

**CHALLENGES TO LEARNING OF KISWAHILI AMONG  
CHILDREN WITH HEARING IMPAIRMENT: A CASE  
OF MUMIAS PRIMARY SCHOOL FOR THE DEAF,  
KAKAMEGA COUNTY, KENYA**

**BY**

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## DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

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## **DEDICATION**

I dedicate this thesis first to my Creator, the Almighty God who inspired me to carry out the study and to my entire family for their unfailing support, throughout the entire period of study.

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## OPERATIONAL DEFINITIONS OF TERMS

**Effective learning:** ability for learners with H.I to read, write and use signed media

**Excellence:** performing well in Kiswahili by learners with H.I.

**Hearing impairment:** loss of hearing leading to inability to engage in academic pursuits through auditory channel

**Language 1 (L1):** language learnt first by a child, in this case a gestural system

**Language 2 (L2):** the second language learnt by a child, in this case an oral language

**Learner:** pupil with hearing impairment

**Performance:** how a learner does either well or poorly in academics

**Total Communication:** a philosophy comprising all strategies employed in communicating with learners with hearing impairment

## ABBREVIATIONS AND ACRONYMS

ASL	American Sign Language
B/BA	Bilingual/Bicultural Approach
B.Ed.	Bachelor of Education
DQAS	Directorate of Quality Assurance and Standards
EARS	Educational Assessment Resource Services
HI	Hearing Impairment
IEP	Individualized Educational Program
KCPE	Kenya Certificate of Primary Education
KCSE	Kenya Certificate of Secondary Education
KANU	Kenya African National Union
KIE	Kenya Institute of Education
KISE	Kenya Institute of Special Education
KNEC	Kenya National Examinations Council
KSL	Kenyan Sign language
L1	Language one
L2	Language two
MOE	Ministry Of Education
PL	Public Law
QAS	Quality Assurance and Standards
S-R-R	Stimulus-Response-Reward
SNE	Special Needs Education
TC	Total Communication
T/L	Teaching/Learning or Teacher's/Learner's
UMC	United Missionary Conference
USA	United States of America

## ABSTRACT

The study investigated challenges of learning Kiswahili amongst pupils with hearing impairment. This was driven by the fact that Kiswahili is important, not only as a national and official language in Kenya, but as a compulsory subject in primary and secondary school curricula. There had been an outcry from various stakeholders that learners performed poorly in Kiswahili in both local and national examinations. Some stakeholders had even conceded that Kiswahili overburdened learners since they already had to learn two languages (English and KSL) and that it should be deleted from the curriculum. The focus of this study was academic performance of learners with H.I. in Kiswahili, teaching and learning methods employed, conditions requisite for excellence and educational resources used in teaching and learning Kiswahili. The study was carried out at the Mumias School for the Deaf in Kakamega County, Kenya. The school was purposively selected because all the pupils in the school had hearing impairments. A sample size of six teachers and thirty-two pupils were involved in the study. The study was guided by the behaviorist theory of language acquisition which emphasizes language learning through Stimulus-Response-Reward (S-R-R) chains. It employed qualitative approach as a major research methodology and was carried out in the form of a case study. Quantitative analysis was used to compare K.C.P.E results between Kiswahili and other subjects in the school. The six instruments used for data collection were: non-participant observation guide, three interview guides for the head teacher, Kiswahili teachers and learners with H.I., document analysis and data sheets. Raw data collected was categorized into themes from which the objectives of the study were derived. Accordingly, the analysis was done following objectives of the study and research questions. Data presentation was done using frequency distribution tables, pie charts, histograms line graph and descriptive passages. Interpretation of the study findings was done in the light of the tenets of the study guiding theory of Stimulus-Response-Rewards(S-R-R). The study found that performance in Kiswahili was poor due to several reasons: teaching methods did not include most of the elements of TC or IEP, conditions at the school were not conducive to effective learning of Kiswahili, and educational resources available at the school were greatly under-utilized. Lastly, recommendations on how to improve on the short-comings realized in the findings and topics for further research were made.

## **CHAPTER ONE**

### **1.0 Introduction**

This chapter presents background to the study, statement of the problem that was investigated, purpose of the study, objectives that were to be realized and research questions. Other components include significance of the study, the scope and limitations of the study, assumptions of the study, operational definition of terms, theoretical framework and finally the conceptual framework of the study.

### **1.1 Background to the Study**

Kiswahili is rated among major languages of the world today (Chiraghdin & Mnyampala, 1977). It is broadcasted widely in the media and taught by many universities worldwide (Chiraghdin & Mnyampala, 1977). The language has continued to receive appraisal both locally and globally. In Eastern Africa, for instance, it is lingua franca and as such facilitates communication among several people of diverse linguistic background. In Kenya, the teaching of Kiswahili dates back to 1909 when the then United Missionary Conference (UMC) decreed vernacular languages and Kiswahili to be used as media of instruction in classes four and five in African schools. English was adopted for optional instructions in those classes while it remained strictly the medium of instruction in European and Asian schools (Chiraghdin & Mnyampala, 1977).

Various Education commissions later on came up with varied recommendations concerning language use in schools. The Beecher Report of 1948 laid emphasis on teaching vernacular languages with English replacing Kiswahili as Kenya's lingua franca. The use of English as a medium of instruction would depend on how qualified

teachers were to handle the subject successfully. By 1953, English was made a compulsory medium in examination held at the end of the eight years primary cycle. Kiswahili was developed to become a second language in secondary schools, while gradually fading so that by 1958, it was no longer taught extensively in primary schools (Whiteley, 1974). The Kenya Education Commission of 1964 recognized Kiswahili both as being of a unifying national influence and also as a means to the emergence of a Pan- African Community. Subsequently, it proposed that Kiswahili be made a compulsory subject in primary schools (Shiundu & Omulando, 1992).

After independence, Kiswahili started permeating various fields and quarters in the nation of Kenya. In 1969, the constitutional sector made knowledge of Kiswahili compulsory for one to register for citizenship. In the judiciary, Kiswahili and vernacular languages were made the official languages in the lower courts whereas English remained the official language in high courts. In the civil service, officers qualified for colonial service after successfully going through a preliminary oral examination and a written test in Kiswahili. The local government appreciated the significance of Kiswahili when in September 1969, the Mombasa council agreed that Kiswahili becomes the official language in their deliberations (Whiteley, 1974). The parliament later on amended the constitution to be able to conduct proceedings of the National Assembly in Kiswahili which had initially been done in English (Mbaabu, 1985). Formal recognition of Kiswahili as a national language was declared in August 1969 by the National Governing Council of, the then ruling party, Kenya African National Union (KANU). In 1976, the Gachathi Report recommended Kiswahili to be taught as a compulsory and examinable subject in primary schools. This was not realized until much later in 1985 with the inception of the 8-4-4 system of education.

Public universities, Kenyatta University included, taught aspects of Kiswahili under the Department of Linguistics and African languages. Moi University started a department of Kiswahili as recommended by the Mackay Report of 1981. Recommendations by various education commissions have paved way for Kiswahili language and composition to form part of the mandatory Kenya Certificate of Primary Education (KCPE) and Kenya Certificate of Secondary Education (KCSE) examination papers to date (Shiundu & Omulando, 1992). This status quo has been implemented in all school categories including special schools. Today, the new constitution has made Kiswahili a second official language of Kenya after English. Specifically, children with hearing impairment have had to compete favorably with their hearing peers, hence the adaptation of the regular school curriculum to suit their need (Kilei, 2003). Schools had first to address their communication needs to facilitate the competition.

## **1.2 Statement of the Problem**

From the background to the study, it is evident that Kiswahili has increasingly become prominent due to its demand and use not only as a national and international language but also as a medium of instruction in lower primary and as a compulsory examinable subject (Shiundu & Omulando, 1992). Since the existing curriculum did not give special preference to children with hearing impairment, it posed many challenges to its teaching/learning. Hence, the study focused on challenges to learning of Kiswahili among children with hearing impairment as was necessitated by the fact that performance in Kiswahili had remained dismal (Kilei, 2003). Further, there was need to establish the prerequisite issues that had to be addressed within the academic

curriculum to make it possible for the learners with hearing impairment to compete favourably.

### **1.2.1 Purpose of the Study**

The purpose of the study was to investigate challenges to learning of Kiswahili among children with hearing impairment. Specifically the study sought to find out teaching learning strategies used in teaching Kiswahili, educational resources available and how they were utilized as well as conditions requisite for excellence in Kiswahili.

### **1.3 Objectives of the Study**

The objectives of the study were to:

1. Analyze the performance of learners with H.I. in Kiswahili at school level.
2. Determine effectiveness of teaching/ learning methods employed in teaching children with H.I.
3. Establish conditions requisite for learning Kiswahili language by learners with H.I.
4. Examine educational resources used in teaching learners with H.I.

### **1.4 Research Questions**

The study sought to answer the following questions:

1. How is performance of learners with H.I in Kiswahili rated at school level and within the national context?
2. Which teaching/learning methods do teachers employ in teaching children with H.I?

3. What conditions are requisite for learning Kiswahili language by learners with H.I?
4. Which educational resources are used in teaching learners with H.I?

### **1.5 Significance of the Study**

The significance of Kiswahili as a national language for Kenya could not be underscored. Mbaabu, (1985) postulated that Kiswahili poised to be the common language in Africa, and had the oldest and richest written literature in Africa, south of the Sahara. In academic circles, the language is one of the compulsory subjects in both KCPE and KCSE examinations, and up to courses at the tertiary level. Findings of this study might influence policy making in teaching of Kiswahili to learners with hearing impairment earlier in life. In theory, a new way of evaluating H.I education might be considered. In practice, teachers might be assisted to evaluate their system and take up active roles in creating change in teaching Kiswahili for learners with hearing impairment. Learners might be introduced to signing skills, reading and writing Kiswahili in their early years in life even before getting enrolled in formal school. This would help improve performance.

### **1.6 Scope and Limitation**

#### **1.6.1 Scope**

The study was carried out in Mumias Primary School for the Deaf. The school is one of the oldest schools established in Kenya in 1961. Out of the thirty-four schools for learners with hearing impairment in Kenya, it would do well in most subjects but Kiswahili. The informant scope included upper primary classes four to seven pupils, Kiswahili teachers and the head teacher. The content scope considered the four

language skills: listening (receptive skills), speaking (expressive skills), reading and writing and teacher's official documents that were scrutinized.

### **1.6.2 Limitation**

Data collection was almost hindered by two factors: Kiswahili being rendered an optional subject at K.C.P.E. which led the school into leaving the subject out of the time table in favor of K.S.L. A second factor was financial constraints experienced by the researcher as a postgraduate, self - sponsored student which delayed commencement of the data collection and data analysis process up till September, 2011.

### **1.7 Research Assumptions**

This study assumed that:

1. Teachers consciously evaluated the learning processes and were aware of limitations facing learning of Kiswahili and had constructive thoughts on which they could base their recommendations.
2. Schools for learners with hearing impairments were also KCPE examination centres.

### **1.8 Theoretical Framework**

The study was guided by the behaviorist theory of language learning which emphasizes the major role played by the environment in language learning or acquisition. Infants learn language from human role models through a process involving imitation, rewards and practice. In 1904, Pavlov carried out an experiment of ringing a bell signaling provision of food to a dog, causing it to salivate. He did this

severally till the dog got conditioned and would salivate on hearing the bell ring without provision of food.

In Pavlov's classical conditioning, the meat powder is considered an unconditioned stimulus (UCS). The dog's salivation is unconditioned response (UCR). The bell is a neutral stimulus until the dog learns to associate it with food. The bell becomes a conditioned stimulus (CS) which produces the conditioned response (CR) of salivation after repeated pairings between it and food. Pavlov's language learning theory had a significant role to play in this study. The Kiswahili visual aid was considered an unconditioned stimulus. The learner's performance of reading or signing of Kiswahili words was unconditioned response (UCR). The candy (reinforcer) was a neutral stimulus until the pupil learned to associate it with Kiswahili language. The candy became a conditioned stimulus (CS) which produced the conditioned response of signing or reading Kiswahili after repeated pairings between it and the visual aids.

Barchier(1994) posited that application of behaviorist theory of language development had affected education at many levels. The best known was the practice of reinforcement. Reinforcing correct utterances in severely language- delayed children by giving them chocolate caused a repeat of the utterances. Michael (2005) offered a simple explanation for changes in behavior as the connection of environmental stimuli with certain responses. He explained that when a hungry infant was fed with milk, the milk became the stimulus of an unconditioned response. If the mother said the word "milk" prior to or during feeding of the infant, the word milk (unconditioned stimulus) caused a conditioned response in the child that was similar

to the unconditioned response to the milk perhaps with the salivation or cessation of crying. Once the word “bottle” was connected to the word “milk” that word might cause a conditioned response. The framework of response to stimuli accounted for the behaviorist theory of language acquisition. The environment provided the stimuli during the child’s early years usually in the form of a parent or care taker talking and later on the teacher. The learner would respond with utterances, presumably imitated or generalized from the stimuli. The environment would provide a reward in the form of acknowledging or rewarding this language. These chains of Stimulus-Response-Reward (S-R-R) would result in generalizations that lead to other S-R-R chains. Watson, an American behaviorist observed that infants acquired words along with understanding of their functions through a system of experimental trials and requisite rewards. This emphasized the role of reinforcement in language acquisition. Inappropriate learner’s responses to stimuli were extinguished through lack of recognition or rewards.

The S-R-R chains were tenets by which the study was guided. In a class for learners with hearing impairment, both the teacher and the learner should be endowed with total communication proficiency. The teacher (environment) would use TC to provide stimulus, in this case, Kiswahili words to the learner. The learner would use his receptive skills to observe lip movements or signs or listen to the utterances elicited. The learner then would respond as the teacher listens or observes the signs made. The environment (teacher) would acknowledge or reward the appropriately made attempts or responses. These rewards could be tangible or social. The process would be done repeatedly for the words or language patterns to be made permanent. Use of rewards encouraged formation of S-R-R chains and the process would be repeated to facilitate

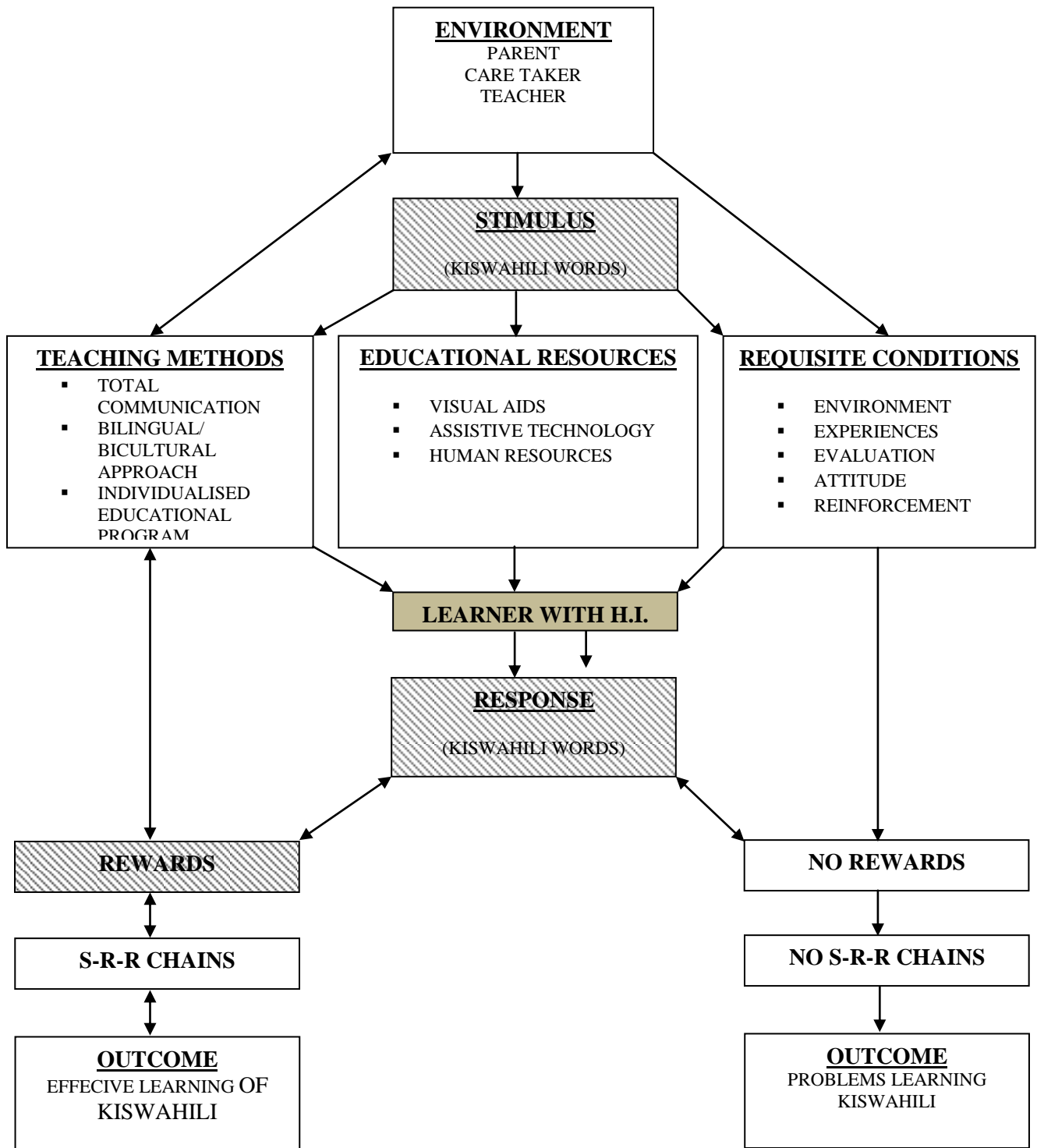
teaching/ learning other Kiswahili words. Inappropriate responses would be extinguished by withholding rewards or failing to recognize the responses.

