech, 1999). The high expenditure incurred on repair can be cut down by training teachers on how to use maintain the equipments with proper instructions to learners on how to use them.

In the United States of America (USA) 50% of teachers reported to lack adequate teaching materials (Good, 1999). Differences in school facilities seem to account for differences in achievement. Facilities such as library, textbooks, laboratories, dormitories, visual aids, electricity, water and playing grounds enhances better learning (Postlethwaile, 1998). The central role that learning materials play towards the quality of education impact of the work and motivation of teachers and the pupils which undoubtedly constitutes an important factor in the academic performance and the success of any learner (Lockheed and Verspoor, 1991). He further stated that to improve learning, teaching resources like textbooks should be used as instructional materials at all levels of teaching because they reflect and deliver the curriculum.

The report on studies carried out in Malawi and Guinea Bissau which established that teachers lack essential teaching materials such as teachers' guides and other pedagogical documents to accompany the text books contributed to poor performance of the candidate at the examination level. Also lacking were teaching aids such as globes, wall maps and laboratory equipments. Some schools have no proper classrooms that affect the quality of education leading to low academic achievement and poor performance in examinations (Wanjau, 2005). Lack of teaching equipments in most rural schools have discouraged the teachers from doing their best when teaching. He concludes that if schools were well equipped, they would motivate the teachers to facilitate learning. However, Wanjau noted that teachers were not innovative enough and failed to utilize and improvise from the resources available from the school environment to improve their teaching. He also argues that it is not only the availability of teaching resources that can motivate use of Sign Language but rather how teachers make proper use of the teaching resources provided.

## **2.8. Teachers' attitude and the use of Sign Language**

Eagly and Chicken (2003) argue that attitude is a predisposition or a tendency to respond positively or negatively towards a certain idea, object, person or situation. Teachers are instrumental to the successful implementation of Sign Language in schools for the hearing impaired. Teachers' abilities and attitudes can be major limitations to learners' academic performance (Lieberman and Houston, 2009). Teachers' attitudes which do not promote the use of Sign Language are fear,

limited expectations and lack of signing skills. Teachers' unfamiliarity with disability often results to poor academic performance in the classroom.

Therefore sensitivity and awareness on the part of the teacher in school is essential towards the promotion of Sign Language use (Hodge, 2004). Studies have shown that if a teacher has low expectations towards deaf learners then the children will unlikely receive satisfactory education in hearing impaired schools (Oracha, 2007).

## **2.9 Summary of the literature reviewed**

There is significant relationship between concept use of Sign Language and teaching in public primary schools for the hearing impaired that yields several advantages. Stokoe (1992) observed that the acceptance use of Sign Language to have opened classrooms to the deaf as they could now communicate in their natural language.

A good school's learning environment is a boost to all children because every child has a right to belong and share normal life experiences with peers in school. For Learning to take place in hearing impaired schools, there is need change in instructional methods to effect the use of teaching/learning resources. The head teacher and teachers need to have positive attitude towards the deaf learners and recognize the use of Sign Language to deaf learners who acquired deafness before they development of speech and language (KICD, 2010).

Many of these studies have not addressed factors influencing use of sign language in teaching and learning thus the purpose of this study is to fill the gap.

### **2.10 Theoretical framework**

The study was guided by Naomi Chomsky's theory on Language acquisition of 1977. This theory emphasis; everyone has an in born faculty for first language acquisition, at birth children already have brains whose neural circuits have linguistics information, if nurtured well first language acquisition and use is realized within the shortest time expected.

This theory also emphasizes that children think in their first language; therefore they should be exposed to rich environments that enhance their language early in life. This theory advocates for use of Sign Language which is the first language for learners who are deaf. When entering school the children are taught the Kenyan Sign Language which is a national and common language used deaf and hearing people who have learnt it (KSDC, 2006).

### **2.11 Conceptual Framework**

The study was based on the factors influencing use of Sign Language in teaching and learning given that all variables are manipulated adequately. The conceptual framework shows effect of independent variables on depended variable thus the availability of learning resources could lead to enhanced use of Sign Language while lack of learning resources could impede use of Sign in teaching. The main variables under study are reflected in Figure 2.1.

**Figure 2.1: Factors influencing the use of sign language in public primary schools**

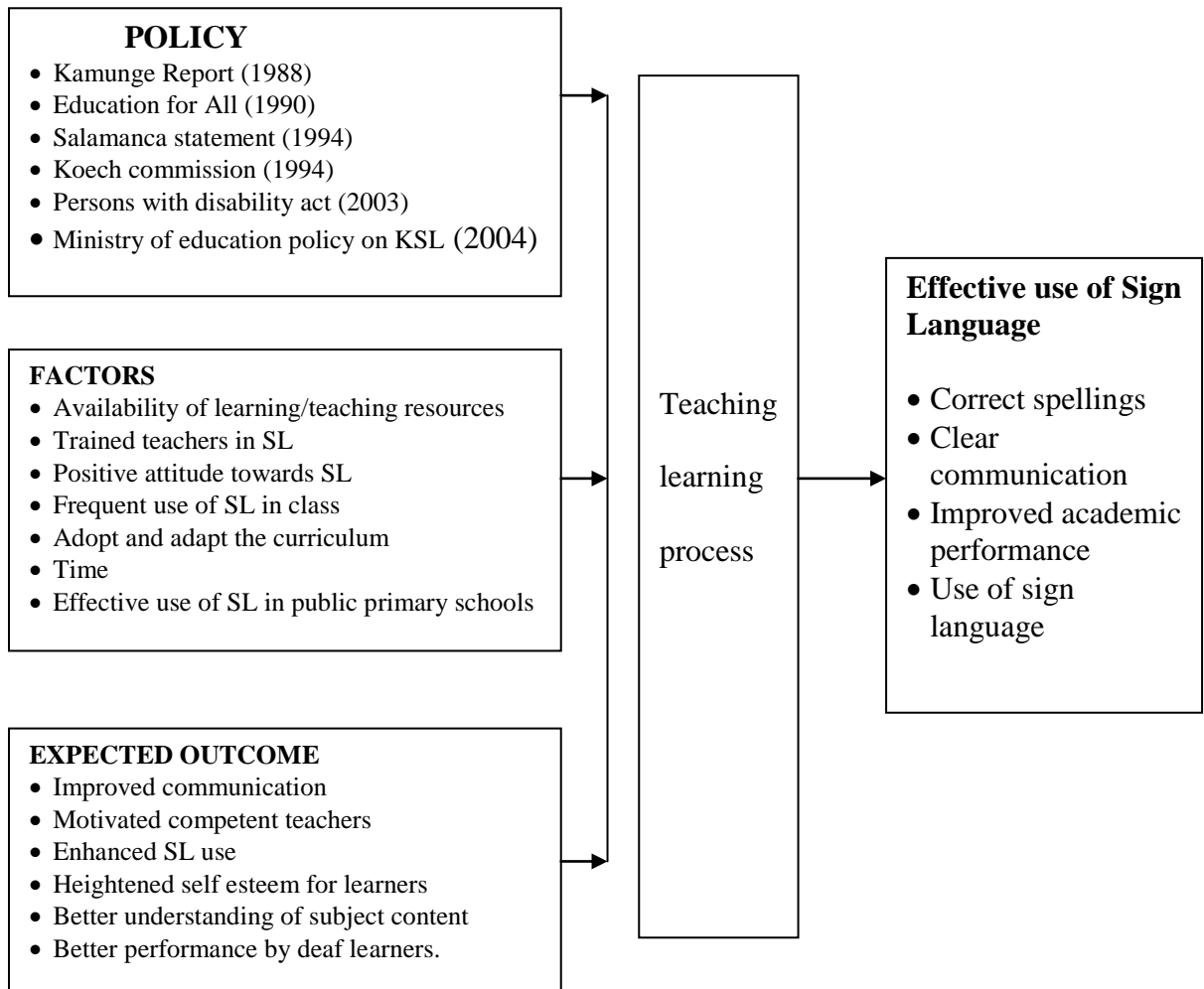


Figure 2.1 shows that Sign Language is influenced by independent variables like policy, factors like availability of teaching/learning resources and if these factors are effected there will be effective use of Sign Language in public primary schools.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter provides a description of methodology to be used in carrying out the study. It highlights on, the research design, target population, sample size and sampling procedures, research instruments, instrument validity and instrument reliability, data collection procedures and data analysis techniques.

#### **3.2 Research design**

This study utilized descriptive survey design. According to (Ogula,1998) a research design is the plan, structure and strategy of investigation conceived so as to obtain answers to research design sets up the framework for the study and the blue print of the research. According to Robson (2003) a descriptive survey design describes respondents' characteristics such as opinions, attitudes, opinions, believes based on education or social issues. In light of this study, the researcher captured respondents attitudes, opinions, believe and knowledge based on teachers' ability to use Sign Language. The questionnaires were the main tools used in collecting data and focused on the factors influencing use of Sign Language in teaching and learning in public primary schools in Kiambu County, Kenya.

### **3.3 Target population**

(Orodho, 2009) defines target population as the set of elements the research focuses upon. The target population for this study was a public primary school in Kiambu County which uses Sign Language for instruction and as a subject. According to the (D E O's office, 2015) there is 1 head teacher, 25 teachers and 265 learners in the school that formed target population.

### **3.4 Sample size and sampling techniques**

Neuman (2009), argues that sample size depends on what one wants to investigate, the purpose of the inquiry, what is at stake, what is useful. What can be done within available time and resources. The researcher picked on Kambui public primary school for the deaf whose population comprises of 1 head teacher, 25 teachers and 265 learners. In the study, the researcher used 1 head teacher in the public primary school who purposively participated, 12 teachers random sampling 104 learners from classes 5-8 because they understood the Sign Language better because of longer exposure.

According to (Mugenda and Mugenda, 2003).30% of population is ok although higher percentage is better. For the learners 30% was a better representation sampled using random sampling. Teachers 48% which was higher than 30% and 12 teachers were selected through random sampling.

**Table 3.1 Sample respondents**

<b>Respondents</b>	<b>Target population</b>	<b>Sample size</b>
Head teacher	1	1
Teachers	25	07
Learners	265	104
<b>Total</b>	<b>291</b>	<b>112</b>

### **3.5 Research instruments**

The study employed use of questionnaires, observation checklist and interview guide to collect data from the respondents. According to (Mugenda and Mugenda, 2003), a questionnaire is a written set of questions to which the subjects responds in writing. Gay (1992) substantiated that the anonymity of questionnaires helps to produce more candid answers as compared to the use of other research instruments. Mulusa (1990) asserts that observation checklist enables a researcher to get first hand view of what is actually happening instead of relying entirely on reports from participants.

