ANALYSIS OF STRATEGIES USED IN TEACHING SPEECH AND LANGUAGE: A CASE STUDY OF MACHAKOS SCHOOL FOR THE DEAF, 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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To my beloved father Pius Muthini and mother Esther Malinda whose foresight in education and constant encouragement drove me to this level of education and to my husband Robert Laki Mutua and our loving children Mwende, Mutio and Kyalo for their unending patience, moral support and encouragement.
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ABBREVIATIONS AND ACRONYMS

ASHA: American Speech Language Hearing Association

ASL: American Sign Language

dB: Decibels or units of Loudness

DL: Distance Learning

EARC: Educational Assessment and Resource Centre

ECE: Early Childhood Education

EFA: Education For All


H.I: Hearing Impairments

IEP: Individualized Educational Programme

KCPE: Kenya Certificate of Primary Education

KCSE: Kenya Certificate of Secondary Education

KIE: Kenya Institute of Education

KISE: Kenya Institute of Special Education

KSDC: Kenya Society for Deaf Children

KSDDC: Kenya Society for the Deaf and Dumb Children

KSL: Kenya Sign Language

LAD: Language Acquisition Device

LARGER MACHAKOS: Machakos and Makueni County

MDG’s: Millennium Development Goals

MoE: Ministry of Education

RoK: Republic of Kenya

SE: Sign English

SEE: Signed Exact English
SES: Social Economic Status
SN: Special Needs
SNE: Special Needs Education
STU: Speech Training Unit
UNDDP: United Nations Decade of Disabled Persons
UNESCO: United Nations Educational, Scientific and Cultural Organization
USA: United States of America
ABSTRACT

The aim of this study was to investigate how learners with hearing impairments acquire speech and language skills. The learners with speech impairments are found in developed and developing countries. In developed countries, advanced technology of speech and language training has been in use for a long period compared to developing African countries. As such, speech and language skills among the HI in those countries were well-developed. This study was carried out in Machakos School for the Deaf, Machakos County, Kenya which caters for learners with hearing impairment not only from Kenya, but also from other countries of East Africa. Data was collected from teachers’ experiences, levels of training in the field of special education, on job-trainings and parental involvement. The objectives of the study were: specialized qualifications of teachers who taught speech and language to learners with the hearing impairment, the strategies used in teaching speech and language to learners with hearing impairment, the equipment and facilities available in the school to teach speech and language to learners with hearing impairment, the assessment of speech and language readiness for learners with hearing impairment, the role played by parents in speech and language acquisition for their children with hearing impairments and the challenges faced by headteacher, teachers and parents in training speech and language to learners with hearing impairment. Target population was 89 subjects. The research adopted mixed method approach design. Machakos School for the Deaf was purposely selected for the study because it was used by the MOEST for a pilot study on total communication in 1988. Quantitative and qualitative data was collected using questionnaires and interview guides from pupils, teachers, headteacher and parents respectively. A pilot study was carried out to establish the validity and reliability of the research instruments. Descriptive statistics in SPSS such as frequency tables, percentages and graphs were used to analyze quantitative data while thematic texts were used to analyze qualitative data. Data was then analysed to generalize conclusions on the findings of the study. The study showed that the standard two teacher was more conversant with various speech and language strategies of teaching the learners with hearing impairments. However, they preferred using sign language that is indicating a limitation on teachers’ competence to meet the diverse needs of learners with hearing impairment especially the hard of hearing category who are good at speech training skills. Thus, it is recommended that teachers for learners with hearing impairment should be in-serviced and trained to equip them with knowledge and skills on speech training. Further research should be done to determine the effectiveness and competence of teachers in educating learners with hearing impairment in special schools for the Deaf.
CHAPTER ONE

INTRODUCTION

This chapter presents the background information; statement of the problem; purpose of the study; objectives of the study; research questions; significance of the study, scope and limitations of the study, assumptions of the study and theoretical and conceptual framework.

1.1 Background to the Study

Effective teaching of speech and language to learners with hearing impairments is a world-wide problem in both developed and developing countries (Moore; 1987; Jarkin, 1994; Koech, 1999; Karugu, 2000). Hearing impairments range from mild to profound. From these two major categories emerge; the hard of hearing who are defined as those whose hearing loss ranges in severity from mild to moderate hearing loss of 26 to 40dB, moderate hearing loss of 41 to 55dB, moderately severe hearing loss 56-70dB, severe hearing loss of 71 to 90dB and lastly profound hearing loss of 91 to 120dB. It is established that pre-lingually hearing impaired children are viewed as receptive in speech training than those learners with post-lingual hearing impairment (William & Susman, 1998). It is estimated that overall, between 500 and 650 million people worldwide live with a significant impairment. According to the World Health Organization (WHO, 2001) around ten percent of the World’s children and young people, some 200 million have sensory, intellectual or mental health impairment, UN Enable (1994) contends that in most countries, at least one person out of ten has impairments either physical, mental or sensory impairments and 25% of any population is adversely affected by the presence of disabilities (Innocenti Digest volume 13, 2005). Unable to hear or speak, the deaf are thought to be cut off from
speech and language therefore from freedom to speak, as well as enhancing oral communication and culture transmitted from previous generations (Perlmutter, 2007).

It is estimated that approximately 10% of the population in the United States or 31.5 million people, have some degree of hearing loss (Kochkin, 2003). Approximately 3 in every 1,000 births are children with hearing loss, making it the most frequently occurring birth defect (National Centre for Hearing Assessment and Management, 2006). Children with hearing loss, even if only mild in degree, frequently exhibit a lower-self-esteem and reduced self-worth that may ultimately impact interpersonal relationships with their peers and family members (Bess, F. H., Doddy-Murphy, J., and Parker, R. A. (1998), a somewhat staggering statistic is that approximately 95% of children with hearing impairment are born to parents with normal hearing (Mitchell & Karchmer, 2004).

The US Department of Education’s statistics indicate that the public schools identify above 0.13% of the population from 6-17 years of age as deaf or hard of hearing. Approximately, about a million children who are identified for special education receive services primarily for the language and speech skills (Kauffman & Pullen, 2009). Several authorities have been critical of using an exclusive oral approach with students who have hearing impairment (Lane, 1996).

Research in the field of child speech and language development have been conducted on a large scale-worldwide, however, it is important to note that in many developing countries in Africa, such development is still limited. Studies in Ghana show that, the current linguistic research has not provided a comprehensive picture of the language
situation in the country (Bodomo, 1995), which also applies to Kenya. The exact number of persons with hearing impairment in Kenya is not known, although Katie (2010) makes an estimate of the total number of deaf children in Kenya to be 230,000. The projection of the Kenya Census (2009) from the preliminary result was 38.7million (allafrica.com, 2010). The prevalence of hearing disability in Kenya was estimated at 0.6% (Kihingi, 2008).

According to UNESCO (2006), the population of people with disabilities in Kenya is estimated at 10% of the total population. Twenty-five percent of these are children of school going age. Out of a total of 750,000, an estimated 90,000 have been identified and assessed. About 14,614 are enrolled in educational programmes for children with disabilities; therefore, an equivalent number are integrated in regular schools. This implies that over 90% of children with handicaps are either at home or in regular schools with little or no specialized assistance. Currently, there are about 41 special primary schools and 7 secondary schools for the HI, 10 special schools for the visually impaired, 38 special schools for the mentally handicapped, and 9 special schools for the physically handicapped; and there is only one secondary special school for learners with visual impairment. Examples of special secondary schools for learners with HI include Rev. Muoro Secondary, Kuja Secondary, Mumias Secondary, Kambui secondary, Machakos secondary, Makongo among others. Karen Technical is a vocational institute for learners with HI. There were seventy-one schools and units for learners with HI in Kenya, (KSDC; 2004). The enrolment of learners with HI in special schools in Kenya is significantly high (MoEST, 2008). Unfortunately, this does not translate to their academic performance in that few proceed to higher levels of the education system (Kenya National Examinations
Council, 2006). The number of students with HI in secondary schools was about six hundred in number and overall a total of 5,241 students were recorded in Kenya (EARCs; 2003). The minimal representation of learners with HI in post secondary school institutions indicates instructional problems that urgently need to be addressed.

Overall, the problem of effective teaching of the learners with hearing impairment ranges from socio-economic backgrounds of the parents, schools/institutions, environments to educational policies that determine the kind of speech and language acquisition skills to be provided (Yssldyke & Algozzine; 1995; Gachathi Education Report-Kenya, 1976, Koech Education Report, 1999). If learners with HI were provided, with adequate speech and language training, their academic performance would greatly be enhanced. This would likely bridge the gap between academic performance and that of their hearing counterparts. Much emphasis has been put to promote sign language and little emphasis is put in specialist subjects which are pertinent to learner’s with hard of hearing who deserve it to improve their speech and language articulation. The Kenya Government has continued over the years to offer education to learners with HI, for example special schools for learners with HI like Nyangweso and Rev. Muhoro were established, Kuja Secondary, Karen Technical and Mumias Secondary School in 1999.

1.2 Statement of the Problem

Effective instruction and subsequent academic achievement for learners with HI require speech and language training which forms the basis of their instruction MoEST (2009). It’s argued that success of learners with HI heavily depends on the ability of the teacher to assess their speech and language readiness in order to plan for
the necessary intervention measures that are required. Enhancing these skills will provide the basis for teaching whereby teachers use their strengths to help overcome the weaknesses.

The enrolment of learners with HI in special schools in Kenya is quite significant comprising 41 primary schools for learners with HI against 38 schools for learners with mental disabilities and three secondary schools against one secondary school for visually impaired learners, (MoEST, 2008). Unfortunately, this does not translate to their academic performance in that few proceed to higher levels of the education system (Kenya National Examinations Council 2006). Specifically, Machakos School for the Deaf has recorded dismal performance in the past years for example in 2006, the school attained a score of 127.54 out of 500 marks, in 2007, 131.52, in 2008, 120.17 and lastly in 2009, the mean score was 140.10 and in 2010 the mean score was 170.05.

Few learners with HI manage to successfully join middle or higher institutions, subsequently locking them out of the labour markets as a result of speech and language training barriers to the learning process and in most cases make one to take longer to obtain the required qualifications. The minimal representation of learners with HI in post secondary school institutions indicates instructional problems that urgently need to be addressed.

Research by Quigley and King (1981) states that pupils with hearing impairment have difficulty in acquiring adequate reading skills. This was attributed in part, to inadequate speech and language development. Quingley, (1977) shows that the
average 18 year old student cannot understand sentence patterns that the average 10 year old hearing pupil understands and uses with ease and hence the need to teach speech and language to the learners with HI. A teacher quoted in Mundi (2009) posits that some children who are admitted to special schools lose speech. If only, these children were trained on speech and language adequately then, their speech and language would have improved instead of losing it. Hence, early identification and intervention are important in reducing the impact of disability later in life. Maneno, 2008 also noted that there is need for accurate assessment and referral system to ensure that learners are placed in an appropriate programme. The current study did establish the speech and language training strategies used in educating learners with HI and the assessment procedures used.

1.3 Purpose of the Study

The purpose of the study was to analyze strategies used in teaching speech and language to learners with hearing impairments in Machakos School for the Deaf, in Machakos County.

1.4 Objectives of the Study

The specific objectives were

(i) To establish professional qualifications of teachers involved in speech and language teaching of learners with hearing impairment.

(ii) To examine the strategies used in teaching speech and language to learners with hearing impairment.

(iii) To determine the assessment performed to establish speech and language readiness in learners with hearing impairment.
(iv) To establish the speech and language teaching facilities available in the school.