The behaviorist theory has three distinct but related tenets: Stimulus, Response and Rewards. The first tenet led to realization of the second and fourth objectives on variables of teaching/ learning methods and educational resources used in teaching learners with hearing impairment. A teacher (environment) would present a stimulus by selecting appropriate teaching/ learning methods and educational resources to use in teaching/ learning Kiswahili. Data was collected and analyzed according to the themes already identified under teaching/ learning methods as well as educational resources.

The second tenet on response assisted on realization of objective number one where performance in Kiswahili by learners with H.I was rated. Data was collected and analyzed under the theme of performance in Kiswahili. Document analysis of records elicited H.I. learner's performance at school level and national level (K.C.P.E.)

The third tenet on rewards facilitated realization of objective number three. Use of rewards after evaluation of learner performance; acted as a motivating factor in teaching and learning. Data was collected on conditions requisite for learning Kiswahili such as teacher/ learner attitude, enriched learning environment, evaluation and learning experiences. The data was then analyzed under the theme already identified. Appropriate use of reinforcement would encourage formation of more S-R-R chains. Inappropriate responses were not rewarded.

### 1.9 Conceptual Framework<sup>1</sup>



<sup>1</sup>Adopted from Orodho (2004)

**Fig.1: Tenets of Behaviorist Theory**

The conceptual framework shows interrelationships between variables of the study and the three tenets of the behaviorist theory of language learning. The variables of teaching/ learning methods, educational resources and conditions requisite for teaching/ learning Kiswahili were necessary in the variable of Learning Kiswahili. The tenets of Stimulus, Response and Rewards (S-R-R) were also necessary in influencing learning of Kiswahili. The stimulus from the environment (teacher) would be provided through appropriate teaching/ learning methods and use of relevant educational resources. If the learning environment was conducive, the learner would respond to the stimulus either appropriately or otherwise. The environment (teacher) would reward the appropriate responses. The inappropriate responses were neither acknowledged nor rewarded. Once the teacher reinforced the appropriate responses, the cycle of S-R-R chains would most likely begin again and more words in the language would be learnt.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This section presents a review of literature related to the study outlined under the following sub-sections derived from the objectives of the study: Learning of Kiswahili in Kenya, teaching/learning methods employed in teaching children with hearing impairment, conditions requisite for excellence in learning Kiswahili and educational resources used in teaching learners with hearing impairments. Finally, a brief summary of the literature reviewed is outlined.

#### **2.2 Learning Kiswahili in Kenya**

Kiswahili is a mandatory subject at primary and secondary school levels of education in Kenya. It is a tool used to promote and enhance unity and patriotism among learners. As a cultural heritage, learners feel proud conversing in the language during social interactions. It unifies and cultivates not only national but international relations as well (K.I.E, 2002). A lot of transactions take place between business friends and other people outside school. Hence, this becomes a means of economic and individual development. As children join primary school, they are expected to acquire pre-requisite language skills by the end of eight years. They should be able to listen, speak, read and write in Kiswahili and develop interest in this subject beyond primary school level. Learners with hearing impairment are not exceptional since they pursue the same curriculum (K.I.E,2002). Ultimately, they should read, write and use signed media for Kiswahili language. It is expected that they too pursue the subject at higher levels of education.

For realization of this goal, the home environment needs to cultivate interest in the child by encouraging interactions in Kiswahili. Upon formal enrolment in school, the teachers develop the interest so cultivated at all grades. They teach as per the curriculum requirement and evaluate the learner performance accordingly.

### **2.2.1 Second Language Learning / Acquisition**

A child learns a language he/she uses to interact with parents or caregiver. Doughty and Long (2002) confer environmental input as one of the prerequisites to language development. The authors posit that for language acquisition to occur, interaction must take place as opposed to merely hearing it spoken. A hearing child of deaf parents, for instance, even if exposed to the television or radio will not acquire ability to speak or understand English but American Sign Language (ASL) (Yule, 1985). According to this author language acquisition is easier than language learning. The former refers to gradual development of ability in language by using it naturally in communicative situations. The latter applies to a conscious process of accumulating knowledge of vocabulary and grammar of language. The author also contends that distinction between the two is a primary difficulty of second language learning, which he recounts to be a barrier among others.

Another barrier is the issue of optimum age for language learning. Kuhl (1993) alludes to this as a critical period for language development while Cook (1993) asserts that the period lasts until puberty. According to Yule (1985), teenagers are much more self-conscious than youngchildren. There is a strong element of unwillingness or embarrassment in attempting to produce the different sounds of other languages

among teenagers. As such he believes that young children find it easier to learn L2. Yule (1985) refers to time factor as another barrier to L2 learning. He postulates that most people try to learn another language during teenage/adult years. This is done in a few hours each week of school time rather than via constant interactions experienced by the child. He observes that it becomes difficult as adults' tongues get stiff.

Yule (1985) recounts lateralization as another impediment to L2 learning. This refers to one-sidedness of the human brain. There is an apparent specialization of the left hemisphere for language acquisition. This process begins in early childhood and is completed by puberty. In his view part of the brain is open to accept a "language program" which if not provided at this critical age, the facility is closed down. By puberty, learning of L2 would present insurmountable difficulties (Yule 1985). Similarly, Cook (1993) proposes that after critical period language acquisition will result into incomplete development. Yule (1985) posits that it may become difficult to acquire another language fully. The language faculty is taken over by the features of the first language. This results into loss of flexibility to receive the features of another language and thus citing lateralization of the brain as a crucial factor of learning L2.

These barriers to L2 by children with normal hearing could be paralleled to L2 learning/acquisition by children with hearing impairments. The challenge is early stimulation of language use after diagnosis of hearing loss. Early intervention measures should be put in place to have learners with hearing impairment engage in learning/acquisition of Kiswahili language as early as possible.

### **2.2.2 Language Acquisition Among Children with H.I**

Various studies have been carried out concerning language among children with hearing impairment. Casper and Fifer (1984) contend that fetuses begin to hear sounds in the uterus around the seventh month. Condon and Sander postulate that infants thrash (move their hands and legs) in time with the rhythm of speech spoken around them (Kirk, Gallagher & Anastasiow, 1997). They appear to be learning the rhythm of the language of their home by moving their bodies in time with it. However children with pre-linguistic deafness do not move their arms and legs in this way. The challenge here is that as soon as they are born, a diagnostic test should be done to confirm the hearing loss. Early intervention measures should commence where they are given early stimulation for language.

Hearing children learn how to talk by listening to the people around them use language meaningfully. For those children who do not hear, the listening experience does not occur. Most of them get to school at age three or above without any speech or signing skills at all. They begin learning English when they start school and will show an ever increasing gap in vocabulary growth. Paul (1988) posits that these children develop the English language typically in the same way as the normally hearing children but at a considerably lower rate.

According to Chomsky (1989), all children have a genetic push to acquire language whether in rich language environments or poor ones. If they cannot hear, they can develop an adequate system of gestural language. Further on, Petito and Marentette (1991) observe that children with severe hearing losses gesture at about the same developmental age as hearing children babble. They use babbling-like hand gestures

that are sign equivalents of speech sounds. When no speech or gestural system is provided, each child develops a system that is unique and not considered normal (Paul & Quigley, 1991).

Gestures are precursors to learning language in form of manual signs for infants with hearing losses. Parents should therefore recognize these and reinforce them the way they do for oral sounds (Kirk et. al. (1997). Petit and Marentette (1991) concur with Chomsky (1989) that infants are innately predisposed to learn language and do so by stimulating the environment by babbling.

For all children language begins before birth and proceeds during the first year of life. It therefore becomes mandatory to provide children with severe pre-linguistic hearing losses with early childhood special education and amplification as soon as they are diagnosed to be deaf. Such provisions will facilitate for experiences they need to use their innate mechanisms to figure out syntax and pragmatics of their language. The two are aspects of language that children with pre-linguistic hearing losses have difficulty mastering (Paul & Quigley, 1991). Consequently, the challenge here is introduction of sign language during the first year of life to those who can hear no sound. This will encourage normal gestural language which has most of the features of American English (Kirk et. al, 1997).

### **2.2.3 Categories of Hearing Impairment**

The earlier the hearing loss occurs in a child's life the more difficult they will have developing oral language. For this reason, professionals frequently use terms congenitally deaf to refer to children born deaf and adventitiously deaf to those who

acquire deafness at some time after birth (Hallahan & Kauffman, 2008). More specific terms used in pinpointing language acquisition as critical are; pre-lingual deafness which means deafness present at birth or occurring early in life at an age prior to development of speech or language. Post-lingual deafness on the other hand refers to deafness occurring at an age following the development of speech and language.

It is much more difficult for children who have pre-lingual deafness to learn to speak than for those who have acquired deafness. This is mainly because they do not receive auditory feedback from sounds they make. They have not heard an adult language role model. Hallahan and Kauffman (2008) posit that the most severely affected areas of development in the person who has hearing impairment are comprehension and production of language. They assert that people who are hearing impaired are generally deficient in the language used by most people of the hearing society in which they live. Most of the speech they produce is unintelligible.

In defining hearing impairment educators are concerned primarily with the extent to which the hearing loss affects the ability to speak and understand spoken language (Kirk, et al 1997). They refer to people with hearing impairment who cannot process linguistic information as deaf whereas those who can as hard of hearing. The former term refers to those whose hearing loss measures 91 decibels (dB) and above. The latter refers to those whose hearing loss measures 27 decibels (dB) up to the range of 90 decibels (dB).

The table below illustrates the categories of hearing loss:

<b>Degree of impairment</b>	<b>Description</b>	<b>Label</b>
Up to 26 dB	Normal	Normal hearing
27 to 40 dB	Slight	Hard of hearing
41 to 55 dB	Mild	Hard of hearing
56 to 70 dB	Moderate	Hard of hearing
71 to 90 dB	Severe	Hard of hearing/deaf
91+ dB	Profound	Deaf

*Source: Paul and Quigley (1990)*

Despite the hearing loss the hard of hearing have enough residual hearing that can enable them to hear speech and acquire spoken language with or without a hearing aid (Paul & Quigley, 1991). The deaf have a hearing loss that is so severe that they cannot hear and understand speech even if the sound is made louder for them. Hearing aids may only assist them to be aware of some environmental sounds such as booming sounds, sounds made by moving vehicles and the like.

Marrying the professionals and educators definitions of hearing impairment, children who have post lingual deafness or are hard of hearing could acquire functional Kiswahili language. In this case the language should be introduced to them at that critical age of language acquisition. They should be exposed to the language within their home environment before enrolment into formal schooling.

#### **2.2.4 Learning Language Skills by Children with H.I.**

English and Kiswahili are diverse languages but they use fairly similar letters of the alphabet. Teaching and learning of reading and writing can basically be done using similar strategies for the two languages. Here, the challenge is that listening and speaking for children with hearing impairment are skills that need a differentiated approach, hence the need for this study that was carried out.

##### **a) Listening**

The auditory sense is an important channel for learning and as such has pre-requisite skills to be developed before use of the sense. Otiato(2002) observes that the skills include auditory discrimination, auditory perception and auditory memory as elements of auditory training. This assists learners in differentiating sounds within the environment or recognition of the sounds, storage and recalling of these sounds. Hall (2008) recommends that this training should commence immediately after diagnosis of hearing loss.

##### **b) Speaking**

The main limitation of children with hearing impairment is that of communication. As a result of their handicap, they will have limited language for effective communication. In the school system, they learn speech in the form of five specialist subjects: speech readiness which trains children to be aware of and interested in spontaneous use of voice. Articulation readiness training enables them to place speech organs in the correct position in order to articulate the necessary speech sound. Individual speech training addresses an individual child's misarticulated speech sounds. Group speech offers training to groups of children with H.I with an aim of

giving spontaneous use of a good pleasant voice. Auditory training as cited above offers purposeful listening to enable the child use any residual hearing (KISE, 1997).

### **2.3 Teaching/ Learning Methods**

Many deaf children who have not been involved in early intervention programs enroll in school without any speech or signing skills at all, and mostly with a severe language delay. Meadow (1980) contends that most of them never catch up academically. Educators have had different views on the modes of communication to be emphasized in teaching language to the deaf (Hunt & Marshall, 2002). Two major approaches and a number of methods have been used: The natural approaches (Wirth, 2005) treat language holistically. Constant exposure to appropriate language patterns is the hallmark of language acquisition. The child plays a proactive role whereby he/she spontaneously makes frequent exploitation of situations and unconsciously induces language principles, rather than being taught them. On the other hand, structural approaches are concerned with the production of grammatically accurate sentences. They treat language atomistically and analytically, emphasizing knowledge of structure of its parts and how they are related. Attention is focused on parts of speech and syntactic rules. Children learn these through drills, formal instruction and strictly sequenced curriculum (Quigley & Paul, 1984).

#### **2.3.1 Language Acquisition Approaches**

A hot debate has existed since the late 1960's between proponents of two major methods of teaching children with hearing impairment: Manualism and Oralism. Each holds onto their method as the most effective method of teaching these children. Moores (1996) contends that use of manual communication facilitates word

presentation in two different ways: sign language and finger spelling, coupled with gestures or facial expression. Oralism on the other hand stresses maximum use of the auditory channel however much of its sensitivity is reduced (Hall,2008). Speech and speech reading are modes of teaching. These methods lay great emphasis on the use of residual hearing (Mills, 1999). In this paradigm sign language is seen as least effective.

A combined medium was struck much later in the decade. In 1967, Roy Holcomb coined the term T.C, which is a philosophy of communication, not a single method (Scouten, 1984). T.C may incorporate one or several methods of communication (manual, oral, auditory or written) depending on the particular needs of the child at a particular stage of development. T.C. seems to be the bridge that allows a crossover from oral only philosophy to one that embraced sign language. Most schools and programs for children with hearing impairments supported it during the 1970's and 1980's. Kaplan (1996) comments that today the debate seems to be between T.C programs and bilingual-bicultural programs. However, he posits that simultaneous communication is the most common form of communication used in educational settings for deaf children.

Yule (1985) outlines four aids to language acquisition: the grammar- translation method is the most traditional approach which treats second or foreign language learning at par with any other academic subject. Written language rather than spoken language is emphasized. Long lists of words and a set of grammatical rules are memorized, leaving students ignorant of how language is used. The direct method, is where everything said in the classroom is expressed in L2. Emphasis is placed on

spoken language while vocabulary lists and explanations of grammatical rules are avoided. The method is meant to recreate exposure which young children have in language acquisition. The assumption is that the correct way of using the language would be “picked” up in passing.

The audio-lingual method involves a systematic presentation of grammatical construction of L2. It moves from the simple to the more complex, often in the form of drills which the student repeats. The method is influenced by the belief that fluent use of language is essentially a set of “habits” that can be developed with a lot of practice, much of which involves hours spent in a language laboratory, repeating oral drills. The communicative approach is the most recent approach widely used. It emphasizes functions of language rather than forms of correct grammar or phonological structure. It is characterized by lessons organized around concepts such as “asking for things” in different social contexts rather than forms of past tense in different sentences. It coincides with attempts to provide more appropriate materials for L2 learning which has a specific purpose. It emphasizes L2 acquisition while using it in different social contexts (Yule,1985).

Considering the four aids to L2 learning among learner’s with H.I. the challenge becomes selection of the acquisition aid that best suits the learner’s need. Most of the aids involve use of the oral mode of communication as opposed to the manual mode.

The study analysed whether the correct approaches were employed to yield the anticipated results in Kiswahili amongst children with H.I. The total communication wheel illustrates various methods incorporated in TC, which is a simultaneous practice of combining manual and spoken components ( Kaplan,1996).

**i) Sound Amplification**

Individual as well as group hearing aids are an accepted part of classroom equipment for learners with hearing impairment. Beneficiaries are those learners with residual hearing.

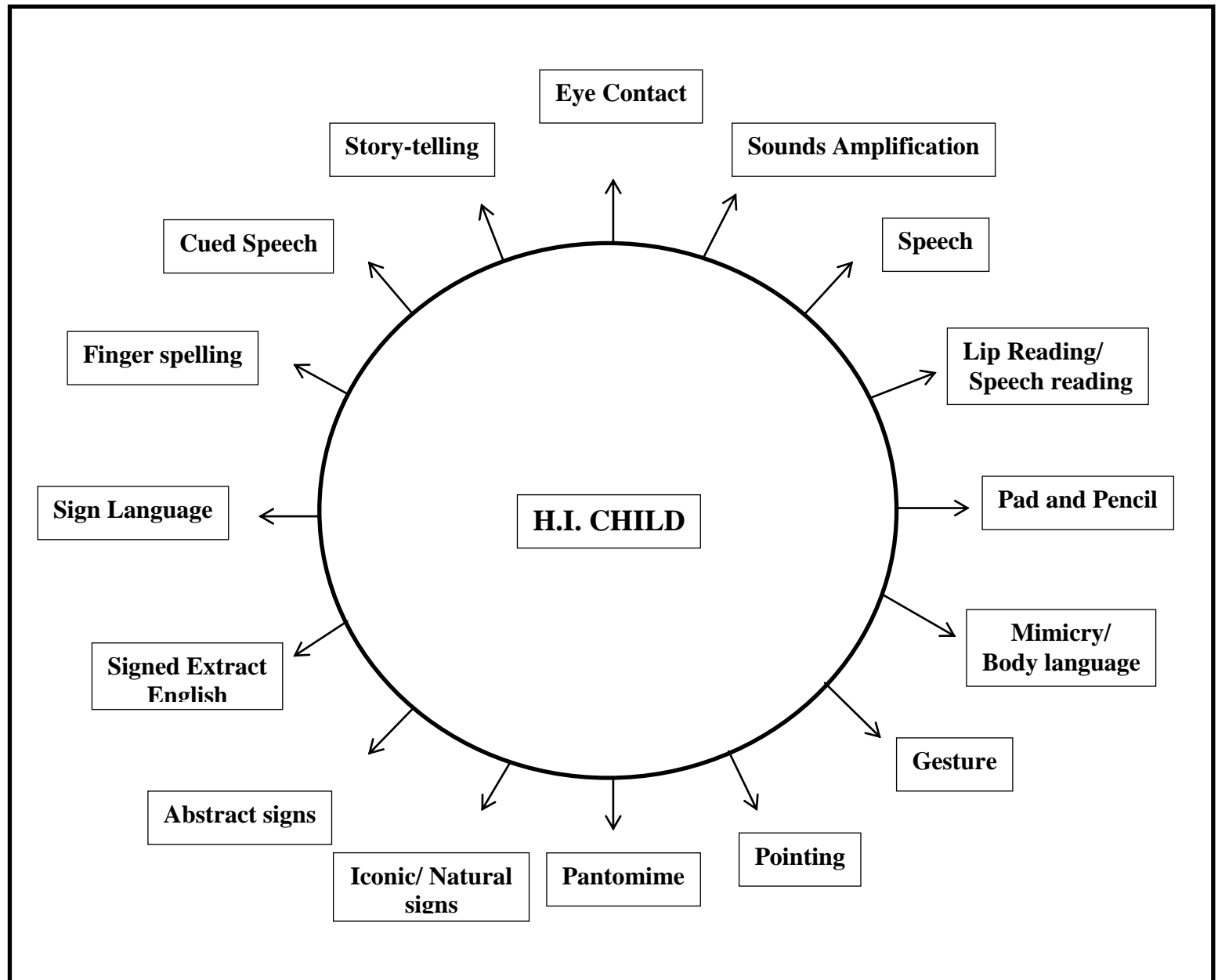
**ii) Simultaneous Method**

This is the simultaneous use of speech, lip-reading, amplification, finger spelling and language of signs. These methods can be used both in and outside the classroom and by all learners with H.I.