#### **Questionnaires**

There were two sets of questionnaires: one for teachers as shown in appendix 3 and another for learners as depicted in appendix 4. The interview schedule administered to the head teacher was useful in gathering information on the factors influencing use of Sign Language in teaching and learning in public primary schools. Then the questionnaire administered to the teachers sought to



find out teachers' professional qualification in teaching and learning using Sign Language in public primary schools and the learners questionnaire sought to find out their background information and the way the learners' perceived teachers used Sign Language to instruct them in the classroom.

### **Observation checklist**

(Mulusa, 1990) asserts that observation checklist enables a researcher to get first hand view of what is actually happening instead of relying on reports from participants. Observation checklist (appendix 5) was used as a valuable instrument in collecting data on availability, adequacy, functionality and suitability of learning resources. This included instructional methods used in class and items required in hearing impaired schools, like adapted classrooms, adapted desks, adapted text books, hearing aids, swings, playgrounds, spacious windows, spacious rooms and good ventilations.

### **3.6 Instrument validity**

Validity is the degree to which the findings of the research instrument used in the investigation of a phenomenon. It is the accuracy with which the instruments measures what it is intend to measure (Mugenda and Mugenda, 2009). The researcher intended to ensure validity of instruments in the case study conducted in the selected school. On the other hand content validity is conceived to relate to the capacity of the study instrument to adequately cover the topic in question (Gall, Gall and Borg, 2005). As such, the researcher intended to check content

validity by cautiously preparing through the professional guidance of the supervisors, as well as expert opinion on the items of the questionnaire.

### **3.7 Instruments reliability**

(Mugenda and Mugenda, 2003) define reliability as a measure of the degree to which a research instruments yields consistent results or data after repeated trials. In this study the researcher used 3 reliability instruments; the questionnaire schedule. Observation checklist and the interview schedule. This is a re-test technique. According to (Orodho, 2008), the following steps were followed to test reliability of the instruments.

In order to ensure the questionnaire were reliable, the researcher engaged the supervisors in developing the instrument albeit in terms of guidance. A case study was carried out at Kambui public primary school in Kiambu County, Kenya. Questionnaires were administered to respondents at Kambui public primary school twice in a time lapse of two weeks.

The results of the study in questionnaires, interview schedule were analyzed using matrix with objects as columns and descriptors as rows. Quantitative data was analyzed using Ms EXCEL and descriptive statistics such as frequencies and percentages. The analyzed data were presented in tables, histograms and pie charts.

### **3.8 Data collection procedures**

Authority to conduct research was sought from the University of Nairobi, which offered an introduction letter, and the researcher sought permission from the National Commission of Science, Technology and Innovation. , thereafter, the office of the Kiambu and the District Education Officer was contacted for permission prior to the data collection exercise. The researcher then sought permission from the head teacher of the target primary school. She personally visited the school and administered the questionnaire after explaining to the respondents of their expected roles in the research. Finally, the researcher collected the questionnaires upon completion of one week.

### **3.9 Data analysis techniques.**

According to (Kombo and Tromp, 2006), data analysis refers to examining what has been collected and making deduction and inferences. Data was analyzed using the descriptive statistics. Qualitative data was tabulated and analyzed using the attribution and assertions analysis which are techniques of content analysis. Attribution analysis examines the frequency with which certain descriptive phrases and qualifiers are used. Assertion analysis takes the form of a matrix with objects as columns and descriptors as rows. Quantitative data was analyzed using Ms EXCEL and descriptive statistics such as frequencies and percentages. The analyzed data was then presented in tables, histograms and pie charts.

### **3.10 Ethical considerations**

The researcher sought approval to contact research from the University of Nairobi, which offered an introductory letter. The researcher then sought permission from the National Commission of Science, Technology and Innovation, Thereafter the researcher sought permission from the County Education officer of Kiambu to carry out study on the school factors influencing use of Sign Language in Kambui public primary school in Kiambu County, Kenya. The researcher applied for permission to contact the research from 12<sup>th</sup> May to July 2015. A copy of permit was applied in appendix 8 upon obtaining the permit for the data to be collected at Kambui public primary school for the deaf.

On the day agreed upon the researcher requested the assistance of the head teacher to physically identify the respondents. The questionnaires were administered and collected after one week as authorized by the head teacher of the school.

## **CHAPTER FOUR**

### **DATA ANALYSIS, PRESENTATION AND INTERPRETATION**

#### **4.1 Introduction**

The main purpose of the study was to investigate the factors influencing use of Sign Language in teaching and learning in public primary schools in Kiambu County, Kenya. Graphs, pie charts and tables were used to present the data. The questionnaires were dropped and later picked at a later date to allow the respondents to fill the questionnaires at their own time. Once the respondents answered the questionnaire, data was then coded and analyzed using Ms EXCEL and descriptive statistics such as frequencies and percentages.

#### **4.2 Response and Return Rate.**

Questionnaires were distributed to 1 head teacher, 10 teachers and 120 learners in Kiambu County, Kenya. Given this, the study targeted; 131 respondents in collecting data with regard to factors influencing use of Sign Language in teaching and learning in public primary schools in Kiambu County, Kenya. One head teacher, 7 teachers and 104 learners responded by filling the questionnaires and returned them. The return rates were 81.1 percent and hence were deemed adequate for data analysis. According to (Kumar, 2010), a questionnaire response rate of 50 percent is sufficient to conduct the study efficiently and, therefore it is a good response rate. In regard to this study, the response and return rate was regarded excellent because it surpassed the minimum required return rate by 18.9

percent. The implication of this healthy response and return rate is that the respondents were cooperative and willing to participate in the study on the factors influencing use of Sign Language in teaching and learning in public primary schools in Kiambu County, Kenya.

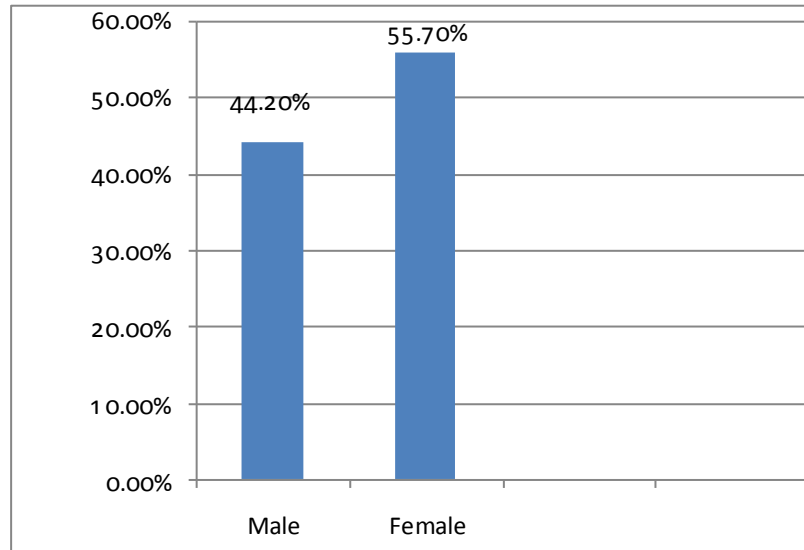
### **4.3 Demographic characteristics of the respondents**

The researcher sought to find out the personal characteristics of the head teacher, teachers and learners who participated in the study. Therefore, the questionnaires included a demographic data section, which explored various personal characteristics of the respondents. The aspects were regarded to be critical in comprehending the respondents in regard to the factors influencing use of Sign Language in teaching and learning in public primary schools in Kiambu County, Kenya. Percentages and frequency tables were utilized in depicting these demographic data and the results are presented in figures and tables.

#### **4.3.1 Gender of the respondents**

Gender was considered important in this study because it could directly or indirectly influence use of Sign Language in the school. The teachers were asked about their gender and the response are shown in figure 4.1

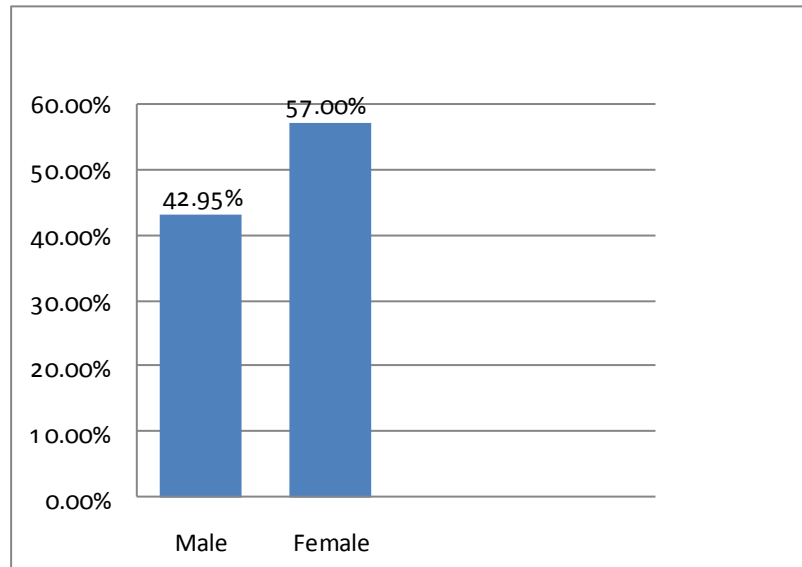
**Figure4.1: Distribution of the Head teacher, teachers by gender**



The majority teachers were women 55.7% and men were 44.2%. This shows more women likely to choose teaching as a career due to family obligations as opposed to men who seek for more masculine careers.

Learners were also asked to indicate their gender and is presented on Figure 4.2 shows more girls.

**Figure 4.2: Distribution of the Learners by gender**



The observation shows that the respondents for this study were predominantly female learners. The results are in agreement with Kenya national census 2009 that reflected that national population of women to be higher than that of men (Mutahi, 2009).

#### **4.3.2 Age of the Respondents**

The researcher determined the age of the respondents and asked them to indicate their age. The results are displayed in Table 4.1.

**Table 4.1: Distribution of head teacher, teachers and pupils by age**

<b>Age (Years)</b>	<b>Head teacher</b>	<b>Teachers</b>	<b>Pupils</b>
12-16	0	0	37
17-21	0	0	67
31-34	0	1	0
36-40	0	4	0
41-45	1	7	0
<b>Total</b>	<b>1</b>	<b>12</b>	<b>104</b>



From the Table 4.1, the results indicate that a majority of teachers were in the age brackets of 41-50 year (58.3%) and learners were aged between 17-21 years (64.4%). The age of the head teacher and teachers indicate that they have good experience in teaching. However, head teacher and teachers' were not exposed to the emerging signs in Sign Language, time allocation on the time table, was not adequate in using Sign Language as a subject and using it in teaching other subjects.