(v) To find out the role that parents play in speech and language acquisition of their children with hearing impairment.

(vi) To identify the challenges faced by the headteacher, teachers, parents and outline possible solutions.

1.5 Research Questions

This study was to answer the following research questions:

(i) What professional qualifications do teachers possess to teach speech and language skills to learners with hearing impairment?

(ii) What are the strategies used in teaching speech and language to learners with hearing impairment at Machakos?

(iii) How is assessment of speech and language readiness for learners with hearing impairment performed?

(iv) What are the speech and language teaching facilities available in the school?

(v) What role do parents of the children with hearing impairment play in speech and language acquisition?

(vi) What challenges do headteachers, teachers and parents face and what possible solutions suggested?

1.6 Significance of the Study

This study was significant as it was expected to explore strategies used in teaching speech and language as applied by teachers in educating learners with hearing impairments with reference to Machakos School for the Deaf.
• The findings of this study may provide useful information to the Machakos School for the Deaf management and the whole learners population in understanding the correct strategies in speech and language used by teachers in teaching learners with HI. This will enable stakeholders especially the Board of Governors to offer their appropriate assistance to the learners with HI.

• The findings might be useful in Machakos school for the deaf by the headteacher who may put in place correct strategies that may cater for the learners with HI so as to enhance their academic and communication skills.

• The findings of the study may provide a basis for teachers who teach speech and language to learners with HI to improve on most appropriate strategies in teaching them.

• The findings of the study may provide a basis for the learners with HI to advocate for the right equipment/facilities, assessment in speech and language readiness, parental involvement and professional qualification of their teachers for better speech and language training.

1.7 Assumptions of the Study

(i) The study assumed that teachers would employ certain strategies when teaching speech and language to learners with hearing impairments.

(ii) The study assumed that there were some facilities and equipment available in the school for teaching speech and language to learners with hearing impairment.

(iii) The study assumed that there were some level of parental involvement in speech and language acquisition for the learners with hearing impairment.

(iv) The study assumed that assessment was conducted for speech and language readiness of learners with hearing impairment.
(v) Those teachers of standard 2 and 5 had some special professional training from primary teacher training colleges.

1.8 The Scope and Limitations of the Study

The study was limited to Machakos School for the Deaf. It was also limited to learners with hearing impairments aged between 6-17 years in classes 2 and 5 of Machakos School for the Deaf in order to explore the strategies teachers used in training speech and language skills. The study was also limited to the headteacher of Machakos School for the Deaf as well as the parents of the learners with hearing impairment in classes 2 and 5.

1.9 Theoretical Framework

Speech and language readiness is seen in terms of the learner's age and the entry behaviour at the time of being taught. Once the child undertakes speech and language training subjects like auditory training, articulation readiness, individual speech training and group speech training, it means that the new speech sounds learned encourages speech acquisition as well as language development in the learner with hearing impairment.

The study was designed according to ecological theory stipulated by Bronfenbrenner (1979). This theory links the growth and development of children to the varied widening concentric social settings within which they actively participate on the one hand, and to those in which they do not directly participate, but which have influence on their development and learning on the other hand (Apter, 1983).
The speech training programme in Kenya can be compared to what Bronfenbrenner refers to as the mesosystem because the child interacts and communicates with people in those settings (i.e., parents and teachers). Bronfenbrenner’s primary concern is to promote linkages between home and school in the interest of enhancing development of the child, since events at home affect the child’s learning at school and vice versa (Bronfenbrenner, 1979). This research was restricted to the mesosystem which emphasizes existing inter-connections or interactions between the home and school and therefore, the basis for strengthening partnership between parents and Special Needs Education teachers. This conceptual framework displays how parents and teachers are involved in speech and language training to learners with hearing impairment for speech acquisition. Based on theory on the ecology of human development by Bronfenbrenner (1979), the conceptual framework was developed. Figure 1.1 shows a link between learners identified with hearing impairments and outcome. The outcome of speech and language training skills involves the variables; availability of equipment and facilities; assessment in speech and language readiness, parental involvement, professional specialized qualifications and experiences. The variables are perceived to impact on learners with hearing impairments acquisition of speech and language skills positively.

Bronfenbrenner’s ecological theory indicates child development in terms of the reciprocal influences between children and the settings that make up their environment. Ecological theory focuses on motivation concerned with the development and function of a child within social contexts, including speech and language acquisition. It assumes that children with hearing impairment are active organisms with innate speech and language devices that are capable of language
acquisition. According to the theory, these innate tendencies do not operate automatically, but depend on the extent to which the social context comprising the home and school provides environment as a base for speech and language training skills the learners with HI need.

1.10 Conceptual Framework of the Study

In developing the conceptual framework of this study, an attempt was made to analyse strategies used in training speech and language to learners with hearing impairments:
1.10 Conceptual Framework on Strategies for Speech and Language Training

![Conceptual Framework Diagram]

**Learner with Hearing Impairment**

**Speech and Language Training Strategies**
- Auditory training
- Group speech training
- Individual speech training
- Articulation training

**Speech training facilities & equipment**
- Speech kit
- Drum
- Whistle
- Bottle
- Bell
- Sound proof rooms

**Availability of equipment and facilities**

**Assessment in speech readiness**

**Parental involvement**

**Professional specialized qualifications/ experiences**

**Outcome**
Speech and language acquisition by learners with hearing impairment

*Fig 1.1: Conceptual framework: speech and language training and outcome*

*Source: Model adapted from Bronfenbrenner, 1979*
Figure 1.1 exhibits the Conceptual framework which encompasses the major variables that is speech and language training to learners with hearing impairment and the possible pattern of influence on both speech and language acquisition by learners with hearing impairment.

The researcher adapted the conceptual model shown in figure 1.1 demonstrates the influence of speech training strategies (independent variables) on speech and language acquisition (dependent variable) as shown by the arrows. For instance speech and language training strategies namely; auditory training, group speech training, individual speech training and articulation training enable learners with hearing impairments acquire speech and language, intervention measures like availability of facilities and equipment, assessment in speech readiness is done, parents of learners with hearing impairments are involved and teachers professional qualification as well as experiences are prioritized, hence the learners with hearing impairments acquire speech and language. All these intervention measures have great impact on both speech and language acquisition.
1.11 Operational Definition of Terms

Aural Methods: Refer to use of speech and speech reading by learners with hearing impairment. It stresses auditory training to aid in learning to speak as well as speech training, learning to read the lips and facial expressions.

Bilingualism: An approach in education of the learners with hearing impairment where two languages are simultaneously used for communication across the curriculum.

Deaf: A learner whose hearing disability is so severe that it precludes successful processing of linguistic information through audition with or without a hearing aid.

Hearing Impairments: A generation term which is preferred when one has a hearing loss that may be mild, moderate, severe or profound. Usually used in educational setting.

Manual Method: A system of communication that uses manual alphabet (finger spelling), body movement, facial expression and signs, used as a means of communication.

Oral method: The use of spoken language, speech and lip reading by learners with hearing impairment.

Sign Language: A non-oral method of communication, purely visual, gestural language which has been developed and is used for communication.
CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction
This chapter examines issues pertaining to learners with hearing impairments; history of education of learners with hearing impairments/ SNE teacher training; global trends on education of learners with hearing impairments, development of education of learners with hearing impairments and education status of learners with hearing impairments in Machakos County, strategies used by teachers in teaching speech and language to learners with HI, and lastly parental support in speech and language training of their children with HI.

2.1 History of Education of Learners with Hearing Impairments /SNE Teacher Training and Qualifications

New idea about education began to emerge with the introduction of Western Education and formal school. According to Solity (1992), the Education Act of 1981 Special Needs Education over the years has set new teaching and learning practices in Special Needs Education. With the introduction of specialist subjects by the Kenya Institute of Education (KIE), learners with hearing impairments stand a chance to improve their speech skills. There are changes particularly in relation to the teaching strategies for speech and language for learners with HI. This is in line with Evans’ (2000) suggestion that; many issues and principles still remain constant, affecting implementation of new innovations such as speech and language training techniques. The researcher, therefore, attempts to look at this gap that is affecting speech and language acquisition especially speech and language training strategies used by teachers in educating learners with HI in Machakos Special School for the Deaf. The
researcher deduced that poor speech and language training methods would have serious implications on curriculum implementation to the learners with HI if no urgent action is taken to address the speech and language training at early years.

It is generally considered that the systematic teaching had its origin in the sixteenth century in Spain when deaf children of royal families were placed in the care of Pedro Ponce de Leon. Because it was a legal requirement that these children acquire speech and language to claim their inheritance, the key emphasis was placed upon the teaching of speech and language. Soon, formal education of children with HI spread to the rest of Europe and later to the United States of America (USA). Different countries adopted different methods of teaching learners with HI. The oral method was predominant in most parts of England while manual method was predominant in France. The manual method became popular in USA, mainly because of French influence. Later, some alternative ways of educating learners with HI were developed worldwide. For instance, the bilingual approach, Total Communication approach and the signed written English approach began to be used.

The Kenya government has continued over the years to offer education to learners with HI right from 1958 with the establishment of Kenya Society for the Deaf and Dumb children (KSDDC). Later, the organization was registered as a charitable organization named Kenya Society for the Deaf Children (KSDC). Policy of KSDC was to set up as many units and schools attached to existing primary schools. The aim was to give learners with HI a tool with which to communicate in order to facilitate rehabilitation. Aga Khan special school for the Deaf in Mombasa was established in 1958.
In 1961 Catholic Church opened Mumias school for the Deaf and Lwak (currently Nyang’oma). It was followed by Aga Khan school for the Deaf in Nairobi in the same year 1961. Later, the period between 1964 – 1980 realised a rapid expansion of schools such as Kambui, Tumutumu, Kaaga, Ngala, Kapsabet, Muranga, Kwale, Kibarani, Kitui and Racecourse. In 1980, Kabarnet School for the Deaf Blind was established. In 1986, the Machakos School for the Deaf was established by Swedish Organization of Handicapped International Aid Foundation (SHIA). In 1988, Reverend Charles Muhororo Secondary was established by the Presbyterian church of East Africa (PCEA).

2.2 Global Trends on Education and Strategies Used to Teach Learners with Hearing Impairments

One major problem with HI is communication dating back to the sixteenth century. There has been a raging debate about how individuals who have HI should converse (Lane, 1984). Although it is impossible to predict the exact consequences of a disability on a person’s functioning in general, HI poses more difficulties in adjustment than does visual impair. This is largely due to the effects of hearing loss as well as the ability to understand speech and language acquisition of learners with HI whose parents are also deaf. Authorities point to the parents’ ability to communicate with their children in American Sign Language (Sheridan & Davies, 2001).

The first book on cluttering was written by Dr. Desoweiss in 1964 on speech problem. Reflecting that renewed interest and honouring professional Eastern European pioneers in cluttering, the first international cluttering, conference was held in
Bulgaria in May, 2007. The primary goal of the international cluttering association was to increase public and professional awareness about this communication disorder, so that ultimately more effective treatment could be established through speech and language training skills. Technological aids for teaching speech and language to learners with HI have been approached in various ways: Providing the acoustic feedback in a visual form using methods such as spectrograms, going as far back as 1947, providing articulatory feedback, Some excellent early work on combining some components of the two types of data and the successful teaching of speech and language also requires maintaining motivation for learners with HI and repeated practice.

Thus, the system utilizes the present-day advances in computing technology and integrates both acoustic and articulatory data into outputs, consisting largely of computer games, which are designed to sustain children’s motivation, and frequently permit children to work without a teacher. The Ortho-Logo-Paedia (OLP) aimed at improving the quality of life of persons with articulatory impairments by applying a novel technological aid to speech therapy.