**i) Cued Speech**

Some words look alike when lip reading and can easily confuse the lip reader. Such are words like “mama” (mother) and “baba” (father). In order to clarify meaning, the speaker finger spells the first letter in each syllable while pronouncing the word. This is a complement to oral/ aural methods.

### 2.3.2 Total Communication (TC)



<sup>2</sup>Adopted from Okwaro, Bakari and Ogutu (2002)

**Figure 2: Total Communication Wheel**

**ii) Rochester Method**

The method combines oralism with simultaneous use of finger spelling. Every word is finger spelt near the face of the speaker as it is pronounced.

**iii) Pantomimes**

This is a sequence of events described through use of gestures, body language and mimicry without speech signs.

**iv) Graphic Symbols**

These are drawings, pictures and pictograms that can be used to communicate.

**v) Mimicry**

Facial expressions and body language can be used to convey emotions and feelings such as “frowning” to show displeasure or “smiling” to indicate pleasure.

**viii) Body Language**

Communication can be carried out through use of gestures, head and hand movements, body posture, eye contact and pointing.

**ix) Natural Signs**

These are hand shapes and movements used in communicating in daily life such as waving goodbye or beckoning to somebody or verb denoting “eat”.

**x) Signed English**

This is a form of English where signs are superimposed on words in English sentences. As one speaks, he or she signs for reinforcement. Signed English systems are the types of manuals mostly used in Total communication (Hallahan & Kauffman 2008). Finger spelling is also used occasionally to spell out certain words such as proper nouns.

**xi) Story Telling**

Children, particularly those with H.I love stories that are skillfully told. Before age six, they should have a story at least every day. Hoffmeister and Israelite (1992) posit that telling and reading stories to them is an art. The teacher should make story telling as interesting as possible by using relevant visual aids and encouraging dramatization.

**xii) Pad and Pencil Method**

This is a mode of communication which requires literate persons to use reading and writing skills. When a deaf person meets a hearing person who does not know sign language, he/she may communicate through pad and pencil.

**2.3.3 Bilingual/Bicultural Approach**

The philosophy is spearheaded by specialists in teaching persons with hearing losses. They advocate postponement of introduction of speech and posit that children should first be taught a gestural system (L1) and be introduced to oral language (L2) later on (Kirk et. al. 1997). It has been argued that there is linguistic interdependence between a child's first language (L1) and a child's second language (L2). Initial use of a

child's L1 can assist in the learning of the L2 of the school and majority community (Cummins 1992, Cummins & Swain, 1986). When good command of the L2 is achieved, use of instruction in L1 can be discontinued. However, many students demonstrate an ongoing cognitive and educational benefit in the continued use of, and instruction in two languages (Hamers & Blanc, 2000).

Sign bilingualism is often advocated for reasons of educational benefit, language maintenance and human rights (Israel, Ewoldt, Hoffmeister, Greenwald, Wilber-Leach & Brown, 1989). The wish of minority language communities to be offered education in their own language as well as the official minority or national language is to be respected. Sign bilingualism is referred to as the bilingual bicultural approach to draw attention to its cultural human rights dimension. This should be offered by certified bilingual users of both languages.

#### **2.3.4 Individualized Education Program (IEP)**

The IEP is a detailed written plan to meet the educational needs of a handicapped child. The program is founded upon the concept of individual differences, as no two individuals are exactly the same (Mba, 1991). The IEP is the heart of the American Public Law (PL 94-142) as posits Rosen (1979). PL 94-142 is an American Law on Education of All Handicapped Children Act, also known as Individuals with Disabilities Education Act (IDEA). In 1975, President Ford with Congress passed legislation that would see handicapped children and adults of ages three to twenty-one access free and appropriate public education in the Least Restrictive Environment. Teachers could borrow a leaf from this law and come up with programs tailored to suit learners with hearing impairments for any subject. Alade (2003) postulates that

primary and secondary school teachers of the hearing impaired in many developing countries have complained of lack of time and materials. They have to contend with overcrowded classrooms, which become an impediment to application of IEP. Nevertheless, she advises that adaptation of the current curriculum to the IEP would assist learners benefit from the same.

## **2.4. Conditions Requisite for Excellence**

### **2.4.1 Learning Environment**

The classroom arrangement should be adapted to suit learners' special needs in conjunction with the teaching/learning strategy in use. Learners should maintain eye contact with one another and with the teacher for ease of communication. UNESCO (1987) recommends horse-shoe arrangement for classes not exceeding ten. However in Kenya, twelve is the number signed upon by the Ministry of Education. To facilitate speech reading, the teacher should sit at a low chair to have her face at the same level as the children's faces. There should be enough light in the room particularly on the learners as well as the teacher. Such seating arrangement will allow for better inclusion of learners with hearing impairment.

### **2.4.2 Learning Experience**

A child with hearing impairment largely lacks experiences that we expect children of the same age to have. They lack knowledge and many skills in language issues (UNESCO, 1987). In their early days in school, the teacher should flood the class with language experiences and other forms of communication. Children should be involved in activities like play with toys and other things from daily life. In a class for learners with hearing impairment, the type of activities selected should enhance both

receptive and expressive skills of the learners. The activities should be relevant to individual learners' needs. The primary school syllabus for English (K.I.E, 2004) outlines these learning experiences:

**i) Receptive Skills**

A child with hearing impairment will be expected to develop and refine their listening skills through carrying out observations of poems, signed stories and short passages. Their response to signed comprehensions, participation in role play and understanding instructions, explanations, descriptions, visual materials, proverbs and announcements will go a long way in refining their receptive skills. Learning experiences are laid down with increasing complexity of content as the grade increases but basically each class has their own activities (K.I.E. 2004).

**ii) Expressive Skills**

Learning experiences for the expressive skills have a wider scope of operation as outlined in the syllabus (K.I.E, 2004). Learners are engaged in signing as a form of “speaking” in response to what they are involved in. Participation in discussions, debates, interview, asking and answering oral questions or even storytelling, among other activities can be done through signing. For advanced grades, learners can write down their responses such as letter writing, composition writing, compiling of school magazines and others. Reading of instructions and directions, library books or comprehension passages will also be a learning experience for the learners. The learners can therefore either sign, finger spell, write or read to express themselves. Drawing plays an important role in expression and appreciation of the children's creative ability (Kithure, 2002). Kithure, further points out demonstration, note

taking, tracing, modeling, mimicry and pantomime as learning experiences for these learners in addition to what is laid down in the syllabus.

Learning experiences are suggested for each language skill, reading, and writing, listening and speaking. For the learners with hearing impairments, these skills are modified into expressive signing, receptive signing, writing and observation; finger spelling supplements signing where signs are not available. Pupils' ability to sign fluently depends on language exposure. Constructive classroom signing and observation should be encouraged. As such, learners should be granted ample opportunities to sign and observe about themselves, express their ideas and opinions, sign stories, discuss events and describe their experiences (K.I.E, 2004).

### **2.4.3 Evaluation**

Evaluation is a general term used to determine any learning process. It is an approach of determining student achievement during implementation of the curriculum in the school (Shiundu & Omulando, 1992). Kissock (1981) asserts that evaluation is the process through which students' performance and program effectiveness are assessed. It presents students, teachers and curriculum developers with feedback on their success in achieving program objectives. This forms the basis for making sound decisions on which to modify and improve the program. The central concern of evaluation is determination of outcomes. Evaluation can either be formative or summative. The former is informally carried out by teachers during implementation of the curriculum. The latter is carried out formally, at the end of the course by KNEC which works closely with the DQAS and K.I.E. Part summative evaluation is however done at the end of every year for promotion of learners to higher grades (Kilei, 2003).

In evaluation of student performance, a number of evaluation tools can be applied depending on the purpose for which it is done, whether formal or informal. Shiundu and Omulando (1992) identify several tools for formal evaluation. Continuous Assessment Tests (CATS) can be organized by teachers on a weekly, fortnightly, monthly, mid-termly or termly basis. This is referred to as formative evaluation. Tools used include essays, short answer questions, objective test items or examination of actual product. Informal approaches include interviews, questionnaires and observation in assessment of personal and social adjustment. Summative evaluation for SNE learners is carried out by the KNEC in conjunction with QAS and KIE. Considering needs of learners with hearing impairments, adaptations carried out on their examinations include offering instructions in sign language, and giving extra time for them.

#### **2.4.4. Teacher's/Learner's AttitudetowardsLanguage Learning**

Teacher's attitude towards both learning and use of skills of simultaneous communication, whether positive or negative will affect performance in developing and using communication skills. Ranklin (1991), notes that the biggest question in the effective use of Manual English or American Sign Language, other than skills, is that of attitude. A teacher of English should first and foremost possess positive attitude towards the learner with hearing impairment, then the teaching of English (KIE, 2004). The right kind of attitude is mandatory in teaching of Kiswahili language as well. A teacher who possesses a positive attitude towards the learner and the subject imparts a similar attitude to them. The contrary is true as well: a teacher possessing a

negative attitude towards Kiswahili will impart it to the learners. Both the teacher and the learner need a positive attitude to be able to teach/learn the language well.

#### **2.4.5 Reinforcement**

Reinforcement or rewarding of desirable pupil behaviour is a frequently used teaching skill. When a pupil gives a correct answer to a question, the teacher would respond by saying some encouraging remarks, smiling or nodding while looking at the pupil (Shaffer, 2000). According to this author various aspects of praise, issuance of corrective feedback are positively correlated with pupils' achievement and positive attitudes. Farrant (1980) postulates that, rewards should be used to, either acknowledge success and effort or as incentives. They should never be so easy to get or else they lose their worth.

Reinforcement techniques, (Cannon and Palmiter, 2003) fall into two main categories: verbal and non-verbal. The most common verbal reinforcers are one-word or brief phrase responses such as "good, well done", among others. A verbal reinforcer such as praise, not only changes behavior but develops confidence and a positive self-image. Jacinta and Regina (1981) concur that praise is always positive reinforcement. The learner is said to associate pleasure and satisfaction with getting a problem right or answering a question correctly followed by praise .This motivates them to try harder in future.

Verbal reinforcement could also compromise teacher's response to ideas learners express by accepting them, building on them or asking questions based on them (Cannon and Palmiter, 2003). It has been proven in classes where such reinforcement

techniques are applied, pupils have more positive attitudes and higher achievement than in classrooms where pupils' ideas are not incorporated in lesson development. Such verbal reinforcement can be a powerful motivation for increasing a pupil's desire to participate.

Non-verbal reinforcement on the other hand refers to the physical messages sent by teachers through cues such as eye contact, facial expression and body positions (Cannon and Palmiter, 2003) , like frowns and impassivity from the teacher .A smile, a nod of the head and friendly eye contact can be used to encourage participation. The author further postulates that rewards if used indiscriminately become inappropriate use of reinforcement. If given too quickly they may interfere with complete development of pupils ideas. It becomes paramount that the teacher reinforces intermittently and appropriately. Different individuals respond to different kinds of reinforcement. Some pupils, for example find intensive eye contact rewarding while others find it uncomfortable. In this study, the challenge was identification of appropriate reinforcement for the learner with hearing impairment. Issuance of the reinforcement should not be done indiscriminately. Special consideration should be made for the attempts made towards learning of Kiswahili by the learner with H.I.

## **2.5 Educational Resources**

Educational resources, otherwise referred to as teaching/learning aids (Kithure, 2002) are a vital element in the learning process for the children with hearing impairment. They can be categorized into visual aids and assistive technology. Use of visual aids is most helpful since vision is the student's primary means of receiving information (Solit, Taylor &Bednarczyk, 1992).

These compensate for the hearing loss as they employ use of multi-sensory modalities in concept presentation. Concrete objects relevant to the content and sensitive to learners' special needs create and sustain interest in the lesson. Besides these, textbooks are among the most useful devices (Bamgbose. 2004). Visual aids should be placed at strategic positions in the classroom for learners' clear viewing and manipulation. Class displays should be done in an orderly manner in subject corners for ease of reference and enrichment of the learning environment. Replacement of the displays should be done regularly in accordance to subject content. Continuous use of visual aids culminates into over-learning, a very important learning strategy when dealing with the deaf.

Assistive technology is any item, piece of equipment or product system that is used to increase, maintain or improve functional capabilities of individuals with disabilities (Scherer, 2002). It can be acquired commercially off the shelf, modified or customized. When used by a person without a disability it makes an activity easier but for a person with a disability, it makes that same activity possible. According to this author, devices are available for a range of disabilities, activities, prices and technology level. A variety of these devices are available in the market for use in the classroom situation by learners with H.I.

i)

**Personal**

**Frequency Modulation System**

This system transmits sound to hearing aids through direct audio input or a looped cord worn around the neck. It enables the student to hear the teacher no matter the distance. The microphone of the hearing aid can be turned off to enable the student focus only on the teacher.

ii)

### **Loop Induction**

#### **System**

The loop system wire can be permanently installed and connected to a microphone used by a speaker. A person talking into the microphone creates a current into the wire which makes an electromagnetic field in the room. When a hearing aid is switched to the telephone setting, it picks up the electromagnetic signal whose volume can be adjusted according to the user's need.

iii)

### **Infrared System**

Infrared technology allows computing devices to communicate via short range wireless signals. Adapters are installed in many computers and hand-held personal devices such as cameras, telephone or portable media player. The device transmits the television signal to the receiver which can be adjusted to the desired volume. It could be located in areas where picture or video capture is prohibited so as to generate signals with encoded data, for the child with H.I. to access.

iv)

### **Closed Circuit**

#### **Television**

This is the use of a video camera to transmit a signal to a specific place. It enables a deaf child to still watch a film that is being shown to the class. The video camera is

set to capture the image of the reading material and display it on a monitor, for the child to read.

v)

### **Electronic**

#### **Communication Device**

Kelker (1997) proposes this device for students who are unable to correctly talk due to hearing impairment or other causes. The device has small pictures representing different words. If a student is in need of something, they push a button representing their own selves, by name and push another button representing what they need. A robotic voice will then state the student's name and the item required. This is extremely helpful for these students. It allows them to be able to communicate in a way they would normally not be able to.

Today, other technological advances in services and opportunities are availed to people with hearing impairment. Digital hearing aids are the newest aids that can be programmed by computer and customized to match the individual hearing loss and characteristics of the environment. Cheng and Neparko (2000) advocate for cochlear implants that are surgically inserted in quite a small number of profoundly deaf children, with sensory-neural hearing loss. These assist children in speech perception, production and intelligibility. Besides, telecommunication devices have made communication over a standard telephone line possible (Smith & Tyler, 2010). These telephones have small screens that display the message of the sender. Captioning, paralleled with verbal content of television programs make it easier for deaf persons to access broadcasts on television (Bynton.Gannon and Bergey 2007). In addition, large television sets have been caption chip equipped, allowing viewers to select

captioning of available programs. Technology instruction allows visual representation of course content. Computers, curricular support, access to content, research, resources and others have shown promise of becoming an integral part of classroom instruction (Lang, 1996). Internet sites for users with hearing impairments are also proliferating.

Barchiers (1994) categorizes educational resources into print display and audio-visual equipment. Audio-visual equipment includes record players, cassette players or recorders, earphones overhead projectors, film strips, television sets and computers among others. Loughlin and Martin (1987) outline three kinds of print display which include readable display, appreciative display and visitors display. Readable display is in the form of symbols and print that are easy to read such as labels and charts among others. Appreciative display includes collection of materials and writings such as posters or charts. Visitors display offers useful information about the class schedule to parents and other guests while enriching the learning environment.

KIE (2004) recommends some print resources to be used in teaching language to learners with H.I. These include: maps, word/syllable cards, sentence cards, charts, drawings, pictures, journals, dailies and directories among others. Resource persons such as sign language interpreters to work with video tapes and cassettes or to facilitate educational visits in computer labs are also recommended. The language teacher should carefully select educational resources to suit the content at hand and the learners' needs in order to facilitate meaningful learning.