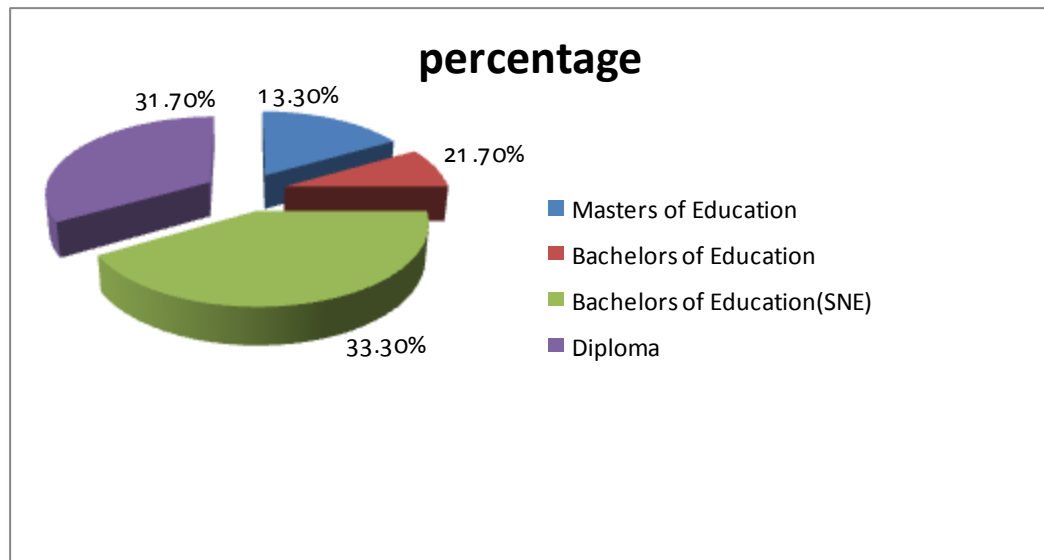
#### **4.3.3 Professional Qualification of teachers**

The highest qualification of teachers was a factor that the study sought to explore. It was necessary to know the highest qualification of the teachers so as to comprehend the prevailing qualification in the use of Sign Language in teaching and learning by the teachers in Kambui public primary school in Kiambu County since it is presumed that the higher the academic qualification of school teachers, the higher the push for use of Sign Language.

The teachers were asked about professional training and results are shown in Figure 4.3.

#### **Figure 4.3: Professional Training of teachers**

Figure 4.3 shows that all teachers had received professional training as a teacher and that 33.30% had trained in special education.



The results in figure 4.3 show that: 33.30% were Bachelor of Education (Special Needs), 31.70% Diploma, 13.30 % had Bachelor of Education 21.70% and Masters of Education 13.30%. Figure 4.3 also shows that apart from professional training 30% had received special training in Hearing Impaired studies.

#### 4.4 Influence of Sign Language on learning

The majority of teachers are professionally trained and this supports Ndurumo (1993:21) who recommends out that Sign Language should be used with English as a method of instruction in schools.

**Table 4.2: Teachers' professional training and use of Sign Language**

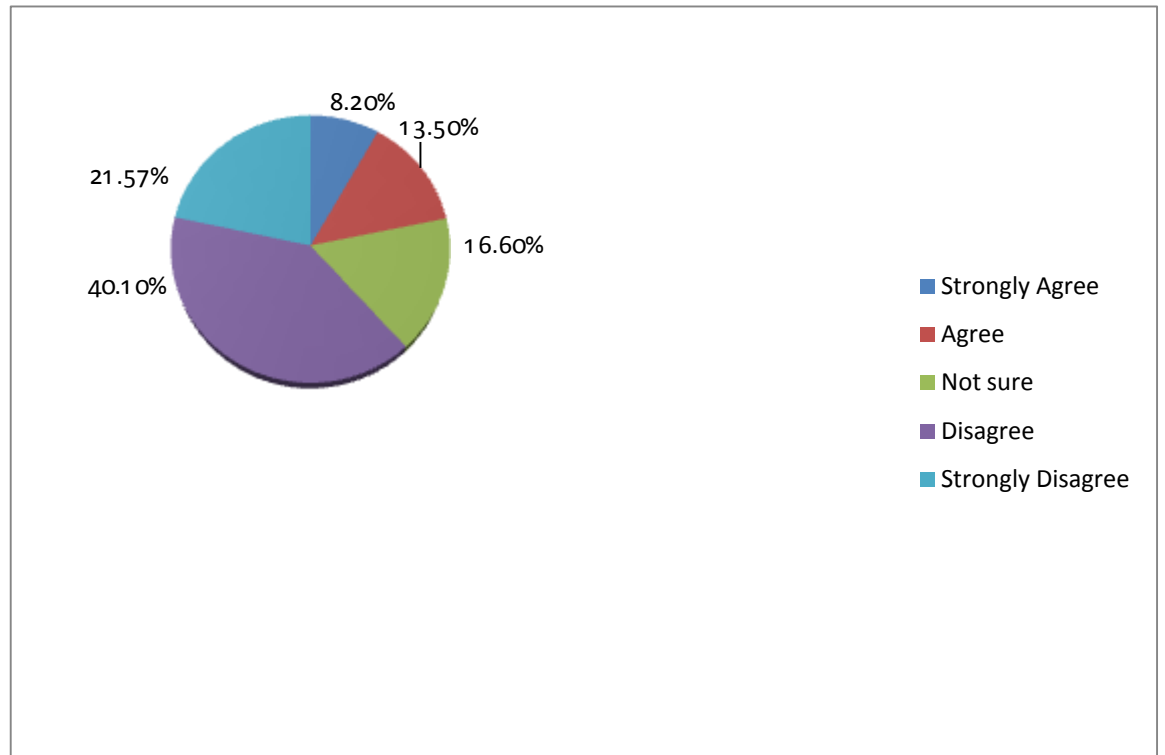
Method of teaching	Learners' Difficulty	%
Paragraphs	30	29
Vocabulary	30	29
Sentences	20	19
Table Illustrations	-	-
Receptive signing	24	23
<b>Total</b>	<b>104</b>	<b>100</b>

Table 4.2 shows that majority 30 (29%) of learners had difficulty in vocabulary when taught by teachers,' 20 (19) of the learners had difficulty in sentences construction. Majority had no difficulty in table illustrations. Data further indicates that 24 (23%) of learners had difficulty in receptive signing .while 30 (29%) of learners had difficulty in Paragraph writing. This indicates that teachers in the school had different difficulties while teaching using of Sign Language. The school environment is ideal for socialization and these includes buildings and the surrounding grounds (Ngao, 2005).

#### **4.5 The school environment and the use of Sign Language in public primary schools.**

The Figure 4.4 shows the learners' responses when asked to commend on use the school environment and promotion of Sign Language.

**Figure 4.4: Learners' responses on use of the school environment and promotion of Sign Language**



From Figure 4.4, majority of the learners 40.10% strongly agreed that that the school environment is a socializing place to learn Sign Language. As can be seen 21.57% agreed, 16.60 not sure, 13.50% disagreed while 8.2% strongly disagreed.

**Table 4.3: Teachers’ responses on whether the school curriculum has impact on use of Sign Language**

<b>Curriculum</b>	<b>Teachers’ Response</b>	<b>%</b>
Paragraphs	10	<b>5.7</b>
Vocabulary	94	<b>94.3</b>
<b>Total</b>	<b>104</b>	<b>100.0</b>

Table 4.3: shows that majority (94.3%) of the selected learners (respondents) lacked Sign Language lacked the correct vocabulary skills and this heightened reading problem. Findings from the table above indicate that (5.7%) of the learners could not write Sign Language paragraphs using the emerging signs. Therefore lack of some signs in the curriculum affected Sign Language use in the school.

#### 4.6 Teaching/learning resources

Teaching/ learning resources was a factor to consider in this study. The head teacher, teachers and learners need related equipments in print media to facilitate the process of teaching and learning worldwide (UNESCO, 2007). This in turn influences the use of Sign Language as shown in Table 4.4

**Table 4.4 Head teacher and teachers’ response on use of teaching/learning resources and promotion of Sign Language**

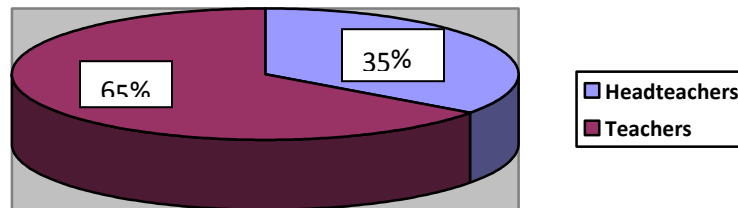
<b>Response</b>	<b>Headteacher</b>	<b>%</b>	<b>Teacher</b>	<b>%</b>
Yes	1	100.0	25	100.0
No	-	-	-	-
<b>Total</b>	<b>1</b>	<b>100.0</b>	<b>25</b>	<b>100.0</b>

Results from Table 4.4 indicate that the head teacher and all teachers 100% were in agreement that teaching/learning resources are useful in promoting Sign Language. According to (Koech, 1999), resources include hearing aids that offer services to teachers to enrich their teaching. Teaching/learning resources are used widely in Hearing Impaired schools and teachers might not run away from them because they are part of Sign Language promotion in schools.

#### 4.7 Teachers' attitude on areas that promote use of Sign Language

The researcher also sought an investigation into teachers' attitude on areas that use of Sign Language in public primary schools in Kiambu County. Data collected were tabulated in Figure 4.5

**Figure 4.5: Teachers' attitude on areas that promote use of Sign Language**



The results in Figure 4.5 shows that the head teachers has little knowledge on emerging signs while the teachers benefit a lot when teaching social studies as many emerging signs are learned.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter summarizes the findings of the study and presents conclusions and recommendations.

#### **5.2 Summary of the study**

The purpose of this study was to investigate the factor influencing use of Sign Language in teaching and learning in public primary schools in Kiambu County. The following research questions were formulated to establish the teacher factor, the school environment, school curriculum, learning/teaching resources, teachers' attitudes and the use of Sign Language in public primary schools in Kiambu County, Kenya. Research questions were also formulated basing on the objectives. The last objective was to establish whether teachers are professionally qualified to support the use of Sign Language in public primary schools in Kiambu County, Kenya.

The review of literature pertinent to the study was concluded from global, regional and local perspectives. The literature review indicated that the concept use of Sign Language and more information from empirical documents to enhance knowledge and clarity of the research questions formulated. The variables of the study were summarized in the conceptual framework that showed the link. The study ideas were anchored on Naomi Chomsky's theory on



Language acquisition of 1977. The study used a Case study design to test validity of instruments in the selected school. The study targeted 1 head teacher, 10 teachers' and 12 learners. Data collected was analyzed using Ms EXCEL and descriptive statistics such as frequencies and percentages. The data collected was presented using tables, histograms and pie charts for effective analysis of data.