Children need to learn pre-reading skills or concepts about letters, words and stories before they can successfully learn to read (Bissex, 1980). According to Mason (1980), children acquire these early concepts informally by pointing out print in their environment, by having their parents read stories to them, and by printing letters and words in their drawings. These early concepts or pre-reading skills are believed to lay the foundation of early literacy. A significant contribution was made by Nickerson and Stevens (1976), when they developed the first computer-based speech and
language training systems. Since then, the developed micro computer-aided speech and language training programmes have enhanced the possibility for profoundly hearing-impaired children to develop intelligible speech (Youdelman & Levitt, 1991; Arends, 1993; Jarkin, 1994). The knowledge must consist of aspects of language that are universal to all languages. Because the Language Acquisition Device (LAD) is assumed to function in all children, it must allow the acquisition of any language event for the learners with HI; (Pinker, 1994).

2.2.1 Auditory Training for Learners with HI

Proponents of an oral approach to deaf education believe that deaf children are best served by instruction in lip reading, in maximum use of residual hearing (auditory training), and articulation to improve their speech. The development of cochlear implants has facilitated oral language gains by children in oral programs (Geers A. E., & Moog J. S. (1994). To produce speech sounds correctly, one has to be able to monitor auditory especially the output of one’s vocal tract. To hear, one has to tell whether he/she is producing speech sounds correctly or not and this can have several consequences. If one develops a severe hearing loss before he/she begins to speak, it is likely that one may not be able to learn to produce at least some speech sounds without special training. This is why children who are deaf at birth do not learn to speak in the usual way. They need specialist training on speech skills.

A sensorineural hearing loss is more likely than a conductive losses to cause articulation errors, for two reasons. First, sensorineural hearing losses tend to interfere more with self-monitoring of speech than conductive ones. Persons who have sensorineural hearing losses tend to hear their speech as relatively soft and those
who have conductive hearing losses tend to hear it as relatively loud. Second, sensorineural hearing losses can be more severe than conductive hearing losses. Conductive hearing losses cannot cause deafness. The more severe a hearing loss, the more likely it is to interfere with monitoring speech auditorially.

In speech and language training the specialist teacher has to use three main approaches: Environmental modification, remediation activities, and compensatory strategies (Bellis, 1996). Environmental modification changes the learning environment so that it provides highly compensatory strategies and better quality auditory information common techniques which include note takers, frequent checks for clarification, assistive listening devices, and preferential seating. Remediation activities focus on alleviating the speech and language problems by improving auditory processing abilities. The specialist teacher engages the child in structured activities designed to stimulate various aspects of the auditory processing system, such as training in the temporal organization of sounds. Compensatory strategies teach the child to be a proactive listener and communicator and to use strategies that improve both roles. With early and appropriate identification and intervention, children can learn to listen and speak (National Institute for Deafness and other Communication Disorders, 2003).

Once a client has been fitted with an appropriate amplification device, he or she may need to learn (or relearn) how to make sense of what is being heard through some type of formal or structured listening practice. Through such a practice, the goal of auditory training is to maximize a person’s use of the residual hearing to enhance the perception of speech and non-speech cues (Schow & Nerbonne, 2007).
Improvements in auditory perceptual skills should lead to progress in other areas including speech and language development, cognition, reading and learning. The principle of neural plasticity is paramount to the process of auditory training. Neural plasticity, as it relates to the auditory systems, refers to psychological and functional changes within the central nervous system in response to auditory stimulation (Greenough, 1993).

The underlying principle of auditory training is to promote neural plasticity through auditory stimulation to overcome the negative consequences of auditory deprivation brought up by the hearing loss. Neural plasticity is greater in children than adults, hence supporting the importance of early identification and early intervention. When developing an individual auditory training plan, it is important to consider the individual’s degree of hearing loss and whether they are prelingually or postlingually hearing impaired. In most cases, intensive and enriched auditory training activities are conducted with children, particularly those who have recently received hearing aids or cochlear implants. Development of an individual training program usually begins with a thorough assessment of the person’s auditory perceptual skills. The specialist teacher uses several tools to assess a wide variety of perceptual skills ranging from simple phoneme awareness to comprehension of connected discourse. Specialist teachers should also administer speech perception tests that evaluate how a person makes use of both visual and auditory cues to determine how well they are able to integrate the two modalities to facilitate receptive communication. Many of these programs are designed specifically for at home with the child’s family assuming an active role in the training process (Tye-Murry, 2009).
One of the most widely used models is that advocated by (Erber 1982). This model is appropriate for children and can be used for visual as well as auditory perceptual training. The most basic perceptual task is detection of awareness that is being able to determine the presence or absence of a stimulus. The basic premise is that a stimulus cannot be processed unless it can first be detected (Clark, & English, 2004). Therefore, at this level the task is to determine which environmental (for example telephone ring, smoke alarm) or speech sounds are audible to the individual.

Auditory “discrimination” is the second level of auditory training. The learner with HI makes judgments as to whether pairs of stimuli are the same or different for example. the speech specialist teacher presents syllable pair /pa/ - /sa/, the client must determine whether or not they sound the same. The same approach can be done for environmental sounds, words, phrases and sentences as well.

The third level, is training on “identification” whereby the learner with HI must label what he or she hears, such as by repeating or pointing to a picture representing the target. The fourth and final level is “comprehension,” which focuses on the person’s ability to understand the meaning of the spoken message. All the levels are characterized by significant drill and practice as well as incorporating listening activities (Martin, & Clark, 2009). For effective auditory training auditory-verbal approach is the development of spoken language through audition by focusing on the use of residual/hearing through by use of amplification. During training activities, this is accomplished by having parents and specialist teachers eliminate the use of visual cues to promote reliance on listening alone. This approach has been used extensively with children by way of one-on-one therapy and family-centred teaching activities.
designed to facilitate the early, consistent, and successful use of amplification (Bellis, 2003).

2.2.2 Articulation Training

The type of communication disorder determines to what extent the characteristics that listeners ascribe to a person. A man who has a frontal lisp (who substitutes /the/ for /s/), for example, is more likely to be viewed as feminine than one who speaks with whistling /s/. How a person reacts to his or her disorders influences how listeners will react to it. Sensing that the person is embarrassed or ashamed, listeners are likely to ascribe more negative personality characteristics to him or her than they would otherwise (Silverman, 1995). Having abnormal speech, language or hearing can influence one’s self-concept. It can make one dislike himself/herself, makes one to be unhappy, depressed, overly sensitive, frustrated, suicidal, embarrassed, pessimistic, emotionally unstable, defensive, introverted, frightened, or tense. Liking oneself is a necessary condition for developing and maintaining relationship with others that are both enjoyable and beneficial (Anderson, 2003).

Augmentation of a learner with HI natural communication abilities by speech training strategies should enable the learner to communicate adequately (Silverman, 1995). The specialist teacher would have to identify/assess) the learner’s needs in order to determine what strategy should be put in place to develop, eliminate or modify to suit those needs. Specialist teacher should train learners with hearing impairments on the vowels and the consonants. Vowels and consonants differ primarily in the extent of constriction in the oral cavity when the sound is produced. For sounds /t/ and /d/, the constriction occurs when the tongue strikes against the alveolar /m/, /b/ and /p/,
constriction occurs when the bottom lips press together. To articulate sound /h/, the constriction occurs in the glottal area near the vocal folds (Borden & Harris 2007).

Articulation of a deaf child may be the most evident manifestation of his or her disability. Many children with HI have speech usually rated quite intelligible (Quigley & King, 1981). Certain classes for sounds (especially high-frequency sibilants and less visible phonemes) are likely to be omitted or misarticulated. Sounds at the ends of words and those embedded in constant clusters are also likely to be missed by the learners with HI. Speech intelligibility in learners with HI appears to be predictable on the basis of the severity and configuration of the learners hearing loss (Wolk & Schildruthe, 1986).

2.2.3 Individual Speech Training

Persons who are deaf sometimes are hypenatal (Peter-Falzone et al., 2001)There is nothing wrong with their veloplarynged sphincters, but because they cannot hear the hypsernasality in their speech, this, they may substitute nasal consonants - /m/ /n/ and /b/ - for some other consonants, such as /bl/, /d/, and /g/. They may also nasalize some vowels. Language therapy at the Special Needs Education institutions implies four themes. Articulation of vowels and consonants, Intonation, Modulation and rhythm and Individual therapy. The learners with HI use a workbook that contains phonemes and pictures to practise. They also use mirrors, large posters with drawings that illustrate situations, concepts, phrases with intonation marks, coloured cards which are used to define gender and the point in times. Most of the materials are created by the specialist teachers themselves to support a specific task that the class has to do. The speech and language training should begin with the vowels as they are
easier to produce, even though the /l/ and the /el/ can be difficult to distinguish. The
specialist teacher (s) should keep a personalized registry of each learner with HI, their
practice sessions, success rate and errors when pronouncing vowels. Mainly the
articulators, teeth, lips, tongue, vocal cords, palate nose and jaw interact to produce
all the sounds in human speech. These sounds can be classified according to the
positions of the articulators, points of articulation or according to the way these
sounds are produced and the articulator that obstructs the air coming from the lungs.

Analysis of various speech inventories reveals a consistent pattern of consonant
production. Generally, learners with HI tend to produce front consonants /b,p,m,w/
more often than back consonants namely /g,k,h/, probably because the front
consonants are more visible for lip-reading. The more commonly observed speech
errors include: confusion of the voiced-voiceless distinction (e.g /b/ confused with
/p/); substitutions of one consonant for another; inappropriate nasality; difficulty in
producing consonant clusters (e.g “spr” in “spring”); and, omission of word-initial
and word final consonants. Some prelingually, profoundly deaf individuals do
achieve intelligible speech, but that achievement is typically the result of prolonged
individual speech training with a skilled specialist teacher. The individual who
receives speech communication through the somathetic channel, have achieved
intelligible speech despite profound hearing impairment have served as “existence
proofs” in justifying the implementation of various technologies for speech training
(Bragesh, 1982).
2.2.4 Group Speech Training
According to the statistics from Special Education Department, USA in 1979 work started for the rehabilitation of the deaf speech based on analogue speech processing specifically for the best use of hearing capabilities for a learner with hearing impairment in Gallaudet state University. With intensive auditory and speech training, learners with hearing impairments are equipped with basic skills to prepare for transition or integration to future inclusion. This speech training targets learners who are hard of hearing and to strengthen their speech abilities and communication skills. Social, physical and cognitive skills training are crucial part of group speech training programme. Learners with HI are encouraged to practice speech and language into their daily experiences through various activities such as role play, morning physical exercise, observing, rhythm and pattern in terms of different sound discrimination. Its main aim is to strengthen learners with HI abilities of speech, comprehension, expression and intonation.

2.3 Development of Education of Learners with Hearing Impairments
On the African scene, Ramson (1992) at the 17th World Congress of Rehabilitation International (RI) held in Nairobi, Kenya, states that compared to regions of the world, the state of general rehabilitation programmes, facilitation, services and opportunities for the individuals with disabilities in the African Continent is inferior, inadequate and unacceptable. He further explains that everywhere in Africa people with disabilities continue to be among the least educated, the poorest and the most marginalized members of the population. However, many African countries such as Angola, Kenya, Uganda, Zambia and Zimbabwe are trying to provide greater
assistance to individuals with disabilities especially in the rural areas through the establishment of community based rehabilitation programmes.