## **2.6 Other Studies Carried out in the Area of H.I**

A number of studies have been carried out so far in the area of H.I. Muthoni (1991) carried out a study on bibliotherapy for the H.I. in Kenya. Bibliotherapy is suffering through psychological processes and acquisition of other remedial skills induced by reading and use of relevant information. The survey was carried out in Machakos, Kaaga and Kambui schools for the deaf, Karen vocational training institute, Machakos and Meru Educational Assessment and Resource Centres (EARC). The study found out that bibliotherapy is practised although unconsciously and without a definite policy. The researcher found major hindrances to the practice to be lack of reading materials and inadequate training for teachers and rehabilitation officers. The study recommended introduction of bibliotherapy in all schools for H.I. in Kenya and formation of a national association or panel for those practicing bibliotherapy.

Nkatha (2002) carried out a case study in Kaaga School for the deaf. The study was an evaluation of curriculum enhancement of physical fitness among deaf learners through Physical Education (P.E.) and Sports program. Target population was one hundred and thirty two (132) pupils. The researcher used experimental research design. Findings were, P.E. and sports had a positive impact on health related fitness levels of deaf children. She also found out that children showed improvement in upper body strength – endurance, low back flexibility and abdominal muscular endurance. Nkatha recommended first, that a theory lesson be introduced in the P.E. syllabus to encourage deaf children excel in sports. Secondly, teachers of adopted P.E. should carry out periodical physical fitness testing for handicapped children.

Another study on Morphosyntactic errors in written English was carried out by Ayoo in 2004 among class eight pupils of Ngala and Murang'a schools for the deaf. The study findings revealed that written English of learners with H.I. has various morphosyntactic errors especially concerning the verb. Similarly partially deaf learners have better English than the profoundly deaf. Following her study findings, Ayoo recommended Total Communication (T.C.) to be adopted in teaching and emphasis should be laid on Sign Exact English (S.E.E.).

Development of signs for scientific terms is a study that was carried out in Reverend Muhoro secondary and Tumutumu primary schools for the deaf (Wanja,2005).The researcher developed two hundred signs for nominated terms and invented some, where none existed.

Njoki (2009) saw the need to have persons with H.I. included in utilization of Voluntary Counseling and Testing (V.C.T.) services. The study was carried out in Nairobi province. It yielded results that communication methods for H.I. need to be addressed. Persons with H.I. are left out in education campaigns and preventive efforts since information is disseminated through mass and electronic media with limited or no sign language interpreters. A number of recommendations emanated from this study: communication methods for H.I. be addressed, media to improve methods of disseminating information , the government to review policy on HIV/AIDS to include people with H.I. and the community to be empowered with skills and finances to uplift their knowledge about HIV/AIDS.

A study on resource and pedagogical constraints to teaching social studies was done at Kerugoyaschool for the deaf in Kirinyaga district (Muthike, 2008). The target population was one hundred and eighty-two (182) teachers and pupils in the school. A descriptive case study design was employed in the study. Findings revealed a number of constraints: inadequate teaching/learning resources, more use of teacher-centred methods in teaching, communication barriers, abstract content in the syllabus and time limit. The study recommended use of learner-centred methods more for registering better academic performance.

Owiko (2009) looked into factors contributing to poor performance in Mathematics at K.C.P.E. in primary schools in Nyanza province. He found out the factors to be: deficits in skills and teaching methods, too difficult content in the curriculum and time allocated for syllabus coverage and examinations too limiting. He recommended modification of curriculum content and time allocation for teaching Mathematics.

Kihingi (2008) carried a descriptive case study on “Factors hindering teaching and learning activities for learners with H.I.” at Karen Technical Training Institute in Nairobi. The target population constituted one hundred and ninety-four (194) informants. A number of factors were found to be a hindrance: inadequacy of teaching personnel, minimal qualification of teaching staff, strained communication and difficult understanding instructions. The study recorded that learners with residual hearing hardly used hearing aids to boost their hearing. There was lack of information on audiological assessment among the staff. Following findings of this study, the researcher made a number of recommendations: teaching personnel should be trained in SNE. SEE should be taught and examined at all levels of education for H.I.

including tertiary institutions and that teacher training colleges incorporate special education component in the curriculum.

## **2.7 Summary**

A literature search found that studies carried out internationally addressed acquisition of English language both by hearing children and children with hearing impairment. Those carried out nationally focused on learning of Kiswahili and English by children with normal hearing. Out of the Masters theses in Special Education undertaken at Kenyatta University, none of them addressed learning of Kiswahili by learners with H.I. No study so far had been carried out in the area of Kiswahili for learners with H.I. The gap thus identified justified the need for a study of this kind.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

The chapter presents the guiding methods and procedures used in the study. It describes the research approach, design and data collection. Variables of the study, locale, target population, sampling techniques and sample size are also discussed. Finally, pilot study, data collection, data analysis procedures, including ANOVA test, ethical and logistical considerations are explained.

#### **3.2 Research Design**

The study adopted a qualitative approach, to explore in detail teaching and learning of Kiswahili among children with hearing impairment. Qualitative research involves an in-depth understanding of human behaviour (Sherman & Webb, 1988). In this case, learning of Kiswahili by learners with H.I. was the behaviour to be understood. The study was exploratory mainly because not much had been written about it and therefore insights into challenges of teaching Kiswahili to learners with H.I. were sought. Various research instruments were used to collect in-depth data to allow for a better understanding of the problem and meaningful interpretation. Many qualitative researchers also use visuals, figures or tables as adjuncts to the discussions (Creswell, 2003). The rationale behind use of qualitative research was to develop a level of detail about the institution and be highly involved with the informants. This was appropriate also due to use of multiple methods that were highly interactive thus enhancing data collection which was fundamentally interpretive. Investigation of performance of Kiswahili both at school and in the national context employed the quantitative approach to compare performance in various subjects. The research used a case study

design; a popular form of qualitative analysis that involves a careful and complete observation of a special unit (Kothari, 2004). Kombo and Tromp (2006) contend that a case study seeks to describe a unit in detail, context and holistically. Yin (2003) defines a case study as an empirical inquiry that investigates a phenomenon within its real life context. The design was appropriate for the study in that it facilitated an in-depth investigation of teaching and learning Kiswahili in Mumias School for the Deaf.

### **3.2.1 Variables**

Independent variables are those qualities that cause influence whereas dependent variables are outcome qualities (Creswell, 2003). In this study, educational resources, teaching/learning methods and conditions requisite for excellence were independent variables. These were the vehicles through which effectiveness in learning of and academic performance in Kiswahili was gauged. Learning of Kiswahili was the dependent variable.

### **3.3 Locale of the Study**

The study was carried out in Mumias School for learners with H. I. in Kakamega County. This is one of the oldest schools for learners with H.I., established in 1961. The school is representative of a homogeneous target population existing as an integral part of the school community. The learners have to face a number of challenges as they contend with the regular school curriculum put in place for all learners.

Mumias School for the Deaf is a public mixed boarding primary school. It is also known as St. Martin DE Porres. The school is situated in Mumias Nabongo location in Kakamega County. It was founded by Ursuline sisters from Holland, way back in 1961, with an enrolment of five pupils only. The figure remained static until in eighties when it started posting a commendable rise.

Mumias was the first school to offer education to learners with hearing impairment locally. Today, it is an international school, admitting pupils from the entire nation of Kenya as well as the neighbours such as Uganda, Burundi and Sudan among others. The school follows the 8-4-4 school curriculum marked by the national K.C.P.E. examination. At inception, Luhya language was used as a medium of instruction. The rationale was to integrate children back to the hearing community. Later, with the extension of the catchment area to include pupils from other parts of the country, this tradition was relinquished. Presently, Kenyan Sign Language is used to accommodate learners in the school.

Mumias Primary School for the H.I. is divided into four sections: the pre-school admits children aged between four and six years. The primary section comprises classes one to eight. The third section is that of children with multiple handicaps, mainly hearing impairment and mental challenges. The vocational unit section admits big girls that have academic challenges. They are introduced to skills like dress making, knitting, handicraft, gardening and cookery among others as they await placement at St Angela vocational institute, just adjacent. Appendix 9 shows a sketch map of the school.

### **3.3. 1 School Establishment**

Mumias School has a teaching staff of thirty-six members: twenty-five females and eleven males. Thirty-five among them are employees of the Teachers' Service Commission and one male is a Peace Corp from the USA. Majority of the teachers have taught in the school for many years.

### **3.4 Target Population**

Kothari (2004) posits that a population refers to the total of items about which information is desired. Mugenda and Mugenda (1999) refer to the target population as a population to which a researcher wants to generalize the results of the study. The target population in this study comprised a total of four hundred and two pupils enrolled in Mumias primary school for children with H.I. Out of these, two hundred and twenty one were boys and one hundred and eighty one were girls. The results would be generalized to the learners in thirty-four primary schools for learners with H.I. across Kenya due to the homogeneity of their characteristics.

### **3.5 Sampling Techniques and Sample Size**

#### **3.5.1 Sampling Techniques**

Sampling is a process of selecting a number of individuals for a study in such a way that the individuals selected represent a large group. Purposive sampling on the other hand is a procedure where subjects are chosen according to a certain specified criterion (Orodho, 2004). Mugenda and Mugenda (1999) confer that cases of subjects are handpicked because they possess the required characteristics. In this study, purposive sampling was used to select the school, the head teacher, Kiswahili teachers and pupils for focus interview groups and observation classes. This was necessitated

by the fact that all learners in the school had H.I. Classes, four to seven were purposively selected on the basic assumption that learning of Kiswahili had taken off from class four and communication/ teaching methods already established. Class eight would be precluded from the study. As a summative evaluation class, strategies put in place to prepare them for their KCPE candidature needed not be interfered with. Focus interview groups were purposively selected by gender and academic performance in Kiswahili.

### **3.5.2 Sample Size**

Sample size for this study comprised one head teacher, five Kiswahili teachers and thirty- two learners with H.I.in Mumias primary school for the deaf. There were four focus groups for discussion selected as follows: by gender- eight boys, eight girls and by academic performance- eight high performers and eight low performers in Kiswahili, bringing the total sample size to thirty-eight (six teachers and thirty-two pupils).

### **3.6 Instrumentation**

Data collection adopted three methods: observation, interview guide and document analysis. Triangulation of six instruments was employed to increase chances of depth and accuracy of data. The six instruments were non-participant observation guide, three interview guides, and document analysis guide and data sheet.

#### **3.6.1 Non-Participant Observation Guide**

The guide was used to collect data on teaching/learning methods, conditions requisite for excellence in Kiswahili and educational resources used. Learning environment,

learning experiences engaged in by learners and evaluation modes alluded to are conditions that were observed. Attitude is a condition that was observed through casual discourse among learners and teachers. Qualitative data was collected through pencil and pad. This procedure was guided by the first and third tenets of the behaviorist theory of language learning: stimulus and rewards. The teaching / learning methods, educational resources, learning experiences and teacher's attitude should appeal to the learner to facilitate learning of Kiswahili. Learner performance ought to be duly evaluated for purposes of feedback on acquisition of language skills. Observation is one of the favored data collection tools in qualitative research. The tool was appropriate in gathering data on the variables of the study. This was justified by the fact that, in seeking to explore the natural scene the researcher aimed to be as unobtrusive as possible (Sherman & Webb, 1988). Results of this analysis addressed objectives two, three and four of the study; conditions requisite for excellence, teaching/learning methods and educational resources respectively. The observation guide is presented in Appendix 1.

### **3.6.2 Semi-Structured Interview Guides**

There were three sets of semi-structured interview guides for: head teachers, Kiswahili teachers and focus group interview for Kiswahili learners. Each set contained a list of items to be covered at each level. The items included both open-ended and closed-ended questions to provide detailed understanding of the problem and allow the researcher to collect qualitative data. The researcher administered the interview to the stakeholders in separate fora.

The guiding principle in interview with the head teacher was the first and third tenets of the behaviorist theory: stimulus and rewards. The head teacher was part of the environment that provides stimuli to the learner in form of educational resources and rewards or incentives for durability and strength of the learned behaviour. He provided data on use of educational resources for teaching/learning Kiswahili and rewards for reinforcement of learning outcomes. The head teacher's own opinion, contributions and recommendations on teaching/learning Kiswahili were as well gathered. This was the best tool for the head teacher who was not a teacher of Kiswahili. Results of this analysis addressed objectives two and four on conditions requisite for excellence and educational resources used in teaching Kiswahili. The interview guide for the head teacher is presented in Appendix 2.

Interview with the Kiswahili teacher was guided by the first and third tenets of the behaviorist theory: rewards. Data collected from the teacher would show if learner performance in Kiswahili is dictated by reinforcement offered to them. This strategy was appropriate as a supplement to the observation tool. It was used to elicit further data on teacher's attitude, contributions and recommendations for teaching/learning Kiswahili among children with H.I. The teacher's interview guide is presented in Appendix 3.

Focus interview groups with pupils was guided by the three tenets of the behaviourist theory: stimulus, response and rewards. Data collected would primarily reveal whether their performance in Kiswahili (response) depends on the environment's (teacher's) eliciting stimuli appropriately and reinforcing (rewards) their responses by use of rewards or incentives. This tool is appropriate for provision of qualitative data

about the children's in-depth attitudes towards Kiswahili as a subject. Results of the analysis would address all the four objectives of the study. Interview guide for pupils is presented in Appendix 4.

### **3.6.3 Document Analysis Guide**

The researcher studied official documents like the scheme of work and lesson plans to gauge syllabus coverage. The time tables were studied for verification of time allocated for the Kiswahili lessons. Attendance registers, progress records and exercise books for the last two terms were analyzed for individual learner performance. Studying of secondary data from the documents assisted in gauging the possible constraints in teaching and learning Kiswahili by learners with H.I. Data collected assisted in realization of objective one on academic performance. Document Analysis guide is represented in Appendix 5.

### **3.6.4 Data Sheet**

The researcher studied examination analysis to collect secondary data which was used to compare performance at school in Kiswahili versus other subjects. This data assisted to improve understanding the problem under investigation better. It also provided a basis for comparison of learner participation during lesson observation and what had gone down in record as each learner's performance. The data formed a basis for justification of the gap identified. It assisted in realization of objective one on academic performance. Data sheet is represented in Appendix 6.

### **3.7 Pilot Study**

A pilot study was carried out in Iten School for Deaf in Marakwet- Keiyo county, Rift Valley province. All six instruments were pre-tested. The objective of the pilot study was to measure the validity and reliability of the research instruments and seek suggestions to improve them. The school was chosen because it was an identical representation of the subjects that would be studied. It had an enrolment of sixty learners, a staff strength of seven teachers and one head teacher. The head teacher, three teachers and thirty students from classes four to seven were included in the pilot study. The school was precluded from the actual study.

#### **3.7.1 Validity**

Kumar (1999) defines validity in terms of measurement procedures to be the ability of an instrument to measure what it is designed to measure. A researcher may want to establish (whereas a reader to question) the quality of the result of an instrument. Creswell (2003) posits that thesis writers should check the accuracy and credibility of their findings. Therefore research is valid when conclusions are true. Validity for this study was established through triangulation of methods, time and informants. Triangulation of methods was done through use of observation and interviews to explore the issue at hand. This increased the chances of depth and accuracy. There was logic evidence among the research instruments used. Each question and item on the interview guide had a logical link with an objective to justify its face validity. Items and questions covered the full range of the issue of attitude being measured to cater for content validity. Coverage of the issue of attitude was balanced by ensuring that each aspect had similar and adequate representation in the questions or items. Validity for observation guide, document analysis and data sheets was determined by

comparing the outcome of concurrent tests. Triangulation of time was done through discussion of lessons observed. A deeper understanding was achieved when after observing the lesson as scheduled the teacher discussed what happened and why. Whether the objectives of the lessons were realized or whether they needed modification for future consideration was also discussed. Triangulation of informants was necessitated for this study through interviews with different stakeholders in the schools; the head teacher, as the main formulator of the policy, the teacher as the main implementer of the curriculum and the learner as the ultimate recipient. Their responses were used to determine accuracy of findings.

### **3.7.2 Reliability**

Reliability is the consistency of the measurement tool in giving the same results when used with the same group of subjects at different times (Orodho, 2004). The non-participant observation guide and the interview guides, the document analysis and data sheets were administered to subjects identical to the study sample, during the pilot study. A week later, the procedure was repeated with the same subjects. Responses for both administrations were scored manually. Comparisons between the responses for each tool and themes in triangulation of methods were used to determine reliability.

### **3.8 Data Collection Procedures**

The investigator obtained a letter of authority from the university and a research permit from the Ministry of Education before proceeding to the field for the data collection process. Thereafter, preliminary visits were paid to the District Education Officer (DEO) Mumias District to inform him/her about the purported study in the

respective school. Reconnaissance visits to Mumias School for H.I were made for familiarization before commencement of the data collection procedure. The head teacher and Kiswahili teachers were informed about the study. They were assured of confidentiality of the data collected to be used for the purposes of this study only. Official documents and data sheets were collected for study and collection of data.

Data collection in the field ensued two weeks later beginning with non-participant observation. The Kiswahili teachers were observed teaching their respective classes and qualitative data recorded following the observation guide prepared beforehand. Each class was observed twice in two alternate weeks. Brief discussions of the lessons were held with the teachers concerned and prepared for the interviews to ensue.

Face-to-face semi-structured interviews were held with the Kiswahili teachers after the lesson observations so as to synchronize the findings. Focus group interviews with pupils followed where the researcher and assistant signed the items from the interview guide to the four groups, one at a time. The learners signed their responses one by one. The researcher took notes using pencil and pad.

Interview with the head teacher was held at his own discretion in his office on the same day. Each informant was interviewed twice within two alternate weeks. Finally, data collected using all the instruments was put together for analysis.

### **3.9 Data Analysis**

Raw data collected was categorized, ordered, coded and then tabulated. This was done according to themes from which objectives were generated as follows: analyzing

academic performance, teaching/learning methods, conditions requisite for excellence and educational resources. Qualitative data collected using observation guides was categorized under the last three themes indicated above.