### **5.3 :Summary of the study findings.**

The study was concluded using descriptive design with a sample composing of 1 head teacher, 25 teachers and 256 learners. The random sampling was of 1 head teacher, 07 teachers and 104 learners. The findings of indicated that the teacher factor influenced the use of Sign Language in public primary school for the deaf, it also revealed that majority of the teachers are professionally qualified however they are not trained in hearing impaired course. Apparent description and analysis on deaf learners revealed that; Social studies, English and Christian Religious Education are subjects that contribute to the promotion of Sign Language in the school. The study found that whereas proficiency in Sign Language among teachers plays a great role in the education of deaf learners, it is not sufficient in offering quality education to deaf learners. The study found that the head teacher and teachers 97% used general teaching strategies for deaf learners due to assumption that they learn the same as hearing learners. The study found that the school did not have enough Deaf teachers' who are proficient in Sign Language. The data shows that the school did not use a dialogic teaching approach that encourages learners to participate in their own learning language.

The study on the second research objective which focused on the influence of the school environment on the use of Sign Language in public primary schools found that the Social studies teacher lacked signing skills to teach the class 8 learners. The topic was JUA KALI. The teacher focused on the learners in the classroom and asked “Do you remember what you learned about JUA- KALI?” she then signed to them the word by explaining but most of these learners’ were already lost because the teacher had mixed the sign WORK and JUA-KALI. By using the physical environment around the school could the learners’ and the teacher have left the classroom to go outside and went to collect spoiled tins and un- used broken metals to understand the topic “JUA -KALI” It was also revealed that majority of the learners’ found the word JUA-KALI to be confusing as the deaf do not learn Kiswahili as a subject.

The study found that the school curriculum’s influence on use of Sign Language in public primary schools as stated in the third research objective revealed that the curriculum does not cover general information in its syllabus like what is happening around them like on AL-SHABAB one would assume the deaf learners’ have the information that hearing people just get from the media and through normal interaction with the people but not the case with the deaf. The findings revealed that the deaf do not benefit from incidental learning and the syllabus ought to be adapted in such a way so as to benefit the deaf learners.

The study found that the fourth research objective which sought to establish the influence of adequacy of teaching/learning resources on the use of Sign Language

in public primary schools showed that the head teacher and teachers did not have adequate teaching/learning resources to use for teaching Sign Language in their school. Further findings support Lumumba (2009) who observed that lack of adequate instructional materials such as reading materials and lack of accompanying signs on these materials for easy interpretation and quick mastery of concepts, impeded communication between the learners and the teachers

Findings on the fifth research objective found out that Sign Language was not adequately found in the school of study as they use Kenyan Sign Language. Results revealed that head teacher and teachers had positive opinion towards the use of Sign Language; the teachers said merging different signs to form Sign Language (Total Communication) made clarification of concepts easier. The findings are in support Ndurumo (1985) who revealed that learners with HI found it easy to interact and understand information when SL was used as it served as a mother tongue.

The study found that majority of the teachers of the teachers were trained in Special Education but not in Sign Language and the school has a challenge in providing training opportunities to teachers. However the head teacher responded that there were training opportunities. The study also found out that Ministry of Education inspectors were not supportive in improving on the use of Sign Language in teaching and learning.

#### **5.4 Conclusion of the study**

Based on the data of the study, the following are key conclusions of the study, that teacher factors influenced the use of Sign Language in public primary schools. Teachers who are adequately trained do understand the deaf learners' pedagogy and are able to interact freely and promote the use of Sign Language in school. It was also concluded that the school just like other schools for HI has challenges in providing training opportunities to teachers because the head teacher feels Sign Language is of less importance compared to the other subjects. The study also concluded that curriculum influences the use of Sign Language in learning as teachers' use what is in the syllabus to teach. These findings conclude that the curriculum used should include incidental happenings in the society to create awareness to HI learners.

It can be concluded there was inadequacy of teaching/learning resources which affected the use of Sign Language in teaching and learning. For example there was only one Kenyan Sign Language Dictionary in the school and learners did not have Sign Language text books for individual reading. It can also be concluded that positive attitude of a deaf teacher towards the deaf learners contributed to freedom of association and HI learners were able to open up and narrate their experiences enriching the use of Sign Language.

The study concluded that majority of the teachers in the school were professionally qualified to handle learners with special needs. However only a

few teachers were trained in HI course .Therefore, there is need for these teachers to be in-serviced in Sign Language to facilitate the fluency of Signing.

### **5.5 Recommendations**

In light of the research findings, the researcher believes the recommendations will go a long way in strengthening the roles played by teachers in promoting use of Sign Language in teaching and learning in Kiambu County.

The study recommends that:

- i. Teachers should in-serviced in Sign Language to be able to handle learners with HI in public primary schools.
- ii. The government should put in place school environment facilities that are structured to accommodate learners with HI in public primary schools.
- iii. KICD should include all incidental happenings in the society in its syllabus to accommodate the HI learners.
- iv. The head teacher should use part of FPE funds to acquire more instructional materials to facilitate the use of Sign Language, in public primary schools.
- v. Given the scope and limitations of the study, the researcher recommends a replica of the study to be performed in other public primary schools in Kenya and cover other counties apart from Kiambu County to provide comparisons in findings.

- vi. Teachers' should develop positive attitude towards the use of Sign Language in teaching and learning in public primary schools.

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## APPENDICES

### APPENDIX I: INTRODUCTION LETTER

Florence Bibianah P.  
University of Nairobi,  
Department of Education Administration and Planning,  
P.O Box 30197-00100  
Nairobi.  
Date: 24/04/2015

**Dear Sir/Madam,**

#### **RE: REQUEST FOR DATA COLLECTION**

I am a post –graduate student undertaking M.ED course at the University of Nairobi conducting a research as a requirement in partial fulfillment of the degree course.

Your school has been selected as a case study for my project. The project is an attempt to find **the factors influencing the use of Sign Language in public primary schools in Kiambu County, Kenya.**

I would like to request that teachers and learners in your school take part in responding to the questionnaires. All the responses will be used for research purposes only and identity will be treated with strict confidentiality. I would like to visit your school on 12<sup>th</sup> May, 2015 at 10.00 a.m. in order to administer the questionnaire.

Thanking you in advance.

Yours faithfully,

Florence Bibianah P.  
E55/68758/2013

## **APPENDIX 2: INTERVIEW SCHEDULE FOR THE HEAD TEACHER**

The researcher will administer the Head teachers' interview schedule. The head teacher will respond to the following issues regarding factors influencing the use of Sign Language for learners who are deaf. All information given shall be treated confidentially.

1. What is your understanding of factors influencing the use of Sign Language? (Probe for knowledge of Sign Language use)
2. What is your opinion regarding the introduction of Sign Language use to deaf learners in your school?
3. Which methods do you use to teach Sign Language to deaf learners in special/regular schools?
4. Comment on the suitability of available teaching/learning resources to cater for deaf learners.
5. Comment on time allocation for teaching Sign Language in your school.
6. How qualified are the teachers in your school?
7. What challenges do these teachers face when teaching using Sign Language?
8. How often are the teachers in-serviced on Sign Language?

9. What recommendations would you suggest for the challenges you mentioned above?
  
10. What recommendations do you make concerning the use of Sign Language with other subjects?

**THANK YOU**

### APPENDIX 3: QUESTIONNAIRE FOR TEACHERS

Please tick ( ✓ ) or write in the provided space

1. What is your gender? Male ( ) Female ( )

2. What is your highest academic qualification? Primary ( )

Secondary ( ) High School ( ) Diploma ( ) Degree ( )

3. What is your age bracket?

25-3 years ( ) 31-35 years ( ) 36-40 years ( ) 41-45 years ( )

4. Are you a professionally trained teacher in hearing impaired?

Yes ( ) No ( )

5. If your answer for no.4 is yes, indicate place and duration of training.

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

## SECTION 2

Please respond to all the questions. This section requires you to give appropriate responses by ticking a number. The numbers represent the extent of influence, for instance: 1 - very high 2 - high 3 - moderate 4 - low 5 - not at all

No.	Statement	1	2	3	4	5
6.	To what extent does the use of Sign Language impact on the following while teaching the hearing impaired in your class?					
	i. syllabus					
	ii. Text books for teachers					
	iii. Writing materials					
	iv. Visual aids (maps, slides)					
	v. Physical environment					
	vi. Time allocation					
	vii. Teacher's qualification.					
7.	To what extent does the use of Sign Language impact on the learning and performance of hearing impaired in your class?					

	i .Text books for pupils					
	ii. Syllabus					
	iii. Visual aids (maps, slides).					
	iv. Time allocation					
8.	To what extent are teachers able to use Sign Language in the following subjects for the hearing impaired?					
	i. English					
	ii. Social Studies					
	iii. Christian Religious Education					
	iv. Science					
	v. Mathematics					
9.	To what extent do the following methods of instruction impact on the hearing impaired in your classroom?					
	i. Oral/aural method					
	ii. Manual method					



	iii. Total communication approach					
10.	To What extent is time allocated on the time-table adequate for teaching Sign Language subject to your classroom?					
	i English					
	ii. Social Studies					
	iii. Christian Religious Education					
	iv .Mathematics					
11.	To what extent does the use of Sign Language influence performance of hearing impaired learners in classroom?					
	i. Time allocation for the curriculum instructions.					
	ii. Syllabus completion					
	iii. Mastery of subject taught.					
	iv. Mastery of signing skills in the hearing impaired learners.					

**THANK YOU IN ADVANCE FOR YOUR CO-OPERATION.**

## APPENDIX 4: LEARNERS QUESTIONNAIRE

This is a questionnaire and not an examination, it will not be marked so be free and give your opinion accurately. Answers will be used anonymously in a research study. Do not write your name or name of your school. Please tick or write in the provided space.

### Section one

#### Background Information

#### Indicate your;

1. Class-----

2. Sex: Girl ( ) Boy ( ) (tick as appropriate)

3. Age -----

Rate the following statements related to inclusion of deaf learners and tick ( ✓ ) appropriately.

**SA – Strongly Agree, - A – Agree, NS - Not Sure, D – Disagree, SD – Strongly Disagree**

		SA	A	NS	D	SD
4.	Teachers are friendly to deaf learners					

5.	Deaf learners are treated with respect by the Teachers while communicating using Sign Language.					
6.	Teachers use Sign language to interact freely with deaf learners.					
7.	Learning /teaching materials have signs that are easily used by all deaf learners.					
8.	Deaf learners are given more time to sign new Words.					
9.	Our school has a good environment to interact.					
10.	Sign Language is easier for deaf learners.					

**THANK YOU**

## APPENDIX 5: OBSERVATION CHECKLIST

The observation checklist was used in three different classes: 5 - 8. The observation schedule was used to establish the most popular instructional method used in the classes as mentioned above. These are; Sign Language, Total Communication and the Oral/Aural communication methods.