People with HI have been viewed from different perspectives. Levison (1981) states that:

The problem of the child who is HI from birth is quite different from that of the man or woman who has become completely deafened after school age or in adult life. Usually for the ‘hard of hearing’ person, deafness develops slowly over the years… and therefore he or she may have developed speech. However, for all of them the handicap is the same – the handicap of the silent world, the difficult of communicating with the hearing and speaking world.

The child who gets hearing impairments at a later age will have acquired speech and language as compared to the one who was born deaf. Research by Quigley and King (1981) reveals that pupils with hearing impairments have difficulty in acquiring adequate reading skills. This was attributed in part, to inadequate language development. Quigley, power and steinkamp, (1977) show that the average 18 year old student cannot understand or use any of the syntactic structure, sentence patterns that the average 10 year old hearing pupil understands and uses with ease thus the need to teach speech and language to the learners with HI. A teacher quoted in Mundi (2009) posits that some children who are admitted to special schools lose speech. If only these children were trained in speech and language adequately then their speech and language would have improved instead of losing it. Early identification and intervention are important in reducing the impact of disability later in life. There is need for full accurate assessment and clear referral system to ensure that learners are placed in an appropriate programme (Maneno, 2008).
African societies hold strong beliefs about HI which results in rejection, pity denial as well as being burdens, dependants on their families which limit the access to education. Such beliefs can lead to abuse, neglect, abandonment and deaf children’s potential to contribute to the development of African nation is dismissed (Kiyaga & Moores, 2003 in Nortey, 2009). Alade (2003) points out that the development of education for the learners with HI in Kenya could be traced back to the establishment of Kenya Society for Deaf Children in 1958. The first special unit for learners with HI was Aga Khan established in 1958 followed by Dagoretti Unit for the Deaf started in 1960, and Aga Khan Unit for the HI in Nairobi was established. Sahaya International Project (2003) reveals that the total population in Kenya was 30,669,000 in 2001 with an initial estimate of 300,000 to 625,000 of the population representing all people who are deaf. Majority of the learners with HI are drawn from schools, units and the vocational programmes for HI.

This implies that over 90% of children with handicaps are either at home or in regular schools with little or no specialized assistance. The immediate consequences of deafness is a breakdown in communication whereby the communicative function needs to be either initiated or restored through speech and language training strategies. Hence speech and language training, promoting not only a more traditional psychological empowerment, but also a community one which should primarily focus on the removal of communication barriers (Munoz & Ruiz, 2000).

In Kenya, the development of education for learners with HI has followed a similar trend as in the industrialized countries, starting with the emphasis on speech and language then moving to manual communication. Since 44% of Kenya’s population
is aged between 0-15 years; it is estimated that 1.3 million aged between 0-19 years have disabilities (National Development Plan 2002-2003). The Kenya Task Force of (2003) collected enrolment data from Special Schools and units integrated programmes, DEOs offices, MoEST headquarters and EARC. It was found that there are 26,885 learners with special needs, 15,129 boys and 11,756 girls. This population included all the categories of learners with hearing impairment. According to Kenya Society for Deaf Children (KSDC) report on the study of technical and adaptive aids (1999), rehabilitation of pupils with hearing impairment started after the Second World War in 1958, when Elizabeth Couldrey, a speech therapist resident in Kenya was asked to start a free clinic in what was then King George VI Hospital (Now Kenyatta National Hospital). This was to help the deaf and those with speech disorders. Besides activities performed at the clinic were assessment of pupils with hearing impairments, prescription and fitting of hearing devices and speech and language therapy.

As children progress through school, the gaps between typical and a typical hearing tend to widen, particularly when there is lack of appropriate management, children with bilateral mild to moderate HI, on average are one to four grade levels less than their peers with normal hearing (American Speech-Language Hearing Association, 1990). A study carried out by Maneno (2008) on identification of children with speech disorders in primary schools concurs with the work that was happening at Kenyatta National Hospital. Education for the “deaf” as it was known, commenced in Kenya in 1961 and was under the auspices of various religious bodies. The education provided attempted to cover all ages and severity of HI in the same school and to some extent in the classrooms. This education policy emphasized on specialist

The report followed Gachathi Report of 1976 whose intention as far as special education was concerned had to make education play a major role in enabling persons with HI to communicate and become useful citizens. The introduction of 8.4.4 system of education prompted schools for pupils with HI to prepare their pupils for Kenya Certificate of Primary Examination (KCPE) but the new 8-4-4 syllabus was too demanding to allow teachers to teach specialist subjects which are pre-requisite to speech and language development among pupils with HI. Teachers then stopped using the provisional curriculum and guidelines formerly designed for pupils with HI schools due to workload. Effective oral communication would raise the level of social and moral understanding of learners with HI and enable them to compete equally within the existing educational and employment opportunities.

The Taskforce of 2003 also observed that the local organizations for persons with disabilities such as KSDC and KNAD have played a leading role in supporting the government’s effort in the provision of SNE or in supporting the affected children and their parents. The organizations are also on the forefront in carrying out lobbying and advocacy activities. Republic of Kenya (2002) indicates re-organization of the syllabus to ensure that curriculum implementation is achieved and the cost of
education is manageable. The Government of Kenya has achieved this through the establishment of various education commissions, taskforces and committees over the years aimed at surveying and investigating the existing education systems. Those committees, and task force recommendations offer advice to the government in formulating the nation’s education philosophy, policies and objectives. The researcher observes that little or no serious efforts has been put in place towards speech training skills in educating the learners with HI. The Persons with Disabilities Act, 2003 and the new constitution which was promulgated on 4th August 2010 grants rights to persons with disabilities on the key areas of life, namely; rights to appropriate education, equity, employment, accessibility, inheritance, marriage among others.

Teachers are an important resource in the teaching/learning process and their training and utilization therefore requires critical considerations. The current programme for teacher education aims at providing qualified teachers by developing communication skills, professional attitudes and values that equip them with the knowledge and ability to identify and develop educational needs of the child, (GoK 2003). Teachers therefore, require professional training in special needs education. According to Sessional Paper No. 5, teachers need to constantly enhance their knowledge by having additional training within their field of specialization to provide effective teaching and learning programmes to children with special needs. Teacher training in SNE forms the base of the teaching profession of pupils with special needs and which has to be done professionally to achieve its objectives (Kirk., 1997). Thus, the specialized curriculum in the HI course, especially the KISE regular diploma programme teachers also undertake an interdisciplinary component which includes child development,
educational psychology, educational assessment and resource services, curriculum development and adaptation and other various courses. There is also the three months in-service certificate course for practising teachers in all areas of special needs education. Enhrenber and Brewer, (1994) argue that the amount of coursework teachers complete during their training correlates with their subsequent teaching performance and student achievement. (Gachathi, report (1976) posits commitment to the development of education and training as a human right for all Kenyans in accordance with the international conventions such as Education for All goals. The government is conscious of the fact that capacities and skills of staff at all levels within SNE should be commensurate with the tasks they perform. The success of SNE services and education depends on provision of specialized human and institutional capacity. SNE teachers, Moi and Maseno universities among others. It is estimated that in 2003, there were 4255 SNE teachers trained in Kenya against an estimated 1.8 million learners with SNE requirements(The Task Forcereport 2003). Currently, in most cases there are gaps between competencies and the responsibilities of staff who undertake provision of Special needs education. The MOE faces various challenges in respect to capacity building and human resource development, especially in SNE. There is lack of systems to provide adequate information and skills inventory to guide those who perform deployment functions in the ministry.

Historically, education of pupils with HI was among the earliest to receive attention from both governmental and Non-Governmental Organizations in Kenya. The Kenya Society for Deaf children (KSDC, 1990) was such a Non-Governmental Organization which first initiated education for pupils with HI. After independence, the government became active and development of the HI education has been rapid, (Yego, 1992).
Teacher training programmes for special education was started in order to meet the manpower needs for the established programmes for pupils with HI as well as other areas of handicaps. The first local course for teachers for the HI pupils was started in 1964 at Central Teachers College (The present Kenya Institute of Education) as a unit attached to the college. The unit was later moved to three different colleges between 1982 and 1986, Kagumo, Siriba and Kenya Institute of Special Education (KISE) (Yego, 1992).

According to the MoEST policy learners with HI should train on speech and language through group speech training skills especially lip reading the words and articulating the words correctly from a poem on either, a flower, a dog, birds with matching pictures (MoE draft, 2009).

2.4 Education Status of the Learners with Hearing Impairments in Machakos

In Machakos County, there is only one school for the learners with hearing impairments, which is Machakos School for the Deaf established in 1986. There is no limit for the deaf in Machakos County. Makueni County has only one school for the Deaf, namely Makongo special school for the Deaf. In 2011 Makongo started a secondary school. There are two units for the Deaf in Makueni County, namely; Wee and Kakuswi. Machakos School is one of the oldest special schools for the learners with HI that was used as a pilot school for Total communication in 1988 before it was implemented in the schools for learners with HI in Kenya. According to Kenya Population and Housing Census 2009, there were 728 males with hearing impairments and 919 females making a total of 1,647 in Machakos County
2.5 Parental Support In Language Acquisition For Learners with HI

Stockwell, (2000) argues that one of the greatest needs of parents is to develop appropriate communication strategies with their children who are deaf. Without appropriate communication, there is a big breakdown that when a child has an issue to communicate, it would be difficult to share it with the parents. Parental understanding and communicating with their children with HI build them socially, morally and even spiritually. Material help is necessary for instance when they need writing materials and other academic support then, they strongly rely on language which is very crucial.


“I think if I look at the children who have done well; it gives back to the family. I do not think the school can even replace the family. Most of the students who do very well, have a very supportive family. Families that have good communication whether it is oral, signed English or sign language succeed.”

Stockwell, (2000) backs the above statement by arguing that one of the greatest needs for parents is to develop appropriate communication, when a child has an issue, he or she cannot let the parents know. Parental personal involvement is crucial especially in training the child with HI use speech sounds to improve his or her speech skills; hence a parent is paramount in speech training techniques back at home for the learner with HI. Parental method is based on the natural method whereby normally hearing children learn to speak in their own homes. Essentially, it consists of requiring all who come in contact with the deaf child to speak carefully to him or her about the things that seem interesting to him or her at a particular time. Speakers make sure that the child is watching their lips before they begin to speak. Excellent opportunities for providing this language experience are afforded during the daily routines at home and at school. Giving a wealth of experience of words and phrases
in these everyday situations, requires energy, forethought and tact as well as a keen appreciation that has interested the child.

Quigley and Frisina (1961) cited in Kirk (1997), conducted an experiment matching 120 residential school children with 120 children living at home (day) but attending the same residential schools. The day-school pupils were found to be superior in speech and speech reading as a result of parental support in speech acquisition and speech enhancement. Families and teachers struggle to find appropriate methods for improving language and literacy for students with hearing loss whose families do not use English as their primary language, educational opportunities and outcomes look even bleaker (Walker-Vann, 1998). He continues to posit that partnerships can and should involve relationships between professionals and other family members such as fathers, grandparents, brothers and sisters and even close family friends each of these people can support and enhance the educational outcomes for students with exceptionalities (Turnbu, 2007).