Data gathered from the head teacher's interview guide was categorized under conditions requisite for excellence in Kiswahili and educational resources. Specific sub-themes under this theme were the learning environment, learning experiences, evaluation modes, attitude and reinforcement.

Data gathered from teacher's interviews was categorized under: teaching and learning methods, educational resources and conditions requisite for excellence whereas data from the focus groups discussion was categorized under all the four themes. From the document analysis, data gathered was categorized under analyzing academic performance of Kiswahili by learners with H.I. Quantitative data gathered from data sheets was categorized under the first objective: academic performance of Kiswahili by learners with H.I. It was later analyzed using a measure of central tendency- the mean score.

After categorization of the raw data, analysis was done in descriptive nature. Data interpretation was done in light of objectives of the study and on the basis of the three tenets of the guiding theory of the study: Stimulus-Response-Reward. Findings of the study were presented descriptively through narrative passages as well as in frequency distribution tables, pie charts and histograms.

In this study, ANOVA was run to statistically assess whether the observation that Kiswahili was poorly performed compared to other subjects in K.C.P.E. was indeed a pattern or just a phenomenon that occurred by chance. Since ANOVA showed that the means between the K.C.P.E. subjects were indeed statistically significant with Kiswahili having a lower mean than the other subjects, it was concluded that Kiswahili more than any other subject was indeed poorly performed amongst learners who are hearing impaired. ANOVA test is presented in Appendix 8.

### **3.10 Logistical and Ethical Considerations**

The researcher considered three phases of logistics for conducting research: pre-field logistics, field logistics and post-field logistics. Pre- field logistics are specific considerations that a researcher must carry out before embarking on data collection exercise (Orodho, 2005). These included obtaining a research permit, setting the time frame, packaging of research instruments, training and hiring a research assistant and drawing a budget. The field work logistics are those actions that a researcher must address during the actual field exercise. The success of this phase largely depended on the pre- tested and revised instruments as well as cooperative informants. Post-field logistics are activities that a researcher must undertake after the field work. These included data categorizing and coding it in readiness for analysis. Ethical considerations involved convincing respondents to be willing to participate in the study. The researcher assured the subjects of confidentiality and anonymity after data collection. They were assured that the information they gave would be used for no other purpose other than for this research.

## CHAPTER FOUR

### DATA ANALYSIS, RESULTS AND DISCUSSION

#### 4.1 Introduction

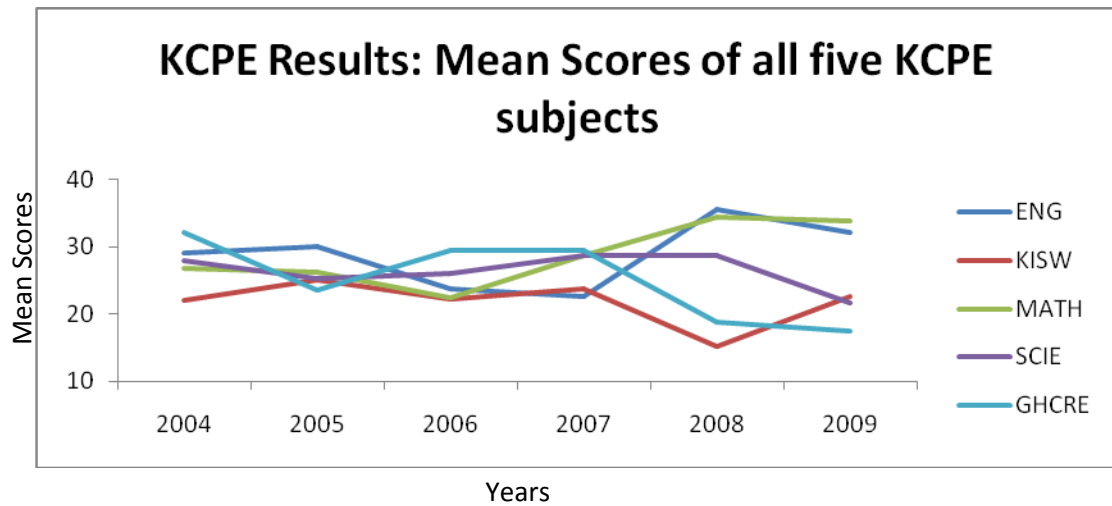
This chapter presents findings and analysis of data for the following subsections derived from the study objectives: academic performance, teaching and learning methods, conditions requisite for learning Kiswahili and educational resources. The six instruments of data collection were: document analysis, data sheets, non-participant observation guide and the three interview guides.

#### 4.2 Academic Performance

The first objective was to analyze academic performance of learners with H.I. in Kiswahili. Evaluation of the learners' performance was based on their performance in the Kenya Certificated of Primary Education (KCPE) examination from 2004 to 2009. This data is presented in Table 1.

**Table 1: Mean scores of all five KCPE subjects from 2004-2009**

	<b>ENGLISH (%)</b>	<b>KISWAHILI (%)</b>	<b>MATHS (%)</b>	<b>SCIENCE (%)</b>	<b>GHCPE (%)</b>
<b>2004</b>	29.15	21.96	26.70	27.89	32.19
<b>2005</b>	30.03	25.03	26.20	25.20	23.60
<b>2006</b>	23.81	22.23	22.38	26.00	29.42
<b>2007</b>	22.53	23.68	28.63	28.63	29.37
<b>2008</b>	35.50	15.17	34.40	28.77	18.77
<b>2009</b>	32.05	22.60	33.75	21.70	17.55

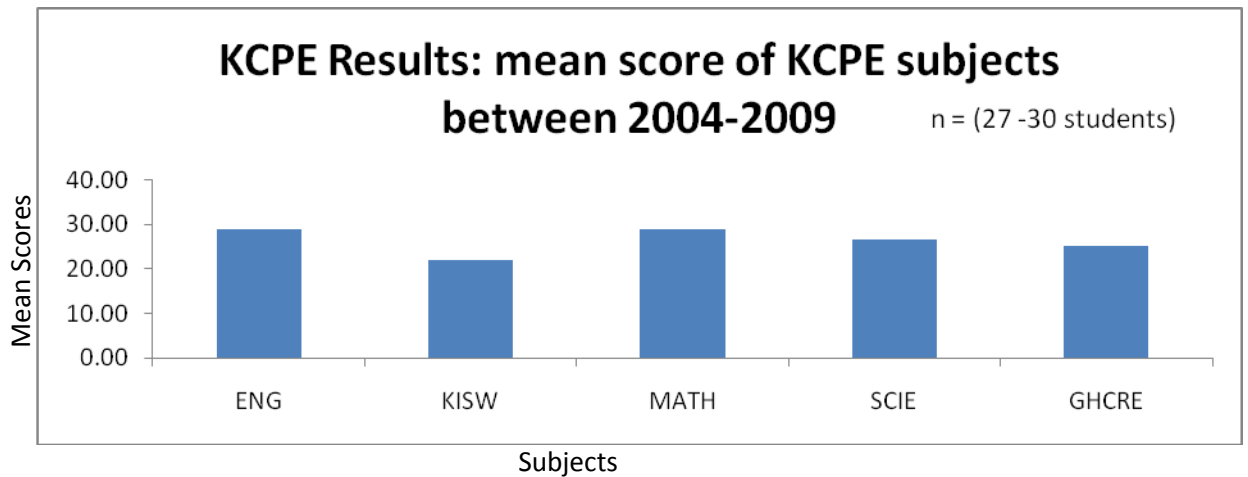


**Figure 3: An analysis of KCPE results shows that, trend-wise, Kiswahili is the worst performed subject in KCPE**

As seen in the graph in Figure 3, all subjects are poorly performed in KCPE but Kiswahili appears to be the worst performed subject. To clearly exhibit Kiswahili performance in relation to other KCPE subjects, the researcher analyzed the overall mean score of each subject from 2004 to 2009. This analysis is presented in Table 2.

**Table 2: Mean scores of all five KCPE subjects from 2004-2009**

	<b>ENGLISH (%)</b>	<b>KISWAHILI (%)</b>	<b>MATHS (%)</b>	<b>SCIENCE (%)</b>	<b>GHCRE (%)</b>
<b>Mean score (2004-2009)</b>	28.84	21.78	28.68	26.36	25.15



**Figure 4: An analysis of KCPE results shows that Kiswahili is the worst performed subject in KCPE**

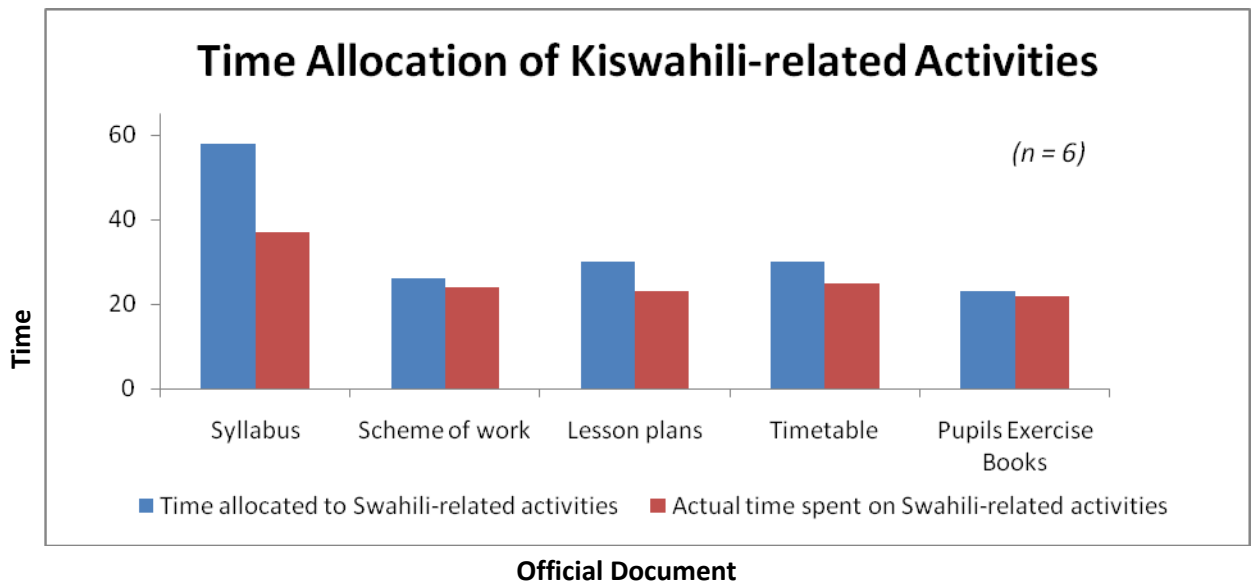
An analysis of the means across the five KCPE subjects shows that Kiswahili had the lowest mean over the five years, hence the worst performed subject in the national exams. However the difference in means is relatively small prompting the researcher to perform an “Analysis of Variance” (ANOVA) test to determine whether the difference in means across the subjects is statistically significant in order to show that Kiswahili is an underperformed subject in KCPE. The test performed was an ANOVA single factor analysis and it was established that the difference between the means is indeed statistically significant ( $p = 0.001349$ ; see Appendix 10) hence showing that Kiswahili is the worst performed subject in KCPE.

#### **4.2.1 Allocation of Time to Kiswahili-Related Activities**

In order to understand why H.I learners performed poorly in Kiswahili, the researcher evaluated the amount of time allocated to the learning and teaching of Kiswahili. This was done by reviewing teachers’ professional documents. The results are highlighted in Table 3.

**Table 3: A record of time allocated to Kiswahili-related activities as denoted by teachers interviewed at Mumias School for the Deaf**

Syllabus		Schemes of work		Lesson Plan		Timetable		Pupils Exercise books	
Topics on record	Topics taught	Topics planned	Topics already taught	Lessons allocated/ week	Lessons prepared	No. of lessons/ week	Lessons taught	Assignments done	Assignments checked
58	37	26	24	30	23	30	25	23	22
	64%		92%		77%		83%		96%



**Figure 5: An analysis of the actual time spent on Kiswahili-related activities shows that teachers do not cover the whole syllabus.**

As can be seen in Table 3 and Figure 5, there is a deficit in syllabus coverage. The lessons taught by the end of the week, lessons prepared for, and actual topics covered by the end of the academic year are fewer than the lessons and topics supposed to be covered. This finding indicates that learners are not fully prepared by the time they sit for their examinations, a factor that contributes to their poor performance.

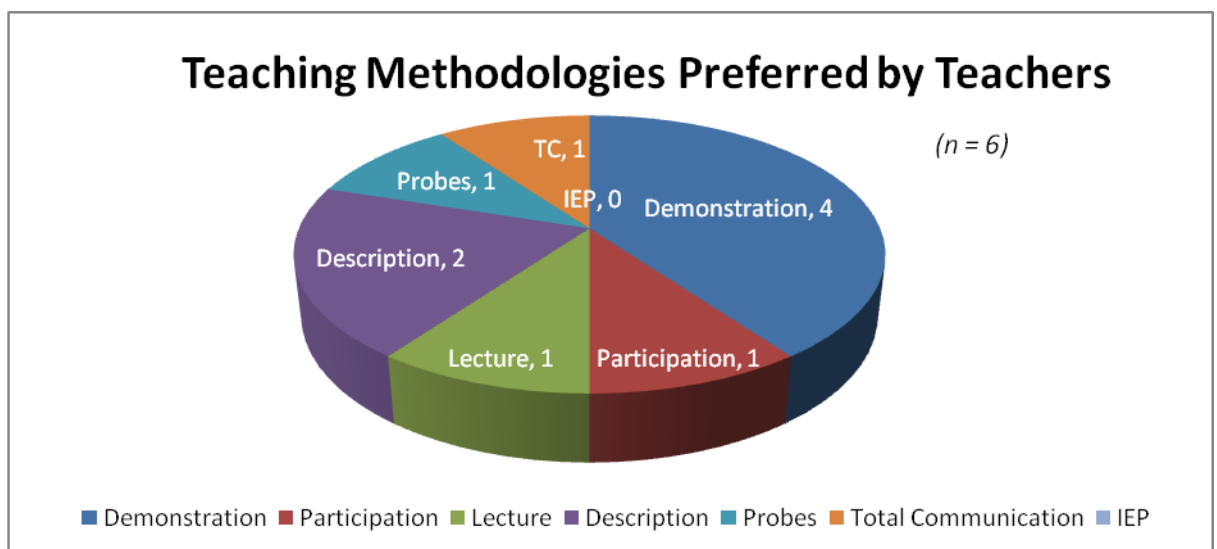
### 4.3 Teaching and Learning Methodologies

Another aspect the researcher considered to understand the H.I. learners' poor performance was the teaching and learning methodologies used in the class room.

Total Communication and IEP have been established as the most comprehensive ways to teach learners with H.I. With this regard, this study sought to understand whether Total Communication and/or IEP were employed as teaching tools in the school, and whether the learning methods preferred by students were similar to the teaching methods used by the teachers.

**Table 4: Preferred teaching methods**

Methodology	Demonstration	Participation	Lecture	Description	Probes	TC	IEP
Frequency	4	1	1	2	1	1	0



**Figure 6: An analysis of teaching methodologies preferred by teachers shows that teachers often prefer teaching by demonstration; only one teacher employs TC**

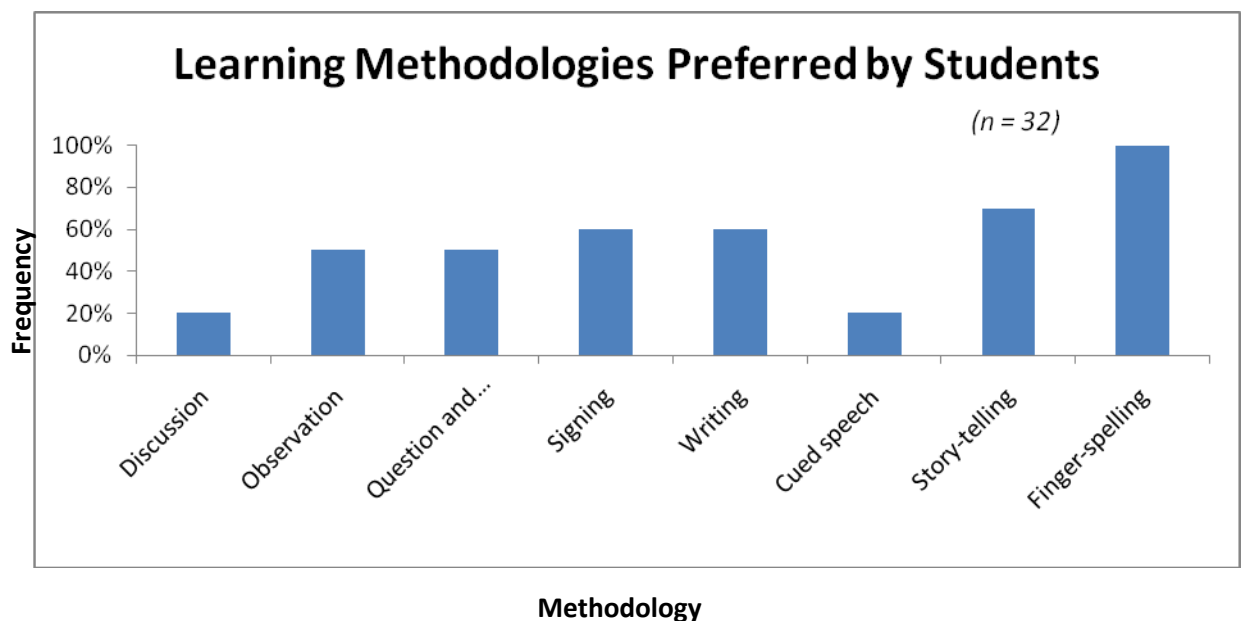
As shown in figure 4, none of the teachers used IEP, in fact only one teacher (out of six) used TC as a preferred teaching methodology. Teachers complained of lack of time and educational materials that would allow them to create an IEP for each learner with H.I. as mandated by PL 94-142. This is a complain that extends to most primary and secondary school teachers in developing countries as noted (Alade, 2003). By not using TC or IEP, teachers failed to take into account the handicap that learners faced,

hence limiting their language development, an important aspect in the learning and comprehension of Kiswahili. TC allows for learners and teachers to adjust their communication method based on the need, a capability that would allow for teaching to be tailored to each pupil's needs. However, in this case study, it was seen that the teaching methods were not comprehensive thus limiting the pupils' learning of Kiswahili.