**Table one: Sampling grid for using total communication when teaching**

ITEM	Frequency	Occasionally	Never used	No response	Total
	No. %	No. %	No. %	No. %	No. %
Std. 8social studies					
Std. 5 English					

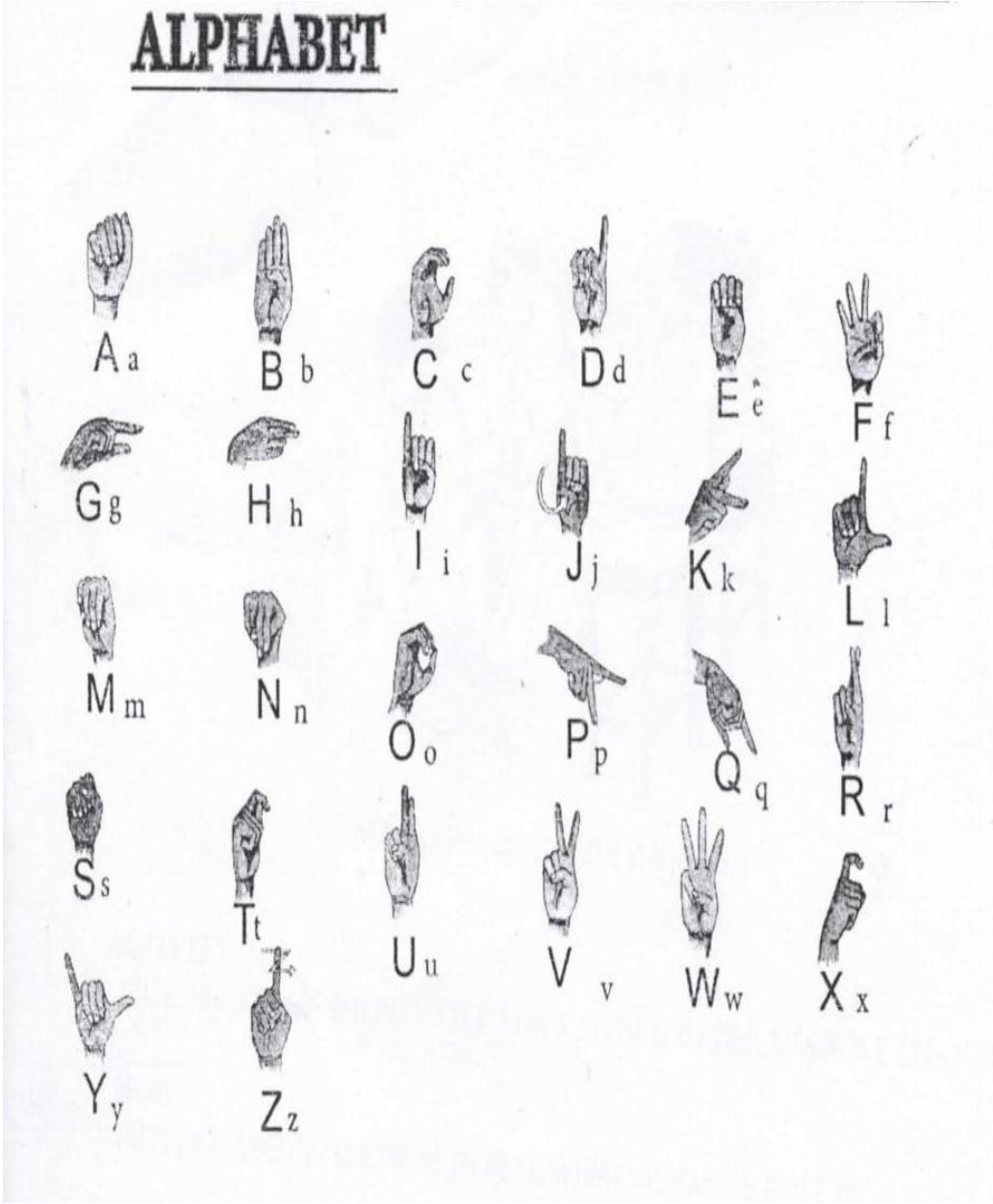
**Table two: Sampling grid for using oral/aural communication when teaching**

ITEM	Frequency	Occasionally	Never used	No response	Total
	No. %	No. %	No. %	No. %	No. %
Std. 8Social studies					
Std5 English					

**Table three: Physical Environment**

<b>Item</b>	Frequency No. %	Occasionally No. %	Never used No. %	No response No. %	Total No. %
Adapted classroom					
Hearing aids					
Swings					
Play ground					
Spacious windows					
Spacious classrooms					

APPENDIX 6: ILLUSTRATIONS OF THE SIGNS



## APPENDIX 7: ACTIVITY WORK

MALE / FEMALE GOD CREATE SAME//

GOD LOVE ADAM / MAN FIRST MAKE//

SAME GOD CREATE EVE/ GARDEN NAME EDEN STAY//

### ACTIVITY

#### 1. REVISION QUESTION

I. GOD MAKE-----/-----//

II. GARDEN NAME -----(UHURU PARK/ EDEN)

### PLAY ROLE

**ACTIVITY:** MALE/ FEMALE//

**EXAMPLE:** ACT/ GARDEN/EDEN//

## APPENDIX 8: GRAMMAR IN SIGN LANGUAGE

THE TIME YOU SIGN WELL PEOPLE UNDERSTAND YOU WILL PRACTICE  
ALWAYS SIGN WELL  
LOOK WELL PICTURE BELOW

- BOY MANY LEARN YEAR EIGHTEEN ONLY/ NEXT SELF  
LOOK FOOD/ MAKE FAMILY//
- VAGINA- BEEN CUT GIRL BECOME WOMAN//
- TRADITIONAL CIRCUMCISION CUT BOY WRONG WAY  
BAD THESE BETTER STOP//

### ACTIVITY ONE

#### DISCUSS

HOME YOUR THING HAPPEN DIFFERENT DIFFERENT// SOME GOOD  
SOME BAD SIGN EXPLAIN SAME//



### GRAMMAR

#### PRONOUN

##### PERSONAL PRONOUN

LOOK WORD UNDERLINE SENTENCE BELOW//

- ME WANT WRITE//
- IF YOU EAT NOTHING/ FUTURE YOU WEAK//
- AGAIN PLEASE/ SHE UNDERSTAND YOU NOTHING//
- TIME BREAK THEY LIKE PLAY//



HE



YOU  
(MANY)



YOU  
(ONE)



**APPENDIX 9: SENTENCES USING SIGN LANGUAGE**

TIME YOU SIGN WELL PEOPLE UNDERSTAND YOU WELL/ PRACTICE  
ALWAYS SIGN WELL//  
LOOK WELL PICTURE BELOW



**DETAIL J-O-H-N BELOW READ SAME SIGN WELL**

NAME J-O-H-N O-N-Y-A-N-G-O  
AGE YEAR SIXTEEN  
SCHOOL BEFORE WHERE RAINBOW SCHOOL PRIMARY  
DISTRICT KERICHO  
PROVINCE RIFT VALLEY  
GAME LOVE MOST WHAT NETBALL/ VOLLEY BALL/ HOCKEY