It is important for school personnel to engage parents in school activities where they are willing to participate and use this as a basis for future programming and support. The National Disability Policy of 2006 asserts that one of the main objectives of the SNE policy is to enhance parental and community participation in education of children with special needs. Early Hearing Loss Detection and Intervention (EDHI) programme found 5 to 6 infants per 1,000 children as born with hearing loss (Center for Disease Control and Prevention, 2001). Estimates from research conducted in the last 2 decades suggest that about 15% of school children have a hearing loss that is educationally significant. Currently, in American schools about 72,000 students
between the ages of 6 and 21 receive specific educational services solely for hearing loss or deafness (Kauffman & Pullen, 2009). More than 80% of children with hearing loss are born to parents with normal hearing. A study conducted by the Gallaudet Research Institute (2006) of 37,352 hard-of-hearing children ranging in age from 1-18 years showed that for 28,498 of the children, both parents were hearing; less 4% of the children had two parents with HI. Not surprisingly then that many parents of children with hearing loss do not link their families with the community of HI because they themselves are part of the hearing society. Children and youth who are HI, at least 26% have family members who regularly sign; 69% have family members who do not sign (Gallaudet Research Institute, 2001). Parents with normal hearing often focus on integrating their children into the mainstream oral community. Many of these children learn to listen and speak with the use of assistive technology.

Most affected are the children with HI born of hearing parents, since they typically grow up in linguistically impoverished surrounding due to the inability of the parents to use signs (Goldin-Meadow, 1999). The Constitution of Kenya of 2010 (Republic of Kenya, 2010) under the Bill of Rights, Section 54, sub-section (d) states that a person with disability is entitled to use sign language or other appropriate means of communication. With the above mentioned rights, a study that attempts to analyse the reality on the ground is vital especially to speech and language training to learners with HI. Parental guidance and counseling services include: parents meetings, workshops, seminars, parent group and home visit parent education and involvement are highly emphasized because they initiate and maintain speech and language training when the learners with HI are at home. The learners with HI need a lot of training in group speech in order to perceive speech sounds correctly and make
meaningful discriminations of speech with the help of hearing aids and cochlear implants (The Kenya Task force, of 2003).

2.7 Summary

Literature reviewed has focused on history of Education of the learners with HI which revealed that many issues and (Evans, 2000). Other past studies focus on global trends on the education of learners with hearing impairment especially on communication disorders during an international Cluttering Association Conference held in Bulgaria in May, (2007) revealed that there was need to increase public and professional awareness with especially more effective treatments had to be established through speech and language training skills. Reviewed literature has also focused on development of education a child with HI in Kenya, which revealed that some children were admitted in the special schools for HI but with time the speech disappeared; thus if these learners with HI were trained in speech and language skills their speech could have been maintained and improved hence the need to do the study.

Reviewed studies also focused on parental support to the learners with HI in speech and language acquisition (Stockwell, 2000) and (Turnbull 2007). National disability policy of 2006, revealed that one of the main objectives of the SNE policy is to enhance parents’ families and community participation, however, parents have failed to encourage children with HI leaving out speech and language training and thus the focus of this study. None of the studies known here in Kenya to the researcher has focused on speech and language training strategies used by teachers in educating learners with HI which is the main focus of this current research.
CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

3.0 Introduction
This chapter presents the research design, the location of the study, variables, target population, sample size and sampling technique, data collection instruments, pilot study, validity of the instruments, reliability of the instruments and data collection techniques. Data organization, data analysis, logistical and ethical considerations are also presented.

3.1 Research Design
The research design was a case study which employed both quantitative and qualitative approaches (Creswell 2003). The approaches are valuable in that they strengthen one another Good (1963), cited by Odeny (2007), outlined the purpose of descriptive design as that which secures evidence concerning all existing situations or concurrent conditions, identifies standards or norms with which to compare present conditions in order to plan how to take the next step and also where we are and where we are heading to.

The researcher explored all the specialist speech training methods that the teachers used to teach speech to learners with H.I in order to enhance learners with speech and language acquisition skills.

3.2 Location of the Study
This study was conducted in Machakos School for the Deaf in Machakos County in Eastern Province of Kenya. Machakos School is situated within Machakos town; it
is about 78km from Nairobi town. The school was selected because it is was piloted in 1986 for total communication in the history of special institution development in Kenya (MOEST, 2008).

3.2.1 Variables

(i) The independent variables of the study were availability of equipment and facilities, assessment of speech readiness, parental involvement, professional specialized qualifications/experiences, speech and language training methods.

(ii) The speech and language acquisition skills of learners with HI were dependent variables.

3.3 Target Population

The study targeted the teaching staff and the parents in Machakos School for the Deaf. These were; The headteacher, 22 teachers, 206 learners with HI, and and 200 parents of learners with HI. Therefore, the target population comprised of 429 subjects.

**Table 3.1: Target population**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Population</th>
<th>Percentage of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learners with HI</td>
<td>206</td>
<td>48</td>
</tr>
<tr>
<td>Teachers of standard 2 and 5</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Head teacher</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Parents of learners with HI in standard 2 and 5</td>
<td>200</td>
<td>47</td>
</tr>
<tr>
<td>Total number</td>
<td>429</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source: Researcher*

3.4 Sampling Techniques and Sample Size

The researcher visited the headteacher on the second week of June 2011 and requested for an appointment to meet the parents of the learners with HI in standard 2
and 5. The headteacher planned for the researcher to meet parents on the school’s academic day. On the material day, the researcher briefed the parents of the learners with HI on the matter and took them through Focus Group Discussion (FGD) interview.

The researcher used purposive sampling techniques, to select a reliable sample for the study (Kombo and Tromp, 2006). The Purposive sampling was appropriate since the researcher targeted learners with HI, parents who had learners with HI and those teachers who trained speech and language to learners with HI in standard 2 and 5 of Machakos School for the Deaf. The respondents co-operated and gave necessary information in relation to the study.

### 3.4.1 Sample Size

Machakos School was selected purposively, where the headteacher was chosen on the basis of administrative responsibility, teachers were chosen from classes 2 and 5. The sample size consisted of a total of forty three (43) learners with HI from standard 5 who aged between 7-18 years, twenty five (25) learners with HI from standard two (2) and eighteen (18) learners with HI from classes five (5). Forty three (43) parents who had learners with HI in classes two (2) and five (5) were purposively selected for the study. The total sample was comprised of 89 respondents.

**Table 3.2: Sample size**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Population</th>
<th>Percentage of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learners with HI</td>
<td>43</td>
<td>48</td>
</tr>
<tr>
<td>Teachers of standard 2 and 5</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Head teacher</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Parents of learners with HI in standard 2 and 5</td>
<td>43</td>
<td>48</td>
</tr>
<tr>
<td>Total number</td>
<td>89</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source: Researcher*
3.5 Data Collection Instruments

3.5.1 Interview Guide for the Headteacher

Interview guide was prepared to gather data from the headteacher of Machakos school for the Deaf. The researcher carried out the interviews using English and Kikamba. “Kikamba” language is the local language of the natives of Machakos County which enabled better communication and understanding with the help of an assistant researcher who monitored the recordings of a video tape recorder. An interview guide was selected to enable the researcher to obtain in-depth information from the respondents. It contained open-ended questions and had a total of 8 questions for the headteacher to respond to.

3.5.2 Interview Guide for Teachers of Standard Two (2) and Five (5)

An interview guide was prepared to gather data from standard two (2) and standard five (5) teachers of Machakos school for the Deaf. The researcher used English and ‘Kikamba’ for interviews. It was used to obtain in-depth information from the respondents. It contained open-ended questions and had a total of 8 questions for the teacher to respond to.

3.5.3 Questionnaire for Learners with HI in Standard Two (2) and Five (5)

A questionnaire is a research instrument that gathers data over a large sample (Kombo & Tromp, 2006). A questionnaire was prepared and used to gather information from the learners of classes 2 and 5 with HI. The questionnaires had both closed and open-ended questions.
### 3.5.4 Focus Group Discussion Guide

In this study, data collection was also done through Focus Group Discussion (FGD). The method involved questioning within a group interaction. The hallmark of FGDs is the explicit use of the group to interaction produce data and insights that would be less accessible without the interaction found in a group (Morgan, 1988).

Prior arrangements were made before the actual FGD session with brief and clear information to the parents for the purpose of preparedness. Parents of learners with HI from standard two (2) and five (5) were put in four groups of ten members to make a total of forty (40) parents, then the remaining three parents were evenly distributed to three groups consisting of eleven parents each whereas one group had ten parents making a total of 43 parents. Focus group schedule was prepared to generate data from the expected discussions from parents of the learners with HI. The interview guide had a total of 12 questions for parents to respond to.

### 3.6 Pilot Study

Pilot Study involved a small-scale testing of the procedures that the researcher planned to use in the study. Its purpose was to ascertain whether the instruments are clear and dependable. The researcher conducted a pilot study at Kambui School for the Deaf. The institution is situated within Kiambu County of Githunguri Division along Kwamaiko-Ruiru road, which is approximately 1 hour drive from Thika town. Pilot study enabled the researcher to detect any problems in the administration of the research instruments. The population in the pilot study consisted of one headteacher and two assistant teachers who teach standard 2 and 5. The procedure used in piloting
was the same as the one used in the actual study. Data was collected using questionnaire, FGD and interview guide.

3.6.1 Validity of the Instruments

An instrument is said to be valid if it measures what it is designed to measure (Orodho, 2008). In this study, two lecturers from the Department of Special Education were requested to assess the relevance of the content used in the interview guide, questionnaires and Focus Group Discussions guide. The two experts assessed the instruments together and gave feedback to the researcher who consolidated corrections given about the instruments of the study. Content validity was used to indicate the degree to which the instruments measure and what they were supposed to measure. It was a measure of the degree to which data collected using a particular instrument represented the content that the test was designed to measure. Opinions of experts including the researcher’s supervisors were sought regarding whether or not the items in the instruments represented the elements of study.

3.6.2 Reliability of the Instruments

According to Kombo and Tromp (2006), reliability is a consistency of an instrument to yield the same results once used. Reliability in this study was done using test-re-test method. Any item that did not generate the desired response was adjusted or removed.

3.7 Data Collection Techniques

Data was collected using interview guide, questionnaires and Focus Group Discussions.
3.7.1 Interview Guide

The researcher visited the school and created rapport with the headteacher and teachers for standard two (2) and five (5). The researcher administered an interview guide to the headteacher and teachers for standard two and five. During the actual interview day, the researcher used a tape recorder to gather information which was later transcribed.

3.7.2 Questionnaire

The questionnaires had both open-ended and closed-ended items. They were administered to the standard two (2) and standard five (5) learners with HI by the researcher to assist them in filling the questionnaires and collected them the same day.

3.7.3 Focus Group Discussion for Parents of Learners with HI

The FGD is anticipated to yield more information since it’s an open discussion. The FGD had four groups each with ten members. The research assistant had a video tape recorder which recorded responses from parents of learners with HI of both standard two (2) and five (5) respectively.

3.8. Data Analysis

The quantitative data was categorized, edited, coded and computed through descriptive statistics such as frequency, percentages, pie charts and graphs. The statistical package for social sciences version 21 was used for descriptive analysis. Qualitative data was analyzed according to the themes of the study which were: speech and language strategies used by teachers in training learners with HI. The researcher organized all the recorded information in order to make sense of themes
that generated and made notes on the same. The researcher transcribed all information that was tape-recorded and then organized the manuscripts into themes and pursued to get an overall “sense” of the data.

### 3.9 Logistical and Ethical Considerations

The researcher obtained a letter from the Dean of Graduate School addressed to the Ministry of Education which sought authority to conduct the research: After the permission from the Ministry, the researcher proceeded to the Kiambu District Education officer to seek permission before visiting the pilot school. Upon a successful pilot study, the researcher proceeded to the Machakos District Education Officer to seek permission for the main study at Machakos School for the Deaf. The researcher assured the respondents that their responses would be kept confidential. They were also assured that findings of the study would be shared with them upon completion of the research.