The researcher also analyzed the learning methodologies preferred by the pupils. This data is presented in Table 5 and Figure 7.

**Table 5: Preferred learning methods**

Methodology	Discussion	Observation	Question & Answer	Signing	Writing	Cued Speech	Story-telling	Finger spelling
Frequency	6	16	16	19	19	6	22	32



**Figure 7: An analysis of learning methodologies shows that pupils prefer learning by finger spelling, story-telling, signing and writing**

The most preferred learning methods are finger spelling, story-telling, signing and writing. Teachers primarily preferred teaching by demonstration, contrarily, pupils did not rank learning by observation as highly thus showing a disconnect in the learning methods preferred by the students and the teaching methods preferred by teachers. In order to optimize pupils' learning, it is important that teaching and learning methods align so as to cater to pupils' needs and abilities.

#### 4.4 Conditions Requisite for Learning

Several factors affect an individual's learning process. The classroom environment can have a big effect on the amount of learning that occurs, hence this study evaluated the environmental conditions at the school to understand whether they enhanced or inhibited learning, particularly amongst learners with H.I. Kenya Institute of Education(K.I.E.) has established the following to be conditions that need to be optimized for effective learning amongst all learners: learning environment, learning experiences, evaluation, reinforcement, and teachers and pupil's attitudes. Table 6 demonstrates the learning environment at the school as per pupils' responses.

**Table 6: Pupils' responses on “learning environment” and “learning experiences” as conditions requisite for learning**

<b>1. Learning Environment</b>	<b>Preferred conditions</b>	<b>Conditions present at school</b>
<i>Seating Arrangement</i>	Horse-shoe arrangement	Seating in rows
<i>Appropriate lighting</i>	Sufficient lighting	Sufficient lighting
<b>2. Learning Experiences</b>	Total Communication IEP	Finger spelling (32/32)
		Signing (16/32)
		Writing (19/32)
		Story-telling (22/32)
		Answering questions (16/32)
		Observing (16/32)
		Discussing (6/32)

As seen in the table, the conditions at the school fall short of those recommended by the KIE in the following aspects:

#### **4.4.1 Learning Environment**

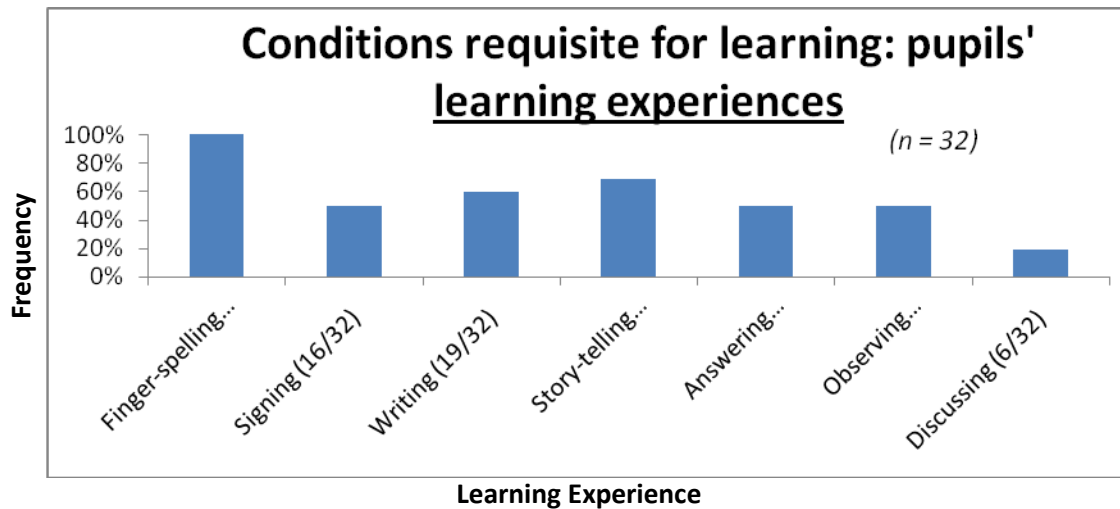
The horse-shoe seating arrangement has been recommended as the best way to organize a classroom because:

- i) It fosters acquaintance of pupils with their peers
- ii) Gives a new perspective on learning activities by encouraging pupil's to sit in different positions
- iii) It encourages participation by allowing eye contact between the teacher and all learners
- iv) Allows each pupil to consistently have access and proximity to the teacher, and allows the teacher to move closer to each learner

However, at this school pupils sit in rows, an arrangement that does not allow for pupils or teachers to interact with everyone in the classroom. Particularly, the pupils are not able to follow each other's responses and contributions thus not optimising their learning experience.

#### **4.4.2 Learning Experiences**

The pupils reported the learning experiences they have in the classroom and it was established that the learning experiences at the school do not involve all aspects of TC (Figure 8).



**Figure 8: An analysis of conditions requisite for learning shows that pupils prefer learning by finger spelling, writing, and story-telling**

Learning experiences should be both receptive and expressive. On the contrary, the researcher found that the pupils at the school were limited in their expressive capabilities. This stems mainly from two factors:

- i) There was a shortage in materials such as toys, playthings, poems and sign stories that learners could use to acquire the necessary expressive skills.
- ii) Learners were not exposed to Kiswahili prior to their enrolment into formal schools, an aspect that greatly slowed down their learning compared to their counterparts with no hearing impairments.

The researcher also analyzed teachers' and pupils' responses on reinforcement, attitude, and evaluation as factors that affect teaching and learning of Kiswahili. This data is presented in Table 7 (pupils' responses) and Table 8 (teachers' responses')

**Table 7: Pupils' responses on other conditions requisite for learning**

	<b>Preferred conditions</b>	<b>Conditions present at school</b>
<b>1. reinforcement</b>	Verbal and non-verbal, continuous reinforcement	Verbal i.e. compliments (22/32)
		Non-verbal i.e. tokens, hand claps, body language, facial expressions (10/32)
<b>2. attitude</b>	Positive attitude	Positive (10/32)

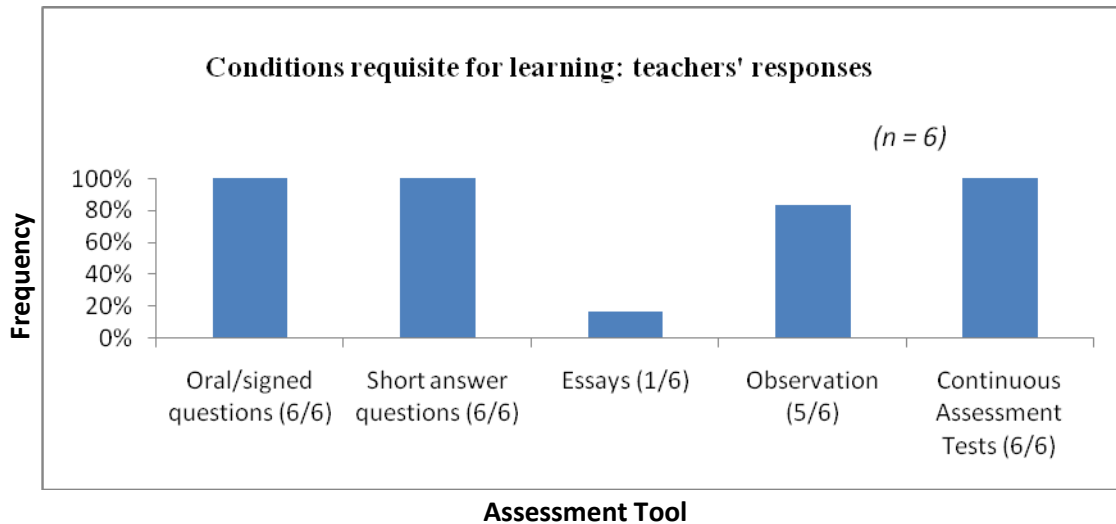
**Table 8: Teachers' responses on conditions requisite for learning**

	<b>Preferred conditions</b>	<b>Conditions present at school</b>
<b>1.Evaluation</b>	Summative and formative evaluation	Oral/signed questions (6/6)
		Short answer questions (6/6)
		Essays (1/6)
		Observation (5/6)
		Continuous Assessment Tests (6/6)
<b>2.Reinforcement</b>	Verbal and non-verbal, continuous reinforcement	Verbal i.e. compliments (6/6)
		Non-verbal i.e. tokens, hand claps, body language, facial expressions (6/6)
<b>3. attitude</b>	Positive attitude/empathy	Empathy/positive (4/6)
		Sympathy/negative (2/6)

#### 4.4.3 Evaluation

The researcher noted that although teachers performed both formative and summative evaluation as was expected of them (see Figure 9), they could not conduct summative evaluation in a manner that allowed for a comprehensive evaluation of the pupils' performance in Kiswahili. This was because the KIE dictated the conditions in which to organize the summative evaluation but these conditions were not tailored to learners with HI. Firstly, learners with HI were allocated thirty extra minutes during examinations but the teachers argued that this time was not sufficient. Secondly, although the examination invigilators were trained in special education and KSL, the

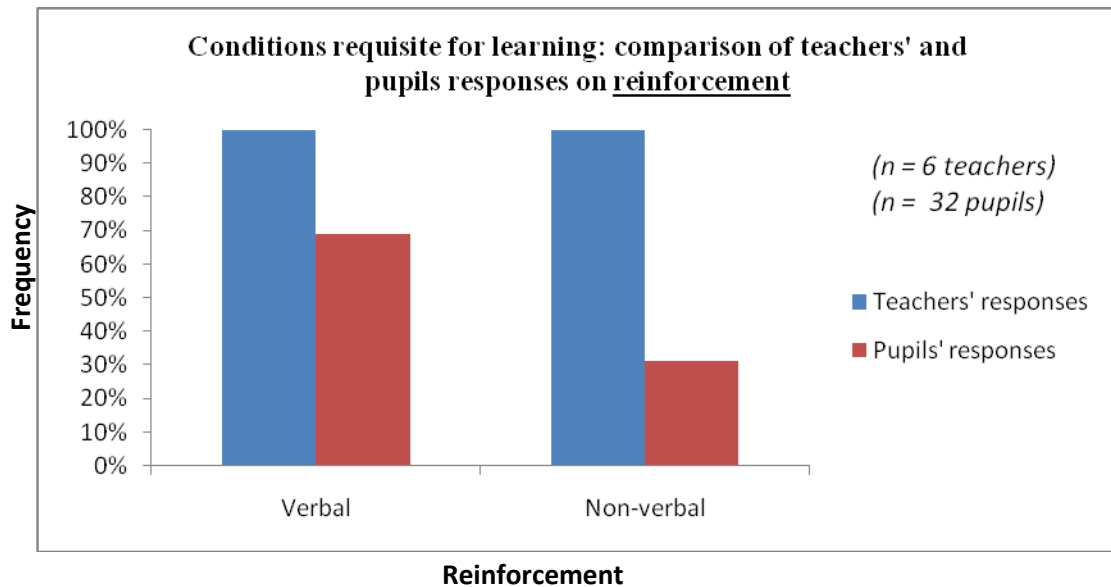
supervisors were not necessarily trained in the field. This discrepancy inhibited proper administration and evaluation of examinations taken by learners with HI since the supervisors were not aware of the nuances that govern KSL and communication with HI learners.



**Figure 9: Teachers' responses on conditions requisite for learning show that teachers evaluate pupils formatively (in-class) and summatively (end of term and/or year exams)**

#### 4.4.4 Reinforcement

Reinforcement at the school was done during both formative and summative evaluations. Formative reinforcement occurred in the classroom during the lessons while summative reinforcement occurred at the end of the term and/or year. The researcher noted that very few pupils reported that they ever received positive reinforcement (in the form of awards) for their performance in Kiswahili (see Figure 10). The pupils who received reinforcement were interested in pursuing Kiswahili further as learners and eventually as teachers. As a result of this observation, the researcher concluded that positive reinforcement is key in getting learners interested in Kiswahili and consequently improving their performance in the language.



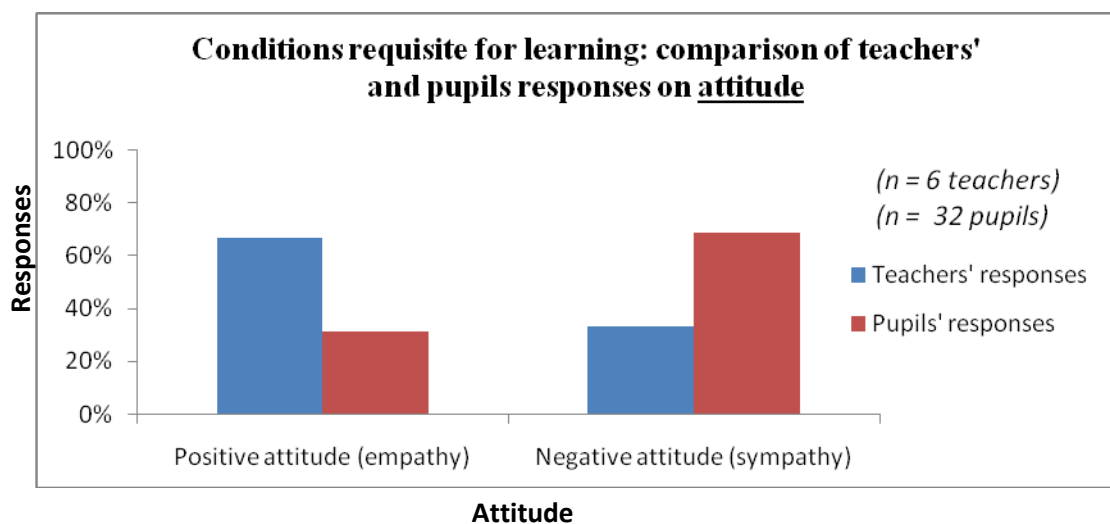
**Figure 10: A comparison of teachers' and pupils' responses on reinforcement as a condition that is important to enhance learning of Kiswahili**

#### 4.4.5 Attitude

Majority of the pupils had a negative attitude towards Kiswahili (Figure 11). They believed that it was a difficult language and were more interested in learning Kenyan Sign Language (KSL) because it was their natural language and easier to learn and communicate in it. The few students keen on learning Kiswahili were mainly interested because a proficiency in the language would allow them to get by in their communities. Particularly, an understanding of the language would allow them to read public warnings and signs, communicate with people in market places, and interact with people without HI who do not understand KSL. As such, for these students being proficient in Kiswahili would allow them to become more independent.

Most of the teachers had a positive attitude and empathized with the learners (Figure 11). They encouraged the pupils to learn Kiswahili as the language would become imperative for them to integrate into the community. In addition, two of the teaching staff that had HI were especially interested in having the learners pursue Kiswahili

and eventually becoming teachers of Kiswahili themselves as they would become role models to future learners with HI. A few of the teachers mainly sympathized with students and had a negative attitude towards teaching Kiswahili. They argued that the pupils would be over-burdened if the curriculum demanded that they learn English, Kiswahili and KSL. As a result, these teachers were not keen on having their pupils master the Kiswahili language, an aspect that in turn negatively affected pupils' attitudes towards learning Kiswahili.



**Figure 11: Teachers and pupils attitude towards teaching and learning of Kiswahili**

#### 4.5 Educational Resources

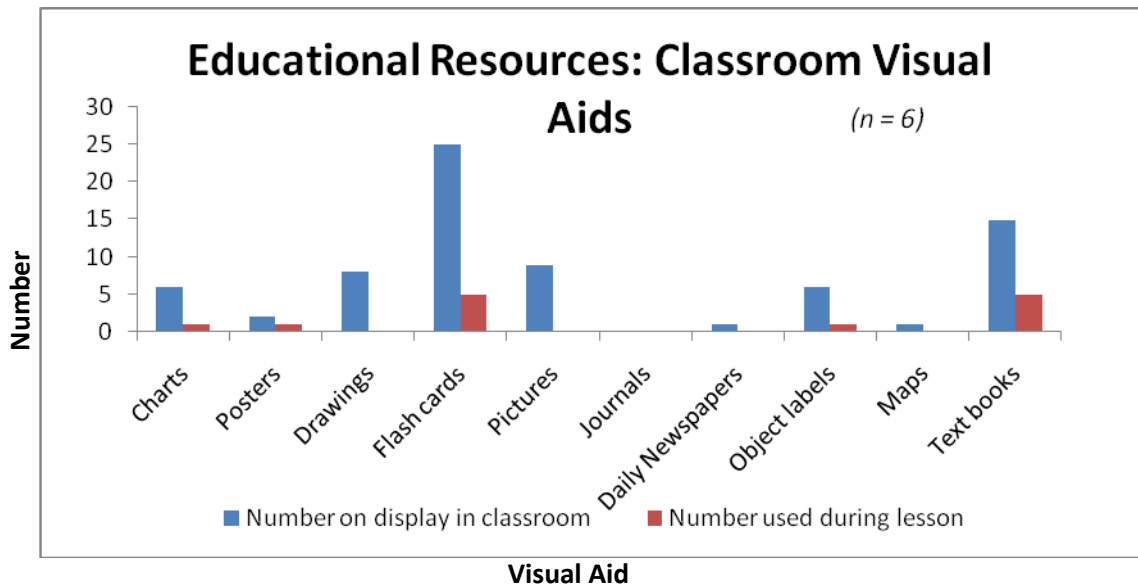
The main resources vital in the enhancement of learning in learners with HI are visual aids, assistive technology, and human resources.