**ME NAME J-O-H-N O-N-YA-N-G-O**

ME AGE SIXTEEN/ SCHOOL BEFORE LEARN RAINBOW/ FOOD  
GOOD A LOT LIKE/ TEACHER TEN THERE LOVE A LOT//

## APPENDIX 10: WRITING NOUNS USING SIGN LANGUAGE



COLOUR PENCIL



WORKSHOP



BOOKCASE

WAY DIFFERENT DIFFERENT/ MAKE COMPOUND NOUN//

- NOUN + NOUN = COMPOUND NOUN//

EXAMPLE//

WIFE + MOTHER = WIFE - MOTHER//

- ADVERB + NOUN//

TRAFFIC + LIGHT = TRAFFIC - LIGHT//

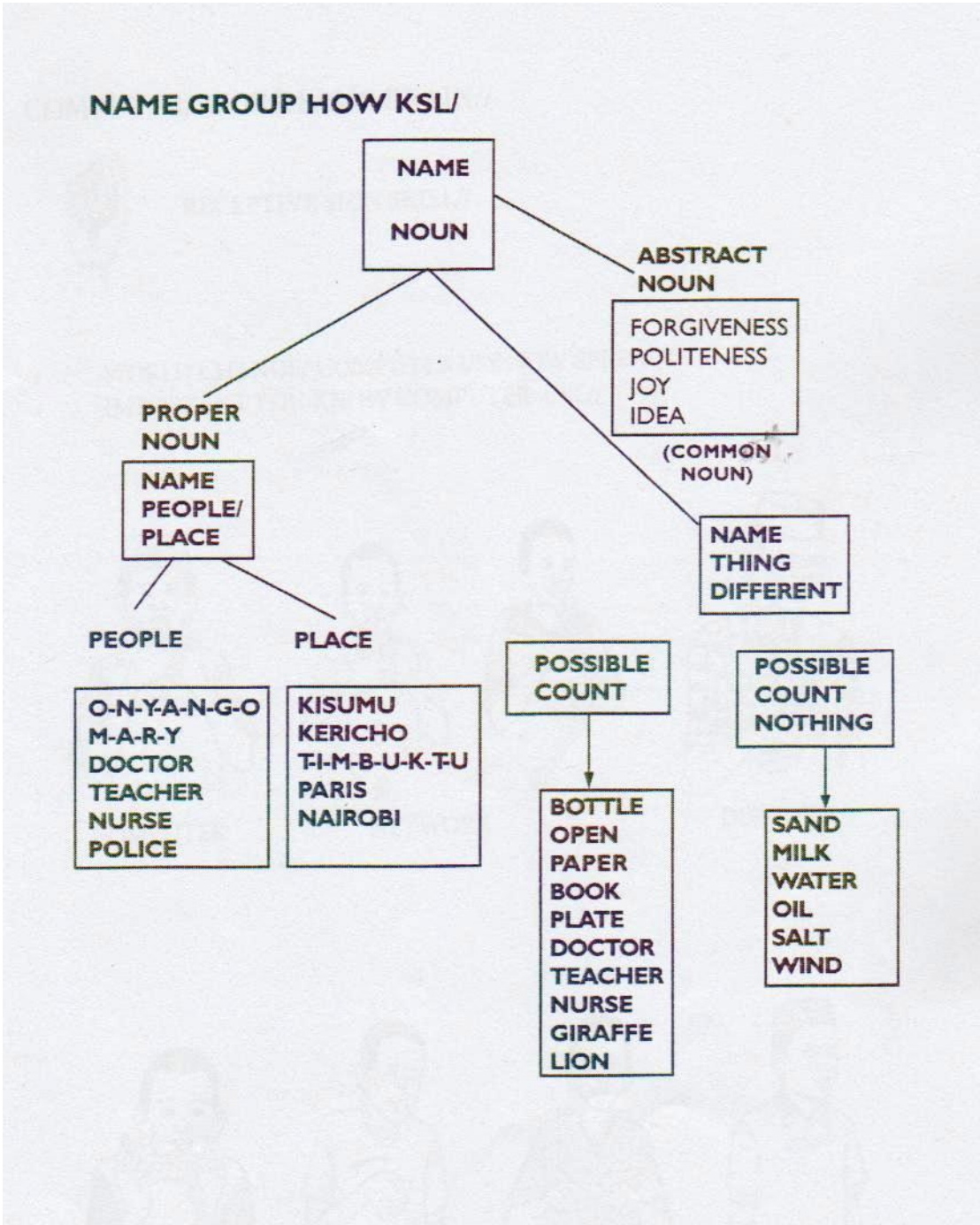
- VERB + NOUN//

PASS + PORT = PASSPORT//

### ACTIVITY

- SENTENCE MAKE/ DIFFERENT DIFFERENT USE ABOVE EXAMPLE//
- TEACHER/ STUDENT SIGN YOU WRITE //

**APPENDIX11:WRITINGTHECOMPREHENSION.**



## APPENDIX 12: WRITING WORDS IN SIGN LANGUAGE

### COMPUTER/ WORK SAME BRAIN//



RECEPTIVE SIGN SKILL//

- WORLD CHANGE/ COMPUTER USE NOW SPREAD//
- IMPORTANT YOU KNOW COMPUTER USE//



COMPUTER



NETWORK



DISKETTE



INTERNET



FLASH DISK



MONITOR



COMPACT DISK

## APPENDIX 13: HOME WORK IN SIGN LANGUAGE

### NAME PEOPLE/ PLACE

POSSIBLE HAVE SPECIFIC SIGN NAME - SIGN NAME YOUR  
NAME PEOPLE JOB GENERAL SIGN HAVE -TEACHER

### ACTIVITY ONE

- a) SIGN NAME FRIEND THREE GIVE//
- b) NAME FRIEND FINGERSPELL//
- c) KENYA TOWN FIVE NAME GIVE/SAME FINGERSPELL//
- d) THING FIVE POSSIBLE COUNT GIVE//
- e) EXAMPLE THING IMPOSSIBLE COUNT GIVE//

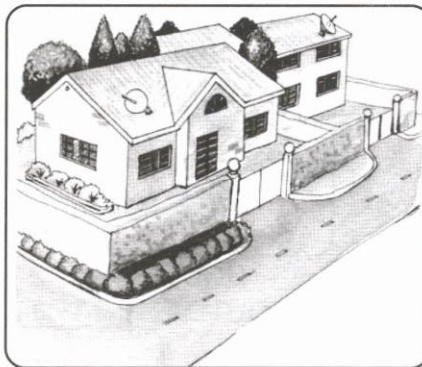
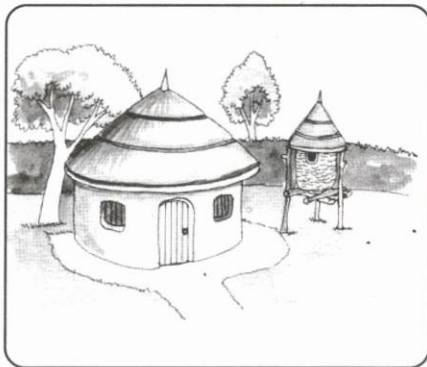
### ACTIVITY TWO

BELOW WORD CORRECT// FILL SPACE BLANK

SUNDAY	JULY	RIVER	DOCTOR	JOHN
--------	------	-------	--------	------

- i. PEOPLE MANY KNOW NOTHING-----  
DAY FIRST WEEK//
- ii. -----BOYTALL CLASS ONLY//
- iii. -----COLD MORE MONTH//
- iv. -----TANA LONG//
- v. TIME SICK ME SEE -----FINISH//

## APPENDIX 14: DICTATION OF WORDS



ASSIST YOU TEACHER GROUP TWO GET

### DEBATE:

### LIFE TOWN LIFE VILLAGE COMPARE

#### IDEA EXAMPLE

SUPPORT TOWN: TOWN PEOPLE MANY LANGUAGE DIFFERENT  
DIFFERENT FOOD TOWN NICE DIFFERENT//

SUPPORT VILLAGE: PROSTITUTION A LOT VILLAGE NOTHING  
CHILD VILLAGE BEHAVIOUR GOOD//



### FLUENT SIGNING SKILL

#### SIGN WELL WORD BELOW



EAT



FOOD

# APPENDIX 15: RECEPTIVE SKILLS IN SIGN LANGUAGE

## JOB CHOOSE



### RECEPTIVE SIGN SKILL

- TEACHER PUT GROUP GROUP//
- TEACHER EXPLAIN FARMER WORK//
- STUDENT SIGN SAME FINGER- SPELL GROUP//



### EXPRESSIVE SIGN SKILL

PICTURE BELOW OBSERVE SAME/ SIGN WORK DIFFERENT DIFFERENT PEOPLE//



PILOT



FARMER



DRIVER



DENTIST



NURSE



TEACHER



BANKER



SURGEON

## APPENDIX 16: RECEPTIVE SKILLS IN SIGN LANGUAGE



### RECEPTIVE SIGNING SKILL

TEACHER PARAGRAPH SIGN KSL WORD SIGN TEACHER YOU  
WRITE

#### REMEMBER

- OBSERVE TEACHER SIGN WELL//
- WRITE WORD CLEAR SAME NEAT//



### EXPRESSIVE SIGNING SKILL

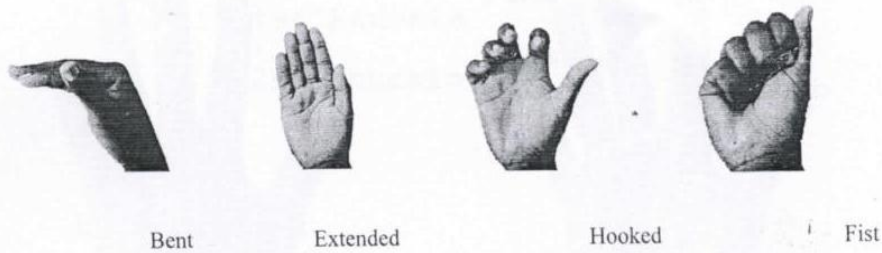
POSSIBLE USE KSL EXPRESS IDEA/ ARGUE SAME SUPPORT IDEA//  
TIME DEBATE PEOPLE MUST//

- SIGN WELL
- SHOW STRONG (COURAGE)
- POLITE ARGUE
- TOPIC STAY SAME
- PERSON ONE SIGN FINISH/ PERSON OTHER SIGN//

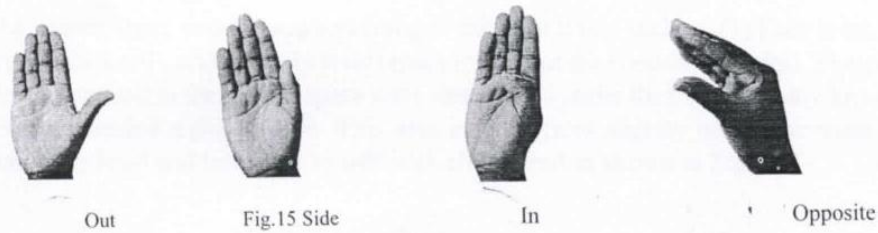


## APPENDIX 17: SIGNING LOCATIONS OF HANDSHAPES IN SIGN LANGUAGE

At third level, the formation of finger configurations was further described as to whether they appeared bent, extended, hooked or in form of a fist (closed handshape and fist handshape).



At the fourth level, different variations in the position of the thumb in relation to other fingers was described accordingly whether the thumb was extended out, at the side, bent or appeared opposite the other fingers.

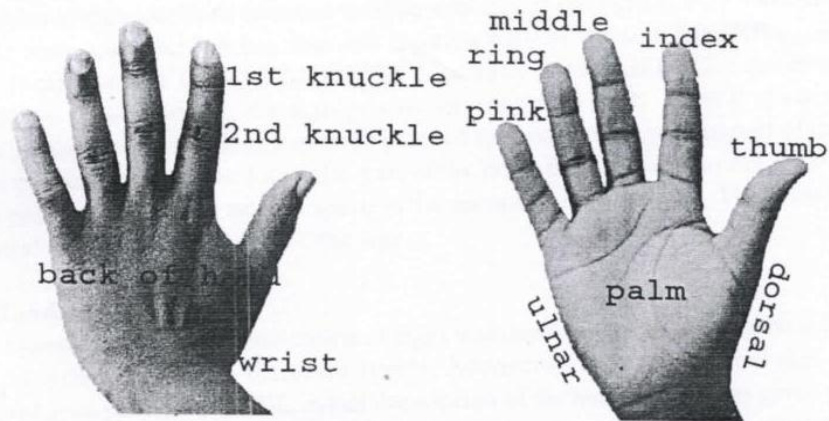


At the Fifth level, the form of bent fingers and thumb was described as to whether they appeared open or closed



The research proposes 47 distinct handshapes found in KSL. The detailed analysis of handshapes is outlined in Table 2.

## APPENDIX 18: SIGNING USING BODY POSITION IN SIGN LANGUAGE



### Parts of the Hand

The neutral space was labeled according to different levels such as: (1) Face level, (space around the head), and (2) body level (space in front of the chest/at the sides). Therefore all sign articulated in the neutral space were categorized under the face and body locations in a recommended signing space. This area extends from slightly below the waist to just above the head and from side to side with elbow bent as shown in Figure.3



## APPENDIX 19: VARIATION OF SIGNING HANDS

### Signs with two or three locations:

Analysis of sign locations revealed that the majority of the signs in *KSL* have single location while some signs have more than one location such as the sign *SISTER* (sign. 1634) with two locations and *GRANDMOTHER* (sign 825), *POST OFFICE* (sign 446) with three locations. That is to say, the sign production may start in the neutral space and ends by establishing contact with any specific parts of the body in the second part of the sign or the sign production starts on a specific part of the body then makes contact with a location as in a passive hand in the neutral space in the second part of the sign. Then finally end in the neutral area in the third part of the sign.

### Handshape:

The handshapes used in articulation of signs was described by analyzing the selected fingers, of the active hand at 5 different levels. According to research analysis, there are 47 handshapes proposed in *KSL*. A full description of the handshapes was given using specific terms to describe the parts of the hand. There were two suggested interpretations arrived at during the analysis of handshape formation that;

- i. All fingers can be active in the articulation of signs.
- ii. Variation in selected active fingers can be used.