### 3.10 Summary

The chapter highlighted on research design, description of variables, location of the study, target population, sampling techniques and sample size, instruments, pilot study, validity and reliability of instruments, data collection techniques and logistical consideration.
CHAPTER FOUR
DATA PRESENTATION, ANALYSIS OF RESULTS AND DISCUSSION.

4.0 Introduction

The purpose of this study was to analyse the strategies used in teaching speech and language to learners with HI. The study was conducted in Machakos School for the Deaf. This chapter focused on demographic information, teachers professional qualifications, strategies used in teaching speech and languages to learners with HI, assessment for speech and language readiness facilities for teaching speech, parents role in teaching speech and language and challenges faced by teachers and headtechers.

4.1 Description and Characteristics of Respondents

The information regarding learners with HI demographic data is summarized as follows: This data was aimed at finding out the gender of respondents. They were organized in two categories male and female and learners were to tick the appropriate gender. The responses are shown in the table below.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Pupils</th>
<th>Teachers</th>
<th>Headteacher</th>
<th>Parents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Male</td>
<td>17</td>
<td>41.5</td>
<td>1</td>
<td>50.0</td>
</tr>
<tr>
<td>Female</td>
<td>24</td>
<td>58.5</td>
<td>1</td>
<td>50.0</td>
</tr>
<tr>
<td>Total</td>
<td>41</td>
<td>100.0</td>
<td>2</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The study required the respondents to indicate their gender. The data obtained revealed gender disparity in favour of females. There were 24(58.5%) for pupils. There were more females than males. Males were 17(51.1%). For the teachers there was one female which is 1(50%) whereas there was one male teacher 1(50%). The
headteacher was 1(100%). Table 4.1 shows that pupils comprised majority of the respondents in the study as compared to other respondents. The female respondents were more in the study compared to their male counterparts whereas 58.5 per cent were girls compared to 41.5 per cent boys while the parents 77.1 per cent were female and 22.9 per cent were male. The findings showed that there were more learners who were girls than boys as well, the results indicated that more mothers participated in the study with 77% where as fathers were the minority with 22.9%.

4.1.2 Age bracket of Respondents

The age bracket of teachers and parents was sought and the responses are as below:

Table 4.2 Age bracket of respondents

<table>
<thead>
<tr>
<th>Respondent Category</th>
<th>Teacher</th>
<th>Head Teacher</th>
<th>Parent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age bracket</td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>20-30 years</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>31-40 years</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>41-50 years</td>
<td>2</td>
<td>100.0</td>
<td>1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>100.0</td>
<td>1</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Tables 4.1, 2 represents the analysis of the age brackets of teachers, headteacher and parents represented in the study. The headteacher and teachers were aged between 41-50 years were (100%). The parents had an almost equal representation in all the age brackets 10(28.6%) were aged 20-30 years, 12(34.3%) were aged 31-40 and 13(37.3%) 1 per cent were aged between 41-50 years.
4.1.3: Demographic Information for Parents

Table 4.3 Parents occupation

<table>
<thead>
<tr>
<th>Occupation</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmer</td>
<td>25</td>
<td>73.5</td>
</tr>
<tr>
<td>Housewives</td>
<td>6</td>
<td>17.6</td>
</tr>
<tr>
<td>Teachers</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>Industries</td>
<td>2</td>
<td>6.0</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td>100.0</td>
</tr>
</tbody>
</table>

From the findings of the focus group discussion majority of the parents 25 (73.5%) were farmers, while 6(17.6%) were housewives and only 2(6%) worked in the industries yet only one (2.9%) worked as a teacher. This concurs with the earlier findings on Education Level of parents where majority of the parents 17 (48.6) had primary level education, and only a few 6(17.1) had attained diploma level.

4.2 Parents’, Teachers’ and Headteachers’ Professional Qualification

Table 4.4 Respondents professional qualifications

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Parents</th>
<th>Teachers</th>
<th>Headteacher</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>M</td>
<td>F</td>
<td>%</td>
<td>F</td>
</tr>
<tr>
<td>Primary Level</td>
<td>4</td>
<td>11.4</td>
<td>13</td>
</tr>
<tr>
<td>Secondary</td>
<td>1</td>
<td>2.9</td>
<td>11</td>
</tr>
<tr>
<td>Diploma</td>
<td>3</td>
<td>8.6</td>
<td>3</td>
</tr>
<tr>
<td>Degree</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Masters Degree</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Results from Table 4.3 indicate that a higher percentage of the parents of learners with HI had primary level education at 17(48.6%) per cent while a few had secondary education 12(34.3%) and only 6(17.1%) had college education. With reference to
special skills to support the HI learners most parents noted they attended sign
language seminars and workshops at Machakos School for the Deaf.

The experience and qualifications of headteacher and teachers in SNE are tabulated
below:

**Table 4.5 Special Needs Training Obtained.**

<table>
<thead>
<tr>
<th>Special Training</th>
<th>Teachers</th>
<th>Headteacher</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>3 months certificate</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>Diploma</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Degree</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The qualification, experience of headteachers, and teachers in special needs training
were of major concern. The two teachers, and headteachers noted that they had a
teaching experience of over ten years. They also stated that they had a special needs
training. The teachers for standard 2 and 5 had a 3 months certificate in Special Needs
Education while the headteacher had up to degree level in Special Needs Education.

Responses from the interview also revealed that the headteacher had attended
workshops and had been exposed to SNE. This shows that the headteacher was more
equipped to deal with the special needs of the learners. However, the teachers who
take more time with learners were not well-equipped in SNE skills.

**Table 4.6 Speech Training Methods Taught in Teacher Training College**

<table>
<thead>
<tr>
<th></th>
<th>Use of Hand Analogy</th>
<th>Sound Articulation</th>
<th>Group speech</th>
<th>Auditory training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard two teacher</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Standard five teacher</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Table 4.4 represents the Speech Training Methods learnt by the sampled teachers of
standard two and five in the Training College. The standard five teacher did not admit
to have been taught Group speech Training which is not known whether he did not learn or he left out the method deliberately.

The results revealed that majority of the teachers who handled the learners with HI required adequate speech training skills and supervision. This was because the teachers did not adequately implement skills they learnt at the teacher training institutions especially the teacher for standard five in Machakos School for the Deaf.

The findings support Coway (1980) report that teachers need to constantly enhance their knowledge by having additional training within their field of specialization inorder to provide effective teaching and learning programmes to children with special needs. Further, the findings concur with the report by the Republic of Kenya (2003) which showed that 96.6% of teachers in regular primary school were trained; only 20% of the teachers were untrained to teach learners with special needs.

4.3 The Strategies used in Teaching Speech and Language To Learners with HI

The findings indicate that the strategies used include the use of specialist subjects as shown below:

Table 4.7 Specialist subject taught by teachers

<table>
<thead>
<tr>
<th>Specialist Subject Taught to Learners</th>
<th>Individual Speech Training</th>
<th>Group Speech Training</th>
<th>Auditory Training</th>
<th>Total Communication</th>
<th>Kenya Sign Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard two teacher</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Standard five Teacher</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>100</td>
<td>2</td>
<td>100</td>
<td>2</td>
</tr>
</tbody>
</table>
The teachers were asked to state the subjects they taught learners with hearing impairment. They cited that they taught all the subjects in the primary school curriculum. They added that they also taught the specialist subjects as shown in Table 4.5 above. As noted from the table, the teachers taught individual training methods, articulation training, use of hand analogy, group speech training and auditory training. The findings from the questionnaires also revealed that 100% of the teachers mostly used Kenyan sign language as well as total communication in teaching learners with HI.
Figure 4.1: Specialist subject learnt by standard two pupils

Majority of the Learners from Standard two 41(95.2%) noted they benefited from Articulation Training and Sign Language while all the learners 43(100 %) noted they benefited from Auditory Training. However, 95.2 per cent of the learners also noted they did not benefit from Group and Individual Speech Training. The learners further
noted that individual and group speech training was taught once a year by practising students from KISE. Hence, the need for teachers teaching the learners to be trained on group and individual speech training skills. There is contradicting data on the specialist subjects taught by the teachers and the subjects learners learned. The pupils’ questionnaires noted that they did not learn group and individual speech training while the teachers agreed that they did teach the course. Yet according to the timetable for standard five, none of the specialist subjects were plotted. Further the standard five teacher argued that he incorporated specialist subjects during English lessons which according to the researcher, there was not enough time to train and practise speech skills.

The findings from the study contradicts Martin and Clark (2009) who conducted a study on auditory training for learners with HI. They found out that all the levels of training are characterized by drill and practice as well as incorporating listening activities.

4.4 Assessment for Speech and Language Readiness for Learners with Hearing Impairments

4.4.1 Assessment by Parents

Most parents revealed that apart from taking their children to the assessment centre, they also continued using speech and local signs, as well as sign language. Some parents of learners with HI pointed out that they had learnt Kenyan sign language in seminars and workshops held in Machakos School for the Deaf hence they were able to continue communicating with their children with HI.
The findings are presented in Table 4.6.

**Table 4.8: Age of Assessment**

<table>
<thead>
<tr>
<th>Age Assessment was done</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 2 Years</td>
<td>4</td>
<td>11.4</td>
</tr>
<tr>
<td>2-3 years</td>
<td>14</td>
<td>40.0</td>
</tr>
<tr>
<td>3.5-5 years</td>
<td>6</td>
<td>17.1</td>
</tr>
<tr>
<td>After 5 years</td>
<td>11</td>
<td>31.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

From Table 4.6, a higher percentage of the parents 14(40.0%) took their children for assessment of the loss of hearing at the age of 2-3 years followed by 11(31.4%) after 5 years and those assessed after 3.5 -5 years were 6(17.1%). While the least percentage of parents observed their children at the age of below 2 years 4(11.4%). The parents noted that they discovered the children were not responding to cues, calls and others noted the children could not hear which prompted them to seek advice.

*Parent 1:* “...after two years and two months the house help used to complain the child doesn’t respond to cues, I took her to lions club to establish the problem at the age of 2yrs and 8months.” (personal communication July 15th 2011)

*Parent 7:* “...the child took long to start crawling, I would beat the child thinking that it was deliberate ... later I took the child for assessment at 7 years. The child was found to be HI.” (personal communication July 15th 2011)

*Parent 13:* “...the child started talking and at the age of 6 years he got sick ...stopped talking and was diagnosed and found HI.” (personal communication July 15th 2011)

From the focus group discussions the parents were also asked where the assessment of hearing was done, majority of the parents at 19(54.3%) indicated assessment was done in the hospital while 16(45.7%) per cent noted it was done in an Education Assessment and Resource Centre (EARC). The findings supports the report given by the National Institute for Deafness and Other Communication Disorders, (2003) which revealed that early identification and intervention are important in reducing the
impact of disability later in life and recommends full accurate assessment and clear referral system to ensure that learners are placed on an appropriate programme.

*Parent 1:* “... I first took the child to the Lions Club and later to an assessment centre in Mombasa where the child was found to be profoundly deaf.” *(personal communication July 15th 2011)*

*Parent 6:* “...I noticed that at the age 2 and 5 years the children could not respond to calls I took them to Kiambu hospital where they were diagnosed of deafness...” *(personal communication July 15th 2011)*

### 4.4.2 Assessment for speech and language by the Headteacher and teachers.

The teachers were asked how they assessed the learners with hearing impairment for speech readiness. The standard two teachers noted they used the vowels and the consonants while the standard five used the speech Kit as preferred by KISE. They also noted the learners sit for national examinations as other pupils. This was confirmed by the head teacher who noted that they assessed through the use of a speech kit.