##### 4.5.1 Visual Aids

For learners with HI, visual aids are the main means of receiving information as they compensate for hearing loss. However, as presented in Table 9 and Figure 12, there are very few visual aids in the classroom and they are hardly used to enhance learning.

**Table 9: Educational resources available in the classroom**

Classroom Visual Aids	Charts & Maps	Posters	Drawings	Flash cards	Pictures	Journals and Textbooks	Daily Newspapers	Object labels
# on Display	7	2	8	25	9	15	1	5
# used in lesson	1	1	0	5	0	5	0	1
% used in lesson	14%	50%	0%	20%	0%	33%	0%	33%

**Figure 12: An analysis of the educational resources available in the classroom shows that the visual aids available are greatly underused**

Visual aids are deemed important because of the following reasons:

- i) They function as educational tools for effective learning
- ii) They convey what a piece of text or classroom text cannot fully convey
- iii) They enhance learner's retention of what is learnt in the classroom
- iv) They help pupils to use their visual capacity and stimulate thinking hence enhancing their expressive communication skills
- v) They help break the monotonous cycle in classroom settings thus getting pupils more interested in learning Kiswahili.

However, the researcher established that in fact, the visual aids available in the classrooms at this school are used less than 50% of the time. The researcher concluded that the learning environment is consequently not optimized, hence the poor performance in Kiswahili.

#### 4.5.2 Assistive Technology

For pupils with HI, assistive technologies such as hearing aids and digital recorders make activities in the classroom possible. However, in this school there were very few of these technologies (see Tables 10 and 11) and even when available, pupils are hesitant to use them because they complain of irritation and discomfort. Consequently, learning activities would be effective if these technologies were available and put into use.

**Table 10: Resources for the whole school: assistive technology and other resources**

School Resources	Number available	Number in working condition
Cassette Players	2	2
Computers	None	None
Television Sets	None	None

**Table 11: Other classroom resources**

Sounds Amplifications	Response
<i>Group hearing aids</i>	None
<i>Individual hearing aids</i>	5
<i>Digital hearing aids</i>	None
<i>Cochlear implants</i>	None
Reference materials	Not adequate
Sound amplification	Adequate
Supplementary reading materials	Not adequate

#### 4.5.3 Human Resources

One of the important measures of quality in teaching is the amount of one-on-one attention that is provided to each learner. This is determined by the teacher: learner ratio. A small teacher: learner ratio ensures that teaching is individualised to suit each

learner's needs. The KIE recommends a teacher: learner ratio of 1:12 as the maximum ratio to allow effective teaching of HI learners. This study established the ratio of KSL-competent teachers: learner ratio at 1:20, meaning that the teachers were overloaded and could not provide the one-on-one attention that was needed in order to ensure that each pupil was learning as they best could (see Table 12). In addition, teachers adopted a teaching style that was applicable to the learning styles of majority of the learners hence any learners with a different learning style could not learn optimally thus slowing the learning process for them.

**Table 12: Resources for the whole school: resource persons**

School Resource Persons	Number available	Total number of pupils in school
Teachers competent in KSL	20	402
Group Actors	5	402
Teachers competent in speech training	20	402
KSL –competent teachers: pupil ratio	1:20	

Lastly, there were only five group actors available to the whole school. As such, the group actors were also overwhelmed while directing group activities such as drama and coaching for large groups. It was clear that the number of resource persons available to the school was not enough to individualize the learning experiences of the pupils at the school, a factor that contributed to the learners' poor performance in Kiswahili.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.0 Introduction**

This chapter presents summary and conclusion of the study findings, as well as the recommendations for further studies as pertains to the learning of Kiswahili among learners with hearing impairments. The purpose of the study was to explore challenges that pupils with H.I. faced in learning Kiswahili. The study examined the issue of academic performance in Continuous Assessment Tests (CATs) and Kenya Certificate of Primary Education (KCPE) as a background upon which claims that Kiswahili learners performed poorly in the subject were based. An exploration of factors such as teaching and learning methods that would contribute to the poor performance was done. The researcher also examined the conditions requisite for learning Kiswahili and educational resources available to both teachers and learners as factors that would contribute to the poor performance. Data collection was done using interviews, non-participant observation and analysis of teachers' documents.

#### **5.1 Summary**

##### **5.1.1 Academic Performance in Kiswahili**

As per the first objective of this case study, the findings imply that Kiswahili was performed poorly in KCPE as a result of which the school was ranked poorly when compared to other schools on the whole since the schools' ranking was based on the average means scores across all subjects.

### **5.1.2 Teaching/ Learning Methods**

Some of the methods used in teaching Kiswahili were demonstration, description, probes and lectures. Methods used by learners with H.I. in learning Kiswahili were, finger spelling, story-telling, cued speech, writing, signing, question and answer, observation and discussion. Total Communication and IEP were rarely used by teachers in teaching of Kiswahili.

### **5.1.3 Conditions Requisite for Learning Kiswahili**

#### **5.1.3.1 Learning Environment**

The researcher observed that learners were seated according to the traditional row arrangement in the classrooms. This facilitated eye contact only between the teacher and learners, not between learners. The horse shoe arrangement which would enhance eye contact was not in use in the school.

#### **5.1.3.2 Learning Experiences**

Learners' most preferred expressive activities were finger spelling, story-telling, writing and signing. Observation was the most preferred receptive activity. Discussion was the least popular activity and learners dreaded engaging in it during Kiswahili lessons.

#### **5.1.3.3 Evaluation**

The researcher established that the school was involved in both formative and summative evaluation. The former was carried out daily, weekly, fortnightly or monthly by individual teachers in different classes. Whole school evaluation was done at the end of each term and each year. The most frequently used evaluation tools were

short answer questions, Continuous Assessment Tests (CATS), essays and observation.

Summative evaluation was carried out annually by KNEC for class eight candidates to mark the end of their primary school course and for further placement. Unsuccessful evaluation was due to: limited time allocated to the examination, shortage of KSL-trained examination officials and lack of examination tackling skills by learners.

#### **5.1.3.4 Reinforcement**

The researcher established through the informants as well as by observation that both verbal and non-verbal reinforcement was used during Kiswahili lessons. Teachers offered compliments or corrective feedback whenever positive efforts or correct responses were elicited by learners. Tangible reinforcement such as food was also used during lessons. Learners would clap hands to those who deserved to be rewarded.

Physical messages such as facial expression, eye contact, nodding of the head in approval and body positions were used as well. It was reported that at the end of the term, tokens like text books, pens and utensils such as glasses were presented to a few learners who merited.

#### **5.1.3.5 Attitude**

Data gathered from the learner informants revealed that majority of them (three focus groups) had a negative attitude towards learning Kiswahili. They confessed that Kiswahili was a tough language which they could not understand even if they tried as

hard as they could to learn it. They cited comprehension, long answer questions and interpretation of English signs into Kiswahili as the most difficult aspects of learning the language. These learners conceded that they would rather learn KSL than Kiswahili.

Other learners, (one focus group) had a positive attitude towards learning of Kiswahili and even looked forward to pursuing it at higher levels so as to become teachers, like two of their own teachers that have H.I. or to be able to interact in the community. These learners wished that Kiswahili would still be taught as a compulsory subject for them to learn more of it.

The teacher informants responses to the condition of attitude were two-fold: they were sympathetic to the learners with H.I. particularly the prelinguals, in that the curriculum over-burdened them by offering three languages: English, Kiswahili and KSL. They argued that these learners should be exempted from learning Kiswahili because they could not succeed. On the other hand, they were empathetic to the postlinguals and argued that these few should continue learning Kiswahili for future community interactions, job placements especially in the teaching fraternity and embrace the language as a national as well as official language of the nation of Kenya. Ultimately the teachers were committed to teaching and encouraging the learners in their efforts of learning Kiswahili.

#### **5.1.4 Educational Resources**

It was observed that the school had adequate visual aids for Kiswahili such as charts, flash cards, posters, drawings, pictures, object labels and others on display.

Nonetheless, these visuals were hardly used during the lesson. Textbooks for Kiswahili were not adequate in number and as such were not used optimally. There were very few assistive technologies, at the time the study was carried out. There were only two cassette players to facilitate speech training, no group hearing aids were available and the few individual hearing aids available were not fully utilized as learners complained of the discomfort they caused.

## **5.2 Conclusion**

### **5.2.1 Academic Performance in Kiswahili**

In 2005, the MOE released a report that showed that KCPE performance in deaf schools was “dismal” and that Kiswahili was the worst performed subject in the national exams. This poor performance was attributed to:

1. Inadequate internal and external curriculum supervision and quality advice
2. Unstable curriculum and examinations offered for learner with H.I
3. Lack of adequate skills and training amongst teachers

In line with this report, this study affirmed the MOE’s claims. As analyzed and discussed in Chapter 4, Kiswahili was indeed the worst performed subject in KCPE. The researcher investigated and showed that the entire curriculum was not covered by teachers, not all the teachers in the school were KSL trained and the time allocated for examination of learners with H.I was not adequate.

### **5.2.2 Teaching and Learning Methods**

During this case study, it was noted that only some elements of Total Communication, were used in Kiswahili lessons. In fact, only one teacher incorporated TC in its

entirety to meet individual learner's need. The other teachers mainly used demonstration, description, probes, participation and lecture to teach. On the other hand, learners preferred learning by finger spelling, storytelling, signing, writing, question and answer, observation, cued speech and discussion. Since teaching and learning methods did not incorporate all elements of TC, learning for these pupils was not flexible enough to accommodate different needs that the learners might have had to allow them to learn at their full capacity.

The original expectation of T.C. was for teachers to use the communication methods most appropriate for a particular child's need at a particular stage. This type of individualized teaching was difficult to achieve at this particular school because it was dictated by the number of learners in each class. At the time of the study, the ratio of KSL-competent teacher: learner was 1:20 which far superseded the 1:12 ratio recommended by the Ministry Of Education. Consequently, teachers found it hard to adjust their teaching methods to those appropriate to the whole class and to each individual learner.

Furthermore, individualized Education Programme (IEP) – a teaching method designed to meet the unique needs of each learner - was not in use in any of the classes at the school. This implies that the learners were taught as per the demands of the curriculum without putting into consideration their learning abilities as dictated by the extent of their impairment.

### **5.2.3 Conditions Requisite for Teaching Kiswahili**

#### **5.2.3.1 Learning Environment**

The researcher observed that the learners' seating arrangement in the classroom was the traditional row arrangement as opposed to the recommended horseshoe arrangement. The horseshoe seating has been recommended as means to facilitate maintenance of eye contact between learners-learner and between teacher-learner, thus enhancing learning from both the teacher and other peers. Contrary to this, the seating arrangement at this school allowed pupils' eye contact with the teacher but not with one another. It was therefore difficult for the learners to follow each other's responses during lessons; consequently, learning amongst peers was greatly inhibited.

#### **5.2.3.2 Learning Experiences**

The researcher established that the learners' most preferred expressive activities were finger spelling, storytelling, writing and signing, while observation was the most preferred receptive activity. It was noted that discussions were least popular amongst learners due to their limited Kiswahili vocabulary. This led the research to conclude that not all elements of TC were used to enhance learning of Kiswahili and was a factor that would contribute to the poor performance.

#### **5.2.3.3 Evaluation**

Student's performance and program effectiveness are assessed through evaluation. In line with this, the researcher established that the school was involved in both formative and summative evaluation. Formative evaluation was carried out daily, weekly, fortnightly or monthly by individual teachers in different classes whereas whole school evaluation was done at the end of each term and each year. It was

established that the most frequently used evaluation tools were short answer questions, Continuous Assessment Tests, essays and observation. Summative evaluation was carried out annually by KNEC in which evaluation of learner's performance in class eight in KCPE and the curriculum effectiveness were both assessed.

However, three main shortcomings associated with evaluation of learners with H.I were the limited time allocated to the examination, a shortage of KSL-trained examination officials, and lack of skills on tackling examination questions as reported by pupils.

#### **5 .2.3.4 Reinforcement**

It was established from the informants as well as by observation that both verbal and non-verbal reinforcement was used in the Kiswahili lessons. Teachers offered compliments or tangible reinforcement such as food whenever positive efforts or correct responses were elicited by learners. Learners would clap hands to those who deserved to be rewarded. Physical messages such as facial expressions, eye contact, nodding of the head in approval and body positions were used as well. It was reported that at the end of term, tokens like text books, pens and utensils such as glasses were presented to a few learners who merited for them. Those who received reinforcement were interested in pursuing Kiswahili further as learners and eventually as teachers. As a result of this observation, the researcher concludes that positive reinforcement is key in getting learners interested in Kiswahili and consequently improving their performance. This finding concurs with the fact that various aspects of praise and issuance of corrective feedback are positively correlated with pupils' achievement and

positive attitude. It is notable that reinforcement is a great determinant of success in the learning process.

#### **5.2.3.5 Attitude**

Amongst the learner informants, majority (three focus groups) had a negative attitude towards Kiswahili. They conceded that learning Kiswahili was too hard for them no matter how much they tried to learn it. They preferred learning KSL. The groups cited comprehension, long answer questions in examinations and interpretation of English signs into Kiswahili as the most difficult aspects of learning the language. These informants wished Kiswahili scrapped off the curriculum for them to excel in other languages.

One of the focus groups had a positive attitude towards learning Kiswahili. Infact, they showed interest in pursuing Kiswahili to higher levels in order to become teachers, like two of their own teachers that have H.I. or to be able to interact in the community. This group wished that the curriculum continues to be inclusive of Kiswahili for them to learn more of it.

The teacher informants looked at learning of Kiswahili as two sides of the same coin. They were sympathetic to the learners' burden of learning three languages: English, KSL and Kiswahili at the same time, especially for the prelinguals. They argued that the prelinguals should be exempted from learning of Kiswahili. On the other hand, they were empathetic to the postlinguals and hard-of hearing learners for whom they argued that they needed to learn Kiswahili to be able to integrate into the society, or for job placements in the teaching fraternity or to embrace the national and official

language of the nation. This finding affirms the claims that teachers' attitudes towards both learning and the learner, whether positive or negative will affect the learner's performance.

The findings of the study confirmed that learning of Kiswahili needed a positive attitude. Those learners whose attitude was negative towards Kiswahili could not be convinced to learn it for whatever benefits and given an optional language to study, they would readily embrace it. Those learners whose attitude was positive were intrinsically motivated to study the language in addition to other languages.

When teachers sympathised with the learners for their burden of three languages to study, this attitude did not motivate learners to learn Kiswahili. On the other hand when they empathized with them this impacted positively on the learners and encouraged them to learn the language.

#### **5.2.4 Educational Resources**

It was observed that the school had adequate visual aids for Kiswahili such as charts, flash cards, posters, drawings, pictures, object labels and others on display. Nonetheless, these visuals were hardly used during the lessons. Text books for Kiswahili, which are among the most useful learning devices, were not adequate in number and were not used optimally. Visual aids are helpful since vision is the pupils' primary means of receiving information. Visuals provide memory links and thus learners' recall mechanism is boosted. When visual aids are not fully utilized in the learning process, learner's memory is not enhanced. This reduces their retention of material learnt, thereby contributing to the learners' poor performance.

In addition, it was observed that there were very few assistive technologies available at the school. At the time the research was conducted, there were only two cassette players that were used by teachers to carry out speech training, no group hearing aids were available, and the few individual hearing aids available were not fully utilized. In addition, only twenty teachers out of thirty-six were competent in speech training as well as in KSL. Subsequently, the researcher concluded that the educational resources available in the school were not enough to cater to the needs of the entire school.

### **5.3 Recommendations**

#### **5.3.1 Academic Performance in Kiswahili**

Based on the findings from this study, the researcher recommends the following action steps if Kiswahili learning is to be enhanced amongst learners with H.I:

1. Teaching methods need to be tailored to meet each individual learner's needs. In particular, all elements of TC and IEP should be incorporated in the teaching of learners with H.I
2. All teachers and examination officials should be trained on how to interpret English signs into Kiswahili.
3. The MOE should revise its policy to remove Kiswahili from the syllabus. It is imperative that learners, particularly postlingually deaf and hard of hearing, become proficient in Kiswahili in order to provide them with the necessary communicative skills to integrate into the community.

4. Time allocated for examination of learners with H.I should be increased more to allow them to take their examination without their disability becoming a hindrance to their performance.

### **5.3.2 Teaching and Learning Methods**

In order to optimize teaching and learning at the school, the researcher recommends:

1. Employing TC and IEP as teaching methods that are more individualized and designed to meet each pupil's needs and abilities.
2. Hiring more KSL-competent teachers in order to reduce the burden placed on the teachers thus allowing them to further individualize their teaching.
3. Splitting classes into smaller manageable groups to match the approved ratio of 1:12.
4. Carrying out an educational assessment of each pupil to determine postlinguals and prelinguals in order to identify academic areas of concern that would again allow teachers focus on those specific needs.

### **5.3.3 Conditions Requisite for Teaching Kiswahili**

1. ***Learning environment:*** Encouraging teachers to revert to the horse-shoe seating arrangement as this would inevitably shift the passive class atmosphere to one that is more interactive and cordial, allowing peer-peer learning to take place.
2. ***Learning experiences:*** The classrooms should be flooded with play things especially in lower classes to facilitate more Kiswahili language experiences.
3. ***Evaluation:*** A change in policy that would provide KSL training for examination officials in order to improve examination standards and that teachers train learners with H.I on how to tackle examination questions.

4. **Reinforcement:** Teachers find out ways to incentivize each pupil in order to inspire them to work harder to improve their Kiswahili skills.
5. **Attitude:** Teachers adopt an empathetic attitude rather than a sympathetic one such that they can encourage their pupils to learn Kiswahili in order to improve their performance in national examinations and embrace it as a national as well as an official language.