At the first level, analysis of the handshape formations focused on whether all active fingers or selective active fingers were involved. Selective active fingers involved either the use of one finger as index finger, thumb or a combination of two or more selective active fingers as in thumb and index, thumb and pink finger e.t.c. Attention should be paid to unselected fingers as well as they are important in the formation of handshapes.



All fingers and thumb



Selected active fingers

Variation in the appearance of the fingers, whether they are spread, gathered or crossed was further analyzed at the second level.



Spread

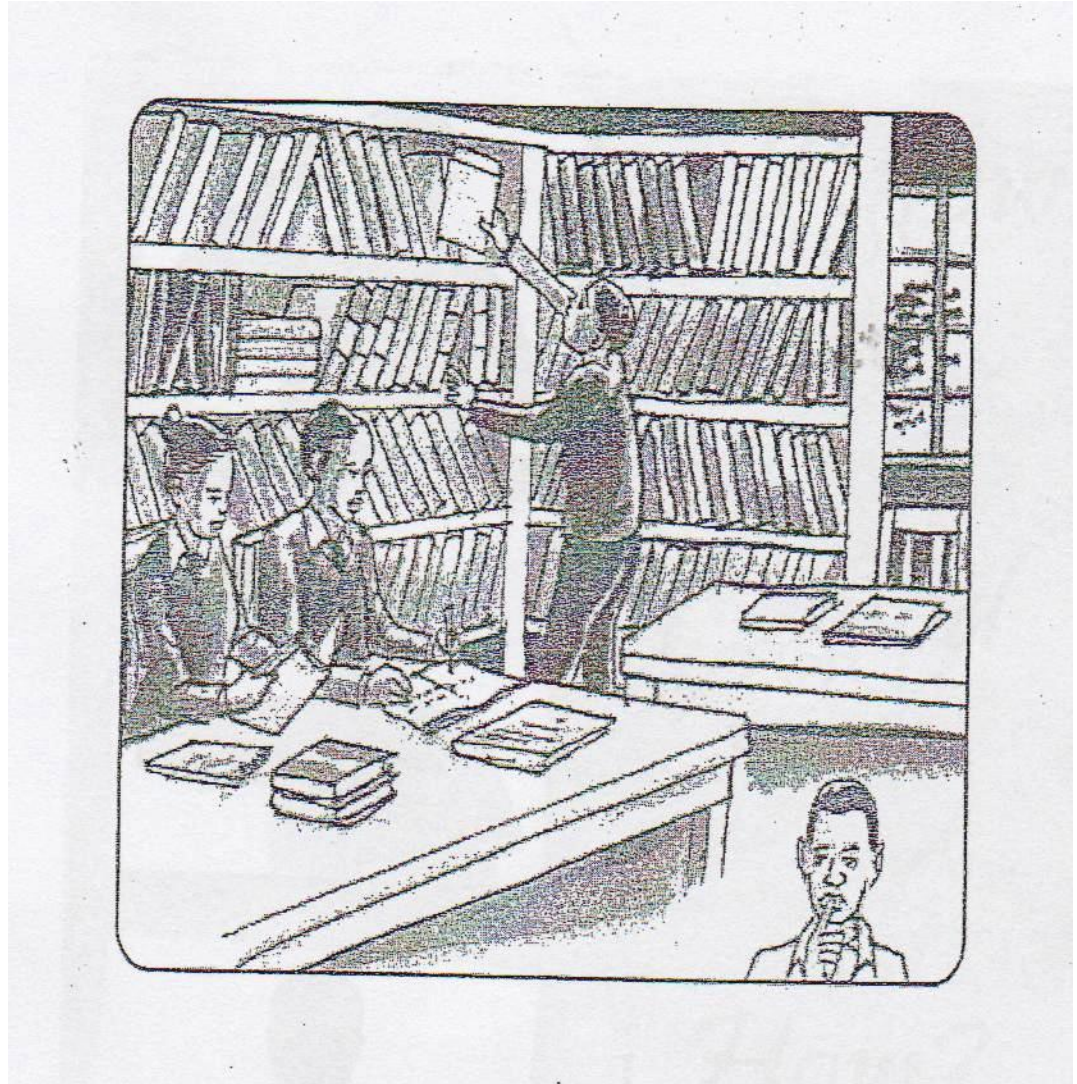


Gathered

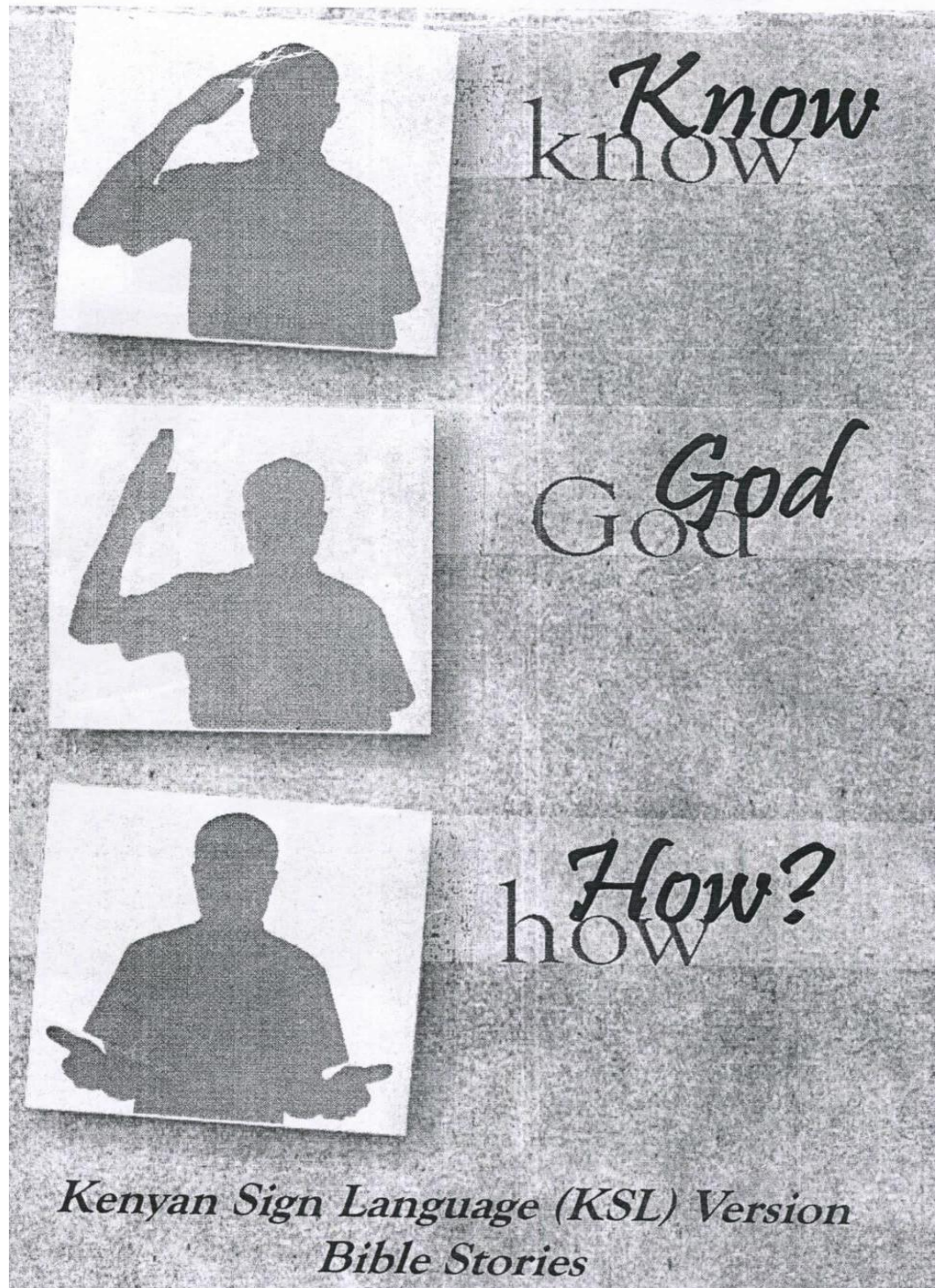


Crossed

**APPENDIX 20: LEARNERS IN CLASSROOM (TEACHING USING SIGN LANGUAGE)**



**APPENDIX 21: TEACHING CHRISTIAN RELIGIOUS EDUCATION  
USING THE SIGNS**

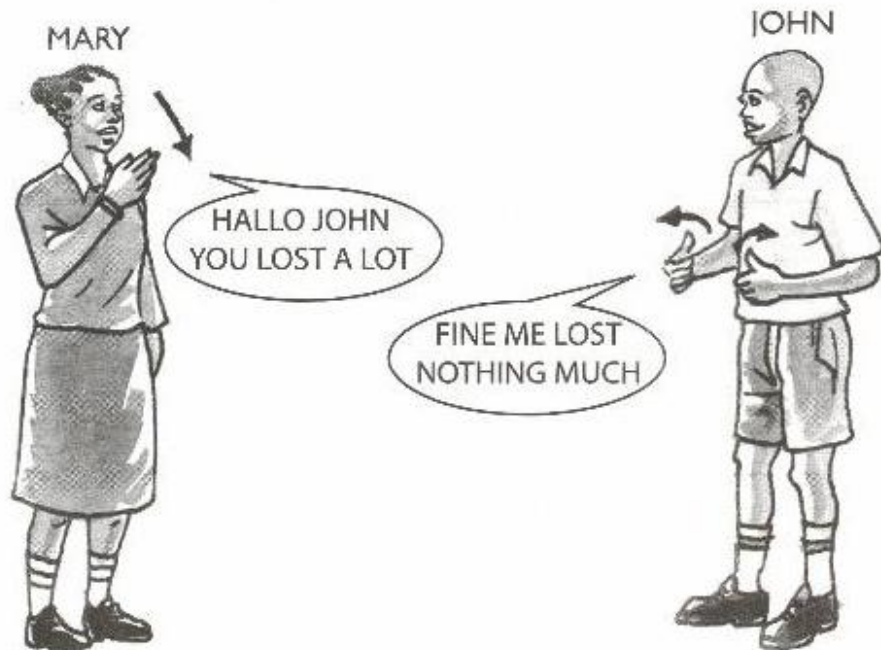


## APPENDIX 22: FLUENT SIGNING SKILLS



### FLUENT SIGNING SKILL

TIME YOU MEET FRIEND YOU USE KSL COMMUNICATE//



- |      |   |                                      |
|------|---|--------------------------------------|
| MARY | - | HALLO JOHN YOU LOST MUCH//           |
| JOHN | - | FINE ME LOST MUCH NOTHING/ BUSY BUSY |
|      |   | SMALL/ NOW NAIROBI COME FINISH//     |
| MARY | - | YOU SCHOOL EXAM PASS FINISH          |
| JOHN | - | YES ME DOCTOR FUTURE//               |