On whether they did assessment on admission, the headteacher noted that there was no assessment centre in the school so they got learners with HI pupils through referrals from EARCs, Hospitals and individual parents countrywide.

*The headteacher* “...we look at the referral letter and the learners are called for an interview to find out the speech level and whether they have attended pre-school. In the interview the learners are given written work to find out their present level of performance.” *(personal communication July 11th 2012)*.

The headteacher noted that they also took into consideration the learner’s entry behaviour, age, whether the learner had basic sign language and whether the child vocalized at home. They used the sounds from vowels and asked the child to sign. He noted that most pupils did not have speech on admission. They assessed pupils using
teaching aids, such as toys mainly (to induce excitement) as well as learning materials for pupils in the pre-school and lower primary then gradually more complex activities such as drums, practical sounds and speech activities.

4.5 Facilities for Teaching Speech to Learners with HI

When asked the methods they used to teach learners with hearing impairment, one teacher mentioned that they use the speech Kit preferred by KISE while the others used Kenya Sign Language and Total Communication Methods.

The teachers were further asked the mode of communication used to give instructions to learners with HI. One hundred per cent of the teachers noted they mainly used the Total Communication and Kenya Sign Language to give instruction to learners with hearing impairments.

The findings on the study differed with Goldin-Meadow (1999) who posits that most affected are the children with HI born of hearing parents, since they typically grow up in linguistically impoverished surrounding due to the inability of the parents to use signs.

4.5.1 Facilities for teaching speech and language.

The study sought to establish speech and language equipment and facilities available in the school. The results were obtained from the teachers, questionnaires and headteachers interview schedule presented in table 4.7.
Table 4.9 Speech and language equipment and facilities

<table>
<thead>
<tr>
<th>Audiometers</th>
<th>Functional</th>
<th>Not Functional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Group hearing aid standard 2</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>2. Group hearing aid standard 5</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>3. Individual hearing aid standard 2</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>4. Individual hearing aid standard 5</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>5. Improvised sound proof room</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>6. Speech kits</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>7. Loop</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8. Total</td>
<td>8</td>
<td>41</td>
</tr>
</tbody>
</table>

The results revealed that there were about 49 equipment and facilities in the school but only 8 were functional. From the observation checklist, the researcher ascertained that the available facilities and equipment were individual hearing aids, improvised sound proof room, speech kit and loop induction system. They also revealed that there were 41 in number but only 8 were functional for use in teaching and learning processes.

The teachers noted that the audiometers and the group hearing aids were very efficient but most of them were broken down. They further noted that they mostly used the individual hearing aids. They also had improvised an assessment sound proof room in the school for screening and diagnosing the learners with HI and speech kits for sound discrimination. There was also loop induction system which supports learners with HI by amplifying sounds in the classroom whenever the teacher carries out the teaching/learning activity.

The findings of the study supports the report by Ramson (1992) on the 17th World congress of rehabilitation international (RI) held in Nairobi, Kenya which posits that compared to other regions of the world, the state of general rehabilitation
programmes, facilitation, services and opportunities for individuals with disabilities in African continent is inferior, inadequate and unacceptable.

4.6 Parents Role in Speech and Language Acquisition to Their Children with HI.

Figure 4.2: Mode of Communication Used by Parents at Home

Figure 4.2 shows that majority of the parents 24(70.5 %) used local sign language to communicate with their children, while 9(23%) used speech and sign and least percentage used Lip reading at 1(2.9%).

The parents were also asked on the communication modes they used at home and whether they continued communicating to their children using speech after realizing
that they had a hearing impairment. From the focus group discussions, parents noted they used local sign language such as pointing for example cups, cues and gestures, as well as lip reading. Similarly, some parents noted that apart from using the local signs they also continued with speech to an extent that the children could pronounce some words.

Parent 5: “I continued talking to the child…pointing emphasizes on some family members names and sometimes when you show her the object she gives the sign…” (personal communication, July 15th 2011)

Parent 12: “I use Local sign language..., later I look at the book the child has …try to sign from the book.” (Personal communication, July, 15th 2011)

Parent 27: “We continued speaking at home, the brothers and sisters really know how to communicate they speak at home and the boy could hear and speak some words like aah.” (Personal communication, July 15th 2011)

The findings support Stockwell, (2000) who asserts that the greatest duty for parents is to develop appropriate communication, when a child has an issue, he or she cannot let the parent know. Similarly, the finding agree with the report by Gallaudet Research Institute (2001) which posits that parents with normal hearing often focus on integrating children into mainstream oral community. Many of these children learn to listen and speak with the use of assistive technology. Hence it’s important for the parent to continue with speech in communicating to the children with hearing impairments.
4.6.1 Parents Role in Speech and Language Acquisition

The study sought to establish parental involvement in speech and language acquisition. The information was obtained from teachers' questionnaires and parents' focus group discussions as presented on Table 4.8.

Table 4.10 Parents role in speech and language acquisition

<table>
<thead>
<tr>
<th>Parents Activities</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation in classes</td>
<td>6</td>
<td>17.64</td>
</tr>
<tr>
<td>Assessment of books/CATs</td>
<td>8</td>
<td>23.52</td>
</tr>
<tr>
<td>Interest and career of learners with HI</td>
<td>6</td>
<td>17.64</td>
</tr>
<tr>
<td>Teachers advice to parents</td>
<td>14</td>
<td>41.17</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>34</td>
<td>100%</td>
</tr>
</tbody>
</table>

The parents' role was of major concern to the researcher because parent-teacher collaboration creates better conditions for learning. Teachers were asked whether they involved the parents of learners with HI in the learners' activities.

The teachers 2(100%) posited that they invited parents for open days or education day and parents were engaged with school activities. They further indicated that they engaged the parents with various activities such as observing their children with HI in a classroom situation, 6(17.6%) accessing their exercise books and merit lists for Continuous Assessment Tests (CATs), 8(23.5%) discussing the interests and career of the learners with HI 6(17.6%) and lastly, 14(41.2%) they advised the teachers on how to assist their children with homework during the holidays for the purpose of enhancing the concepts learnt at school to minimize forgetfulness. The findings support a report from National Disability Policy of 2006 which posits that one of the main objective policy of SNE is to enhance parental and community participation in education of children with special needs.
Further, the findings of this study concur with Snow, Barner, Chandler, Goodman and Hemphill, (1994) who carried out a study of school engagement of parents in school activities. They coined that it is important for school personnel to engage parents in school activities where they are willing to participate and use this as a basis for future programming and support.

4.7 Challenges Faced by the Headteacher and Teachers

4.7.1 Challenges Faced by Headteacher

The information gathered from the headteacher interview posted the following challenges:

- The headteacher noted that there were few schools for the deaf in the country resulting to overcrowding in the available schools. Machakos school is the only school catering for HI learners in Eastern Province. Much of the accommodation is done through units attached to regular schools. They lack specialists for assessing learners effectively. Only teachers offered to do the assessment in the school yet they were not specialists.

- Lack of qualified professionals. Only teachers offered to do the assessment in the school yet they were not professionals.

- The Ministry of Education’s role in these special needs institutions was minimal and the teachers’ feelings were that they were not advised accordingly thus leaving a gap. In this regard, a policy was not in place to give guidance to schools and teachers on how to appropriately assist learners with HI.
4.7.2 Challenges Faced by Teachers

The information gathered from the teachers’ questionnaires posted the following challenges:

- The school has only two teachers with a diploma in SNE, to cater for standard two and five learners, thus they have a heavy workload to cover.
- The teachers also noted that the repairs of the hearing aids were very expensive.

4.7.3 Challenges Faced by Parents

The information gathered from the parents focus group discussion revealed the following challenges:

- Parents inability to communicate adequately with their own children with HI due to lack of appropriate speech and language skills.
- Some parents are still at the denial stages hence the need for appropriate guidance/counselling services by SNE professionals at the Educational Assessment and Resource Centres (EARC). Currently, the personnel at the EARC centre are not qualified for the special needs assessment and supervision. This was revealed by the teachers and the administrator at Machakos School for the Deaf who revealed that the current personnel mostly refers mentally challenged learners to Machakos school for the deaf who write back to the assessment offers to consider re-assessment.
CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings, conclusions and recommendations of the study and areas of further research.

The purpose of this study was to analyze the strategies used in teaching speech and language; a case of Machakos School for the Deaf. The study focused on the following:

(i) What specialized qualifications do teachers possess to teach speech and language skills to learners with hearing impairment?

(ii) What are the strategies used in speech and language teaching for learners with hearing impairment?

(iii) What are the speech and language teaching facilities available in the school?

(iv) How is assessment of speech and language readiness for learners with hearing impairment performed?

(v) What role do parents of the children with hearing impairment play in speech and language acquisition?

(vi) What challenges do headteachers, teachers and parents face in training speech to learners with HI and the possible solutions?

5.2 Implications of the Findings

Due to Communication difficulties, learners with HI face challenges ranging from long periods of time spent on perceiving concepts to a lot of repetitions in classes
needed for them to assimilate the concepts taught at that level before they progress to the next class.

5.2.1 Summary of Findings

5.2.1.1 Professional Qualifications of Teachers Involved in Speech and Language Teaching of Learners with HI

With reference to teachers specialized qualification to teach speech and language to learners with HI, the findings from standard 2 and 5 teachers’ responses revealed that, both teachers had a 3 months certificate in SNE which means that they possess the basic skills but they need to further their studies in SNE to be abreast with the current technologies on the same. Another concern from the findings revealed that despite high qualifications that the headteacher had, there existed a gap in teaching of speech to learners with HI. The school administration should encourage the teachers to advance their Special Needs Education. The school administration and the Ministry of Education should organize workshops/seminars with the guest speakers to role play, model, advise, counsel and guide on possible careers for learners with HI.

5.2.1.2 The Assessment Performed to Establish Speech and Language Readiness

The study found that a significant number of teachers handling learners with HI had acquired skills in speech and language training. In this regard, they should identify and assist children with HI in acquiring speech and language skills, (Reddy,2004) stated that “teaching learners with speech and language challenges in school setting is both demanding due to increase of caseloads.” They state that “teachers’ responsibilities are multifarious, in the sense they should identify the learners with speech and language caseloads, assess the nature of the impairment to ascertain if they
are hard of hearing or deaf in order to plan for correct intervention strategies.” It was evident that majority of the teachers who handled the learners with HI required speech training skills and capacity building through refresh courses. This was because the teachers did not adequately implement skills they learnt at their training institutions especially the teacher of standard five in Machakos School for the Deaf.

5.2.1.3 Strategies Used in Training Speech and Language to Learners with HI

Responses from the interview also revealed that the head teachers were qualified in special education. However, the teachers had only undergone 3 months certificate course. The headteacher had attended workshops and was exposed to SNE. This shows that the headteacher was equipped to deal with the special needs of the learners. But the teachers who spend more time with learners were not well-equipped. Apart from the subjects in the primary school curriculum, the teachers as well taught the specialist subjects hence a heavy workload. These specialist subjects were Individual Training Methods, Group Speech Training, Auditory Training, American Sign Language and Kenya Sign Language.

5.2.1.4 Teaching Facilities for Speech and Language Available in the School

With reference to speech and language training facilities available at the school, the head teachers pointed out that the available facilities were audiometers, group speech hearing aids, individual hearing aids and improvised sound proof room. Most of the equipment are not in good condition since most have broken down. With reference to specific skills to support the HI learners many parents noted they attend sign language workshops/seminars at Machakos School for the deaf.
5.2.1.5 Parental Role/Involvement in Speech and Language Acquisition of their Children with HI

The parents’ role was of a major concern. The teachers were asked whether they involved the parents in the learners’ activities and what the parents did when they identified their children with a hearing impairment. Most parents noted that apart from taking their children to the assessment centre, they also continued using speech and local signs, as well as sign language. Some parents of learners with HI pointed out that they had learnt Kenyan sign language in seminars and workshops held in Machakos School for the Deaf hence they were able to communicate with their children effectively.

5.2.1.6 Challenges Faced by the Headteacher, Teachers and Parents

Another concern from the findings of the study reveal various challenges faced by the headteacher, teachers of standard 2 and 5 and the parents with learners in standard 2 and 5. The institution catering for learners with HI face insurmountable challenges such as lack of skillful trained specialist teachers and high pupil teacher ratio. Posting of specialist teachers to such institutions is still wanting and the teachers are overwhelmed with workload. Therefore, unless the teacher pupil ratio is checked, the learners with HI will always lag behind in academic performance.

It is through such related services that teachers could be effective in assisting learners with HI.
5.2.1.7 Solutions from the Headteacher

The solutions gathered from the Headteacher were;

- It was noted that standard two and five were overcrowded due to the fact that there were few schools for learners with HI hence the need to establish more schools to cater for the increasing numbers of learners with HI. In Machakos School for the Deaf, particularly standard two had 23 learners with HI where else standard 5 had 18 learners respectively. According to the government policy, it is advocated that 12 learners with HI should be taught by one teacher hence the contrast.

- Kenya National Examination Council (KNEC) to provide interpreters for clarity of instructions throughout the examination period.

- The government should put in place interpreters at all levels and in social settings to meet the needs of persons with HI to enable them to fit socially and benefit totally from their communities and compete equally in the world of work with their hearing counterparts.

5.2.1.8 Solutions from the Teachers

The solutions gathered from the teachers were;

- Teacher noted that there is need for Teacher’s Service Commission to employ more teachers to reduce teachers work load.

- There is need for the government through the relevant ministries to construct more schools for learners with HI to reduce overcrowding.

- The Government and NGO’s should assist in provision of specialized equipment and facilities to learners with HI as well as assist in repairing
broken equipments hence there is need for the government to step in and assist with funds.

- The Government through the Ministry of Education should provide appropriate assistive devices such as hearing aids, adequate teaching and learning materials.
- Specialists and paramedics to be attached to school to work as a team with the specialists teachers for intervention purposes.
- The teacher training colleges in Kenya especially for HI should train teachers to exploit all talents and skills apart from academic work in order to impart knowledge to the learners with HI.

5.2.1.9 Solutions from the Parents

The solutions gathered from the parents were;

- The Ministry of Education (M.o.E) should set forums, workshops and seminars for parents of learners with HI to be taught sign language and speech skills.
- The learners with HI, should be considered for bursaries just like their hearing counterparts which would be used to purchase hearing aids and fund for upkeep for special needs institutions.

5.3 Conclusion

It is apparent from the researcher’s observation that, many learners with HI had problems in articulating certain speech sounds. Articulation challenges normally arise from main articulators which are lips, teeth, alveolar ridge, hard pallet, velum, glottis and the tongue. It is also evident that the presence of hearing impairment impedes
speech articulation depending on the age at onset. The study found that most learners had articulation challenges. These findings concur with Wikipedia, the free encyclopedia (http://en.wikipedia.org/wiki/speech sound disorders). The study found that learners with HI were likely to continue facing the challenge of speech and language skills and lack corrective measures at school. This is because the trained specialist teachers were not applying skills they acquired at teacher training colleges in order to train learners with HI in the specialist subjects.

This was compounded by the fact that there is no clear educational policy that gives direction on how learners with HI should be assisted. The fact that learners with HI should sit for the same examination with the hearing counterparts at both Kenya Certificate of Primary Education and Kenya Certificate of Secondary Education summative examinations. The other issue that came up was that the workload was too demanding on both sides of learners with HI and the teachers who teach that, from the timetables in standard 2 and 5, no specialist subjects were catered for though they argued that they only incorporated specialist subjects during English lessons. The information was not reliable. The role of the Ministry of Education in these special needs institutions was minimal and the teachers’ suggestions were that they were not advised accordingly thus leaving a gap. In this regard, a policy was not in place to give guidance to schools and teachers on how to teach speech and language to learners with HI so as to assist them. Therefore, unless the teacher-pupil ratio, issue on professional teachers in SNE, adequate teaching learning materials, facilities and equipments, and wide syllabus coverage are checked, the learners with HI will always lag behind in academic performance.
It is through such services that teachers could be effective in assisting learners with HI. The study also concludes that children with HI require equal attention appropriate services, relevant equipment and facilities like Augmentative Alternative Communication (AAC) like their peers who have no specific learning problems. This was indicative of the fact that learners with HI were taken for medical attention and for educational assessment very late. It is in this context that learners with HI should be taken for early medical care services, educational assessment and intervention. Such measures would correct cases which would otherwise become chronic thereby becoming permanent causing serious learning problems and eventually poor performance and poor lives in the community.

The study also concludes that children with HI require equal attention appropriate services, relevant equipment and facilities like Argumentative Alternative Communication Device (AAC) like their peers who have no specific learning problems. This was indicative of the fact that learners with HI were taken for medical attention and for educational assessment very late. It is in this context that learners with HI should be taken for early medical care services, educational assessment and intervention. Such measures would correct cases which would otherwise become chronic thereby becoming permanent causing serious learning problems to learners with HI.

5.4 Recommendations

Based on the study results, the following recommendations for the various groups involved in addressing education issues affecting learners with HI are made:
The curriculum for teacher training college should infuse speech and language skills.

Parents/guardians of learners with HI should be advised by SNE teachers, officers to partially change attitudes and assist their children with HI to build their speech and language skills in order to enhance what teachers do at schools when the learners go home for holidays.

The Ministry of Education should post assessment officers at the District Assessment Centres who are highly qualified and conversant with the current technologies on speech and language.

The Ministry of Education should create intensive community awareness in special schools and units to inform the members on the current identification and intervention measures for children with hard of hearing and deafness.

There is need to introduce a more comprehensive speech therapy programmes in special schools and units for the deaf for proper identification and remediation of children with HI. This concurs with Ndurumo (1993) who states that the teacher or speech pathologist would do well to conduct an in-depth analysis of the child’s malarticulation and the specific position in a word and letters omitted, substituted or distorted.

It is paramount for medical personnel handling children with speech and language challenges to work hand in hand with teachers to adequately address the problem as a team.

It is recommended that the government should make curriculum flexible in terms of time frame to give the learners with HI more time for syllabus coverage, since they need mastery in one skill area before they progress to the next academic level.
• Learners with HI should also be considered for bursaries just like their hearing counterparts which would be used to purchase hearing aids and fund for upkeep in special needs institutions.

5.5 Areas of Further Research

• A study is required to identify major causes of hearing impairments in Kenya.

• A study is necessary to determine the effectiveness and competence of teachers in teaching learners with HI
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Appendix A

Interview Guide for Headteacher

This interview guide is intended to seek information on the speech training methods used by teachers to teach learners with hearing impairment. Please feel free and answer all the questions as accurate as possible. Note that the response you give here will NOT be in any way be used against you.

General Information

Date ________________  Time ______

1.1 Gender  Female □   Male □
1.2 What is your education level?
1.3 How long have you been in the teaching profession?
2.1 How do you admit learners with hearing impairment in your school?
2.2 On admission do you carryout speech/language assessment
2.3 In standard 2 & 5 how many learners are deaf/hard of hearing.
2.4 How do you assess learners with hearing impairment to establish their speech and language readiness
2.5 Do you keep merit lists for all the administered Continuous Assessment Tests for the last one year for standard 2 and 5?
2.6 In your training, were you exposed to a course dealing with Special Needs Education? Specify
2.7 Have you ever trained in Special Needs Education? If yes, For how long?

Thank you for your participation
Appendix B

Focus Group Discussion Guide for Parents of Learners with Hearing Impairments

Ground Rules

*Before we start, I would like to remind you that there is no right or wrong answers in this discussion. We are interested in knowing what each of you thinks, so please feel free to be frank and to share your point of view, regardless of whether you agree or disagree with what you hear? It is very important that we hear all your opinions.*

*You probably prefer that your comments should not be repeated to people outside of this group. Please treat others in the group as you want to be treated by NOT telling anyone about what you hear in this discussion today.*

Let’s start by going around the circle and having each person introduce himself/herself.

(Please answer the options appropriately)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Tick</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td></td>
</tr>
</tbody>
</table>

Section A: Background Information

1. Age bracket
   - (a) 20 - 30 years
   - (b) 31 – 40 years
   - (c) 41 – 50 years

2. Your occupation
3. What education level have you attained?
4. What type of disability does your son/daughter has?
5. In which standard is your son/daughter?
6. Was your son/daughter assessed to ascertain the degree of hearing loss?
7. At what age was your son/daughter assessed?
Section B: Focus Group Discussion Guide

Please tick your correct option

1. Which communication strategy do you use at home?
2. When your son/daughter was identified as hearing impaired case, did you continue communicating to him/her using speech?
3. Which strategy of speech and language acquisition do you use at home among the following:
   (i) Auditory skills
   (ii) Individualized speech skills
   (iii) Articulation skills
   (iv) Group discrimination
4. Do (es) your son (s) or daughter (s) use a hearing aid?
5. Who bought for your son (s) /daughter (s) the hearing aid?

Thank you for participating.
Appendix C

Questionnaire for Standard Five Learners with Hearing Impairments

This questionnaire is intended to seek information on the speech training methods used by teachers to teach learners with hearing impairment. Please answer all the questions as accurate as possible by ticking your correct choice or writing the correct information. Note that the response you give here will NOT be in any way be used against you.

SECTION A

General Information

1.1 Name of school ____________________________________________

1.2 Gender 
    Boy □ 
    Girl □

1.3 Which standard are you?

1.4 Who teaches you English language?
    Name of the teacher __________________________

1.5 Do you learn specialized subjects?
    Yes □ 
    No. □

1.6 Which specialist subjects do you learn?
    __________________________________________
    ________________________________
    ________________________________
    ________________________________

1.7 What specialized qualifications do teachers possess to teach speech and language skills to learners with hearing impairments?

1.8 Do you benefit from the speech training subjects? Yes □ 
    No □
Appendix D

Questionnaire for Standard Two Learners with Hearing Impairments

This questionnaire is intended to seek information on the speech training methods used by teachers to teach learners with hearing impairment. Please answer all the questions as accurate as possible by ticking your correct choice or writing the correct information. Note that the response you give here will NOT be in any way be used against you.

SECTION A

General Information

1.1 Name of institution ________________________________

1.2 Gender   Boy [ ]   Girl [ ]

1.3 Which class are you? __________________________

1.4 Who teaches you English language?
   Name of teacher __________________________

1.5 Do you learn specialist subjects
   Yes [ ]   No [ ]

1.6 Which speech specialist subjects do you learn in standard 2?
   (i) Articulation training [ ]
   (ii) Auditory training [ ]
   (iii) Individual speech training [ ]
   (iv) Group speech training [ ]
   (v) Sign language [ ]

1.7 Do you benefit from speech and language training subjects?
   Yes [ ]   No [ ]
Appendix E

Interview Guide for Standard Two and Five Teachers

This interview guide is intended to seek information on the speech training methods used by teachers to teach learners with hearing impairment. Please feel free and answer all the questions as accurate as possible. Note that the response you give here will NOT be used in any way against you.

SECTION ONE (BIO-DATA)

General Information

1. Gender
   - Male [ ]
   - Female [