#### **5.3.4 Educational Resources**

Teachers fully utilize the resources available in order to enhance pupils' learning capabilities as well as improve their expressive skills. These are imperative in comprehension and communication using Kiswahili language.

#### **5.3.5 Further Research**

The researcher recommends the following steps to be adhered to as fundamental in tackling the problem of poor performance in Kiswahili:

##### **5.3.5.1 Establishment of Kiswahili-Specific Signs for Kenya Sign Language**

Kiswahili-specific signs should be established for KSL in order to facilitate learners' comprehension and proficiency of the language.

##### **5.3.5.2 Policy Change with Regards to Quotas Placed on Kiswahili**

The MOE has made Kiswahili an optional subject at the KCPE level. However some teachers were noted to argue that learners were over-burdened by being required to learn three languages (English, Kiswahili, and KSL). It is highly probable that most schools might even remove Kiswahili from the syllabus altogether. This is

problematic since Kiswahili has been declared both a national and an official language. Further research should be done to understand the policy-making process in order to stir advocacy work that would influence the policy makers to revert the decision that would potentially exclude Kiswahili from the curriculum.

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## APPENDICES

### APPENDIX 1. NON-PARTICIPANT OBSERVATION GUIDE

#### SECTION A. (FOR USE BY THE RESEARCHER)

Name of school: \_\_\_\_\_

Class: \_\_\_\_\_

Class enrolment: \_\_\_\_\_

Boys \_\_\_\_\_

Girls \_\_\_\_\_

Total \_\_\_\_\_

Date: \_\_\_\_\_

Time: \_\_\_\_\_

Topic: \_\_\_\_\_

#### 1) Methods used during the Kiswahili lesson:

Method	Very Frequent	Frequent	Rare	Very Rare
i. Sign language				
ii. Finger spelling				
iii. Cued speech				
iv. Pantomime				
v. Body language				
vi. Natural signs				
vii. Mimicry				
viii. Story telling				
ix. Pencil and pad				
x. IEP				

Very frequent: more than 60% of the time

Frequent: around half of the time

Rare: around quarter of the time

Very rare: less than quarter the time

Not at all

## 2. Educational Resources:

### a) Visual Aids:

Visual aid	Number on display	Number used during lesson
i. Charts		
ii. Posters		
iii. Drawings		
iv. Flash cards		
v. Pictures		
vi. Journals		
vii. Dailies		
viii. Labels		
ix. Maps		
x. Others		

### 3. Reinforcers used:

	Specification	Very frequent	Frequent	Rare	Very rare
Verbal					
Non-verbal					

Very frequent: more than 60% of the time

Frequent: about half the time 50%

Rare: about quarter the time 25%

Very rare: less than quarter the time

#### 4. Teaching/Learning Experiences/Activities

Expressive activities by learners:

<b>Activity</b>	<b>Very frequent</b>	<b>Frequent</b>	<b>Rare</b>	<b>Very rare</b>
Signing				
Writing				
Total communication				

Very frequent: more than 60% of the time

Frequent: around half the time 50%

Rare: around quarter the time 25%

Very rare: less than around quarter the time <20%

**SECTION B****1. EDUCATIONAL RESOURCES: (FOR USE BY HEAD TEACHER)****(a) (i) Whole School Resources:**

<b>Resource</b>	<b>Total Number</b>	<b>In working condition</b>
Cassette Players		
Computers		
Television Sets		

**(ii) Resource Persons:**

<b>Resource person</b>	<b>Number in school</b>
Teachers competent in KSL	
Group actors	
Teachers competent in speech training	

**(b) (i) Classroom Resources: (For classroom teacher)**

<b>Resource</b>	<b>Adequate</b>	<b>Not adequate</b>
Reference Material		
Sound amplification		
Reading supplementary materials		

**(ii) Sound amplifications:**

<b>Resource</b>	<b>Number</b>
Group hearing aid	
Individual hearing aid	
Digital hearing aid	
Cochlear implants	

**2. Formative evaluation mode/tools employed to determine learning outcome:**

<b>Tool</b>	<b>Very frequent</b>	<b>Frequent</b>	<b>Rare</b>	<b>Very rare</b>
Oral/signed questions				
Short answer questions				
Essays				
Observation				
CATS				

Very frequent: more than 60% of the time

Frequent: around half the time 50%

Rare: around quarter the time 25%

Very rare: less than around quarter the time <20%

3. Difficulties encountered by the teacher while teaching Kiswahili

(i) \_\_\_\_\_

(ii) \_\_\_\_\_

(iii) \_\_\_\_\_

(iv) \_\_\_\_\_

(v) \_\_\_\_\_

4. Difficulties encountered by learners with H.I. while learning Kiswahili

(i) \_\_\_\_\_

(ii) \_\_\_\_\_

(iii) \_\_\_\_\_

(iv) \_\_\_\_\_

(v) \_\_\_\_\_

## APPENDIX 2: INTERVIEW GUIDE FOR HEADTEACHER

Dear Respondent,

I am a graduate student from Kenyatta University researching on challenges to effective learning of Kiswahili among children with hearing impairment. All information disclosed will be treated with uttermost confidentiality and will be used only for the purpose of this study.

Name of school: \_\_\_\_\_

Gender: \_\_\_\_\_

Date: \_\_\_\_\_

1. How long have you been head teacher in this school?
2. Are you specialized in any area of SNE?
3. What is your general view of learning Kiswahili by learners with HI?
4. As an administrator, do you also get involved in teaching of Kiswahili? If yes, what challenges do you encounter?
5. How often do you carry out routine inspection in the teaching of Kiswahili in your school?
  - a) What methods do you observe in use?
  - b) What educational resources are used?
  - c) What teaching/learning experiences do your teachers or learners engage in?
  - d) To what extent do your teachers evaluate and keep progress record for learners in Kiswahili?
  - e) How do you and your teachers reward learner's positive outcome in Kiswahili?
6. What are the major challenges facing teaching/learning Kiswahili in your school?
7. What is your general view of learning Kiswahili by learners with hearing impairment?
8. What recommendations can you proffer on improving teaching/learning of Kiswahili in your school?
9. What other recommendations do you have for improving learning of Kiswahili for learners with HI in Kenya?

**APPENDIX 3: INTERVIEW GUIDE FOR TEACHERS OF KISWAHILI**

Name of school: \_\_\_\_\_

Gender: \_\_\_\_\_

1. How long have you taught Kiswahili in this school?
2. Are you specialized in any area of SNE?
3. What is your general view of learning Kiswahili by learners of HI?
4. How long have you been a Kiswahili teacher?
5. What method do you use in teaching Kiswahili? (Probes, lecture, demonstration, description). Why do you prefer these methods?
6. What educational resources do you find suitable in your Kiswahili lessons with your learners? Why?
7. How often do you evaluate learner performance in Kiswahili? What can you comment about their performance in the language skills?
8. How do you reward your learner's positive outcomes of Kiswahili learning?
9. Which is the most difficult component you struggle teaching? Why?
10. What recommendations can you proffer as regards teaching/learning Kiswahili by your learners?
11. What other recommendation do you have for improving learning of Kiswahili for learners with HI in Kenya?

#### APPENDIX 4: INTERVIEW GUIDE FOR LEARNERS OF KISWAHILI

The following questions will be signed to the pupils to elicit their responses

Name of School: \_\_\_\_\_

Gender: Boys=

Girls=

Total=

Class: \_\_\_\_\_

Average age: \_\_\_\_\_

Date: \_\_\_\_\_

- 1) a) Which subjects do you like studying at school?  
b) Which subjects do you dislike?
- 2) Do you enjoy reading Kiswahili?
- 3) Which of these methods do you like using when learning Kiswahili? (sign language, finger spelling, cued speech, storytelling, lip reading)
- 4) What activities do you enjoy most when learning Kiswahili?
- 5) Would you like to continue learning Kiswahili up to secondary school? Why?
- 6) Do you like the way your Kiswahili teacher teaches you? If not, why?
- 7) Which visual aid do you like using in your Kiswahili lessons?
- 8) What would you like to be included in your learning environment/class?
- 9) Do you ever receive rewards for doing well in Kiswahili? If so, name them.
- 10) What difficulties do you experience in learning Kiswahili?
- 11) What can be done to help you learn Kiswahili better?

**APPENDIX 5: DOCUMENT ANALYSIS**

DATE \_\_\_\_\_ CLASS \_\_\_\_\_

Informant: Kiswahili teacher

*Indicate with ✓/ X for available/not available*

Document	Availability	Outcomes	Number
i) Syllabus		Topics on record Topics taught	
ii) Scheme of work		Topics planned Topics already taught	
iii) Lesson plan		Lessons allocated per week Lessons prepared	
Iv ) Timetable		No of Lessons per week Lesson taught	
v) Attendance register		No of pupils present weekly No of pupils absent weekly	
vi) Pupils Exercise books		Assignments done Assignments checked	

**General Comments**


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**APPENDIX 6: DATA SHEETS****a) KCPE RESULTS**

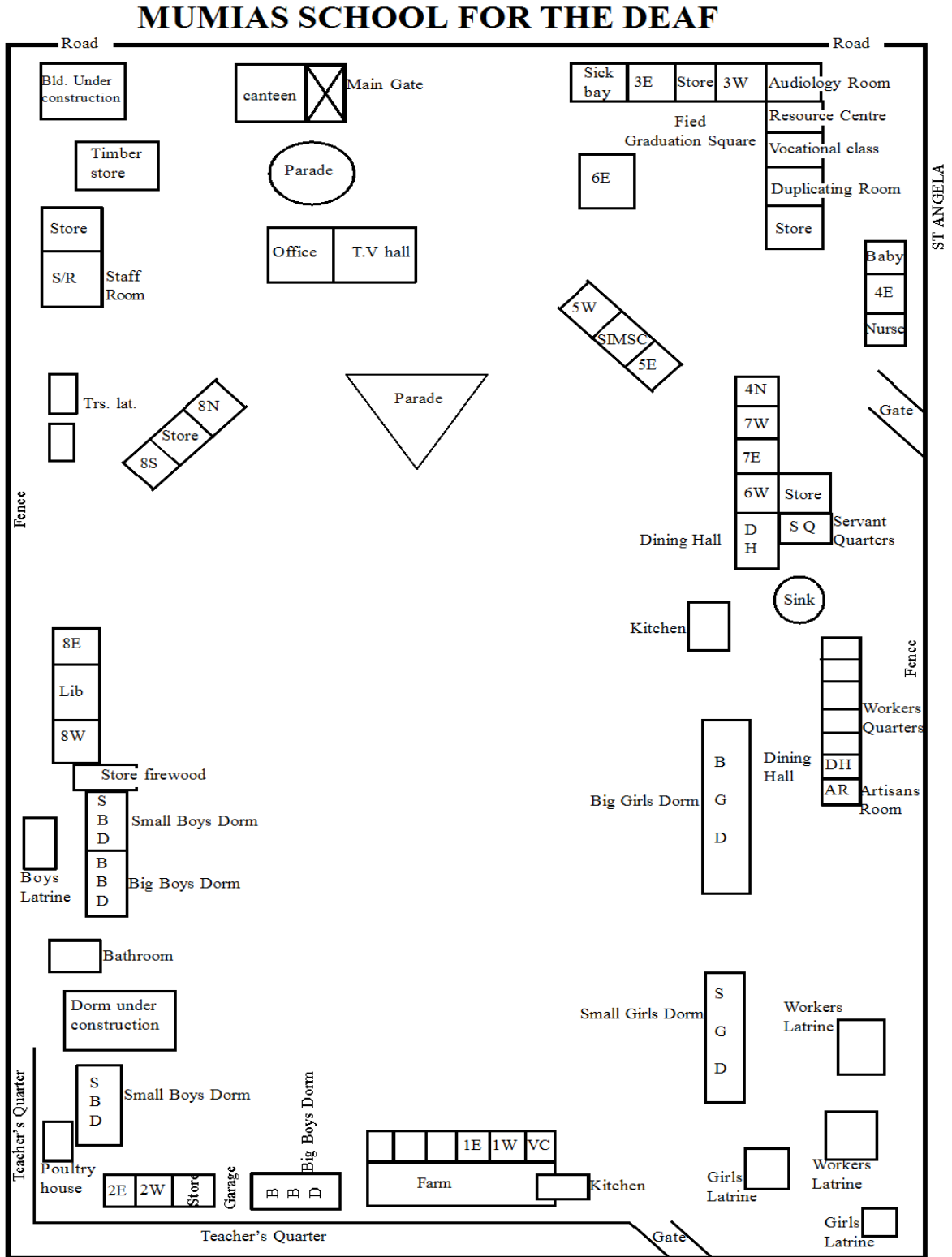
District: Mumias

Year: 2008 up to 2010

Subject: Kiswahili

<b>YEAR</b>	<b>NUMBER OF CANDIDATES</b>	<b>MEAN SCORE</b>
<b>2004</b>		
<b>2005</b>		
<b>2006</b>		
<b>2007</b>		
<b>2008</b>		
<b>2009</b>		

APPENDIX 7: MAP OF MUMIAS SCHOOL FOR THE DEAF



## APPENDIX 8: ANOVA TEST

The ANOVA test (Analysis of Variance) is a powerful statistical procedure that can be used to compare the means between groups in order to determine whether the difference between the means is statistically significant<sup>2</sup>. In this study, the test was used to determine if there is a difference in means ( $\mu$ ) between the five KCPE subjects, subsequently showing that Kiswahili is the worst performed subject amongst learners with H.I.

There are 3 steps involved in the ANOVA test:

**Step 1:** State the null ( $H_0$ ) and alternative ( $H_1$ ) hypotheses.

$$H_0: \mu_{\text{ENG}} = \mu_{\text{KISW}} = \mu_{\text{MATH}} = \mu_{\text{SCIE}} = \mu_{\text{GHCRE}}$$

$$H_1: \mu_{\text{ENG}} \neq \mu_{\text{KISW}} \neq \mu_{\text{MATH}} \neq \mu_{\text{SCIE}} \neq \mu_{\text{GHCRE}}$$

**Step 2:** Choose a significance level (alpha;  $\alpha$ ) for the ANOVA test

$$\alpha = 0.05 \text{ (indicates a 95\% certainty which is the norm among statisticians}^3\text{)}$$

**Step 3:** Calculate the F statistic and p-value using Excel's Data Analysis

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<sup>2</sup><http://org.elon.edu/econ/sac/anova.htm> accessed on January 1, 2012

<sup>3</sup>[http://www.ehow.com/how\\_5506619\\_understand-anova.html](http://www.ehow.com/how_5506619_understand-anova.html) accessed January 1, 2012

**Results:**

Anova: Single Factor

SUMMARY				
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
ENG	30	901	30.03333	39.41264
KISW	30	751	25.03333	22.99885
MATH	30	786	26.2	39.26897
SCIE	30	756	25.2	53.13103
GHCRC	30	708	23.6	33.76552

ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	709.24	4	177.31	4.701262	0.001349	2.434065
Within Groups	5468.733	145	37.7154			
Total	6177.973	149				

According to this test the F statistic = 4.70126 and the p-value = 0.00135; with a critical value of 0.05, the critical F = 2.43407. Since the F statistic is greater the critical F and the p-value is less than  $\alpha$ , we can reject the null hypothesis hence conclude that the difference in means between the subjects is indeed statistically significant. As such, since Kiswahili has the lowest mean, it is the worst performed subject amongst learners with H.I.

**APPENDIX 9: RESEARCH PERMIT**

REPUBLIC OF KENYA

**NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY**

Telegrams: "SCIENCETECH", Nairobi  
 Telephone: 254-020-241349, 2213102  
 254-020-310571, 2213123.  
 Fax: 254-020-2213215, 318245, 318249

When replying please quote

**NCST/RRI/12/1/SS-011/1087**

Our Ref:

P.O. Box 30623-00100  
 NAIROBI-KENYA  
 Website: www.ncst.go.ke

Date:  
**10<sup>th</sup> August 2011**

Catherine Namalwa Makhokha  
 Kenyatta University  
 P.O BOX 43844-00100  
 NAIROBI

**RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on "*Challenges to learning of Kiswahili among children with hearing impairment :A case of Mumias primary School for the deaf*" I am pleased to inform you that you have been authorized to undertake research in **Mumias District** for a period ending **30<sup>th</sup> September 2011**

You are advised to report to **The Principal Mumias, School for the deaf** before embarking on the research project.

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

A handwritten signature in blue ink, appearing to read 'P.N. Nyakundi'.

**P.N. NYAKUNDI**  
**FOR SECRETARY/CEO**

Copy to:

The Principal  
 Mumias School For The Deaf

PAGE 2

PAGE 3

Research Permit No. **NCST/RRI/12/1/SS011/1087**

**THIS IS TO CERTIFY THAT:**

Date of issue

**10<sup>th</sup> August 2011**

Prof./Dr./Mr./Mrs/Miss/Institution

Fee received

**KSHS.1000**

**Catherine Namalwa Makhokha  
of (Address)Kenyatta University  
P.O BOX 43844, Nairobi**



**has been permitted to conduct research in**

**Location**

**Mumias**

**District**

**Western**

**Province**

**on the topic: Challenges to learning of  
Kiswahili among children with hearing  
impairment: A case of Mumias Primary  
school for the deaf .**

**Applicant's  
Signature**

**Secretary  
National Council for  
Science and Technology**

**for a period ending 30<sup>th</sup> September 2011**

**CONDITIONS**

1. You must report to the District Commissioner and the District 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 with-out 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)/four(4) bound copies of your final report for Kenyans and non-Kenyans respectively.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice



**REPUBLIC OF KENYA**

**RESEARCH CLEARANCE  
PERMIT**

**GPK6055t3mt10/2011**

**(CONDITIONS—see back page)**