**APPENDIX 23: CLASS – WORK IN SIGN LANGUAGE**

MALE / FEMALE GOD CREATE SAME//

GOD LOVE ADAM / MAN FIRST MAKE//

SAME GOD CREATE EVE/ GARDEN NAME EDEN STAY//

**ACTIVITY**

2. REVISION QUESTION

III. GOD MAKE-----/-----//

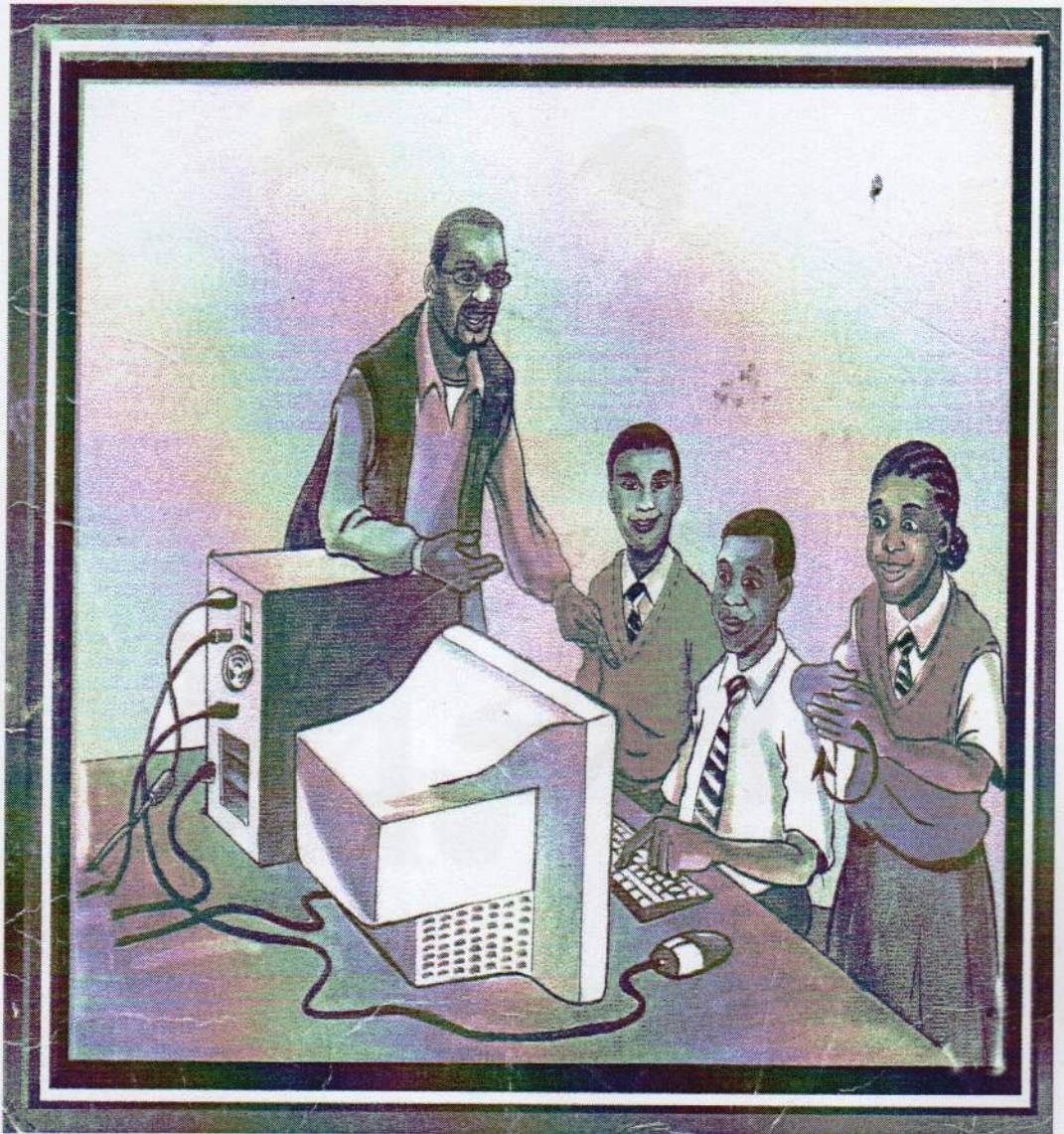
IV. GARDEN NAME -----(UHURU PARK/ EDEN)

**PLAY ROLE**

**ACTIVITY:** MALE/ FEMALE//

**EXAMPLE:** ACT/ GARDEN/EDEN//

**APPENDIX 24: THE HEADTEACHER COMMUNICATING TO LEARNERS USING SIGN LANGUAGE**

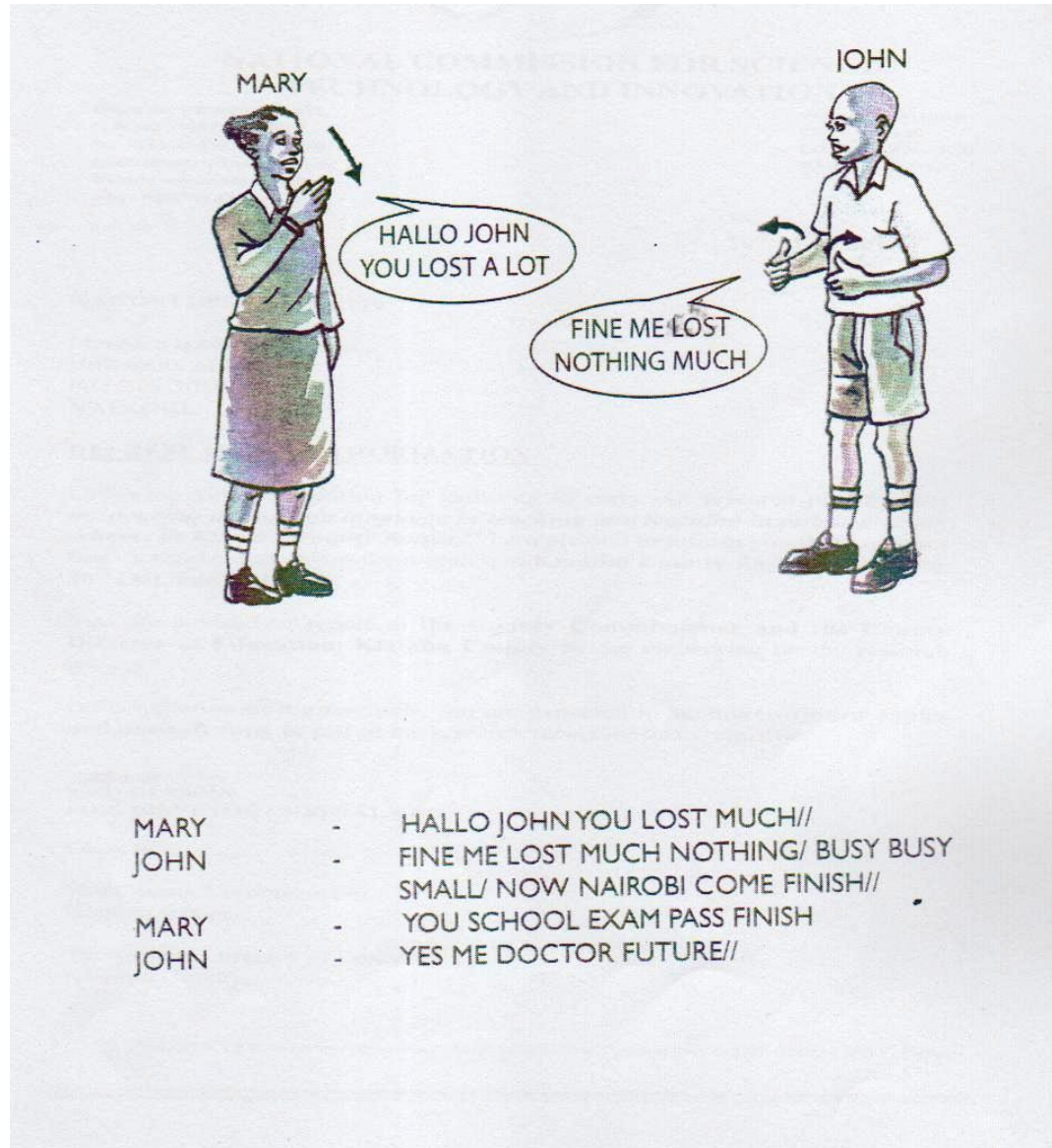




**APPENDIX 25: RELATIONS AMONG LEARNERS**



**APPENDIX 26: GOOD RELATIONS AMONG LEARNERS**



## APPENDIX 27: AUTHORIZATION LETTER



### NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,  
2241349, 310571, 2219420  
Fax: +254-20-318245, 318249  
Email: secretary@nacosti.go.ke  
Website: www.nacosti.go.ke  
When replying please quote

9<sup>th</sup> Floor, Utalii House  
Uhuru Highway  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref: No.

Date:  
20<sup>th</sup> May, 2015

NACOSTI/P/15/1916/6116

Florence Bibianah Pakata  
University of Nairobi  
P.O Box 30197-00100  
NAIROBI.

#### RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *“Factors influencing use of sign language in teaching and learning in public primary schools in Kiambu County, Kenya,”* I am pleased to inform you that you have been authorized to undertake research in **Kiambu County** for a period ending **30<sup>th</sup> October, 2015**.

You are advised to report to the **County Commissioner and the County Director of Education, Kiambu County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

  
SAID HUSSEIN  
FOR: DIRECTOR GENERAL/CEO

Copy to:

The County Commissioner  
Kiambu County.


The County Director of Education  
Kiambu County.

*National Commission for Science, Technology and Innovation is ISO 9001:2008 Certified*


## APPENDIX 28: RESEARCH PERMIT

**CONDITIONS**

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.
2. Government Officers will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.



**REPUBLIC OF KENYA**



**National Commission for Science, Technology and Innovation**

**RESEARCH CLEARANCE PERMIT**

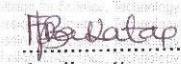
Serial No. A **5139**


**CONDITIONS: see back page**

**THIS IS TO CERTIFY THAT:**  
**MS. FLORENCE BIBIANAH PAKATA**  
**of UNIVERSITY OF NAIROBI, 30231-100**  
**nairobi, has been permitted to conduct**  
**research in Kiambu County**

**on the topic: FACTORS INFLUENCING**  
**USE OF SIGN LANGUAGE IN TEACHING**  
**AND LEARNING IN PUBLIC PRIMARY**  
**SCHOOLS IN KIAMBU COUNTY, KENYA**

**for the period ending:**  
**30th October, 2015**

  
**Applicant's Signature**

  
**Director General**  
**National Commission for Science, Technology & Innovation**

**Permit No : NACOSTI/P/15/2015/6116**  
**Date Of Issue : 20th May, 2015**  
**Fee Received :Ksh 1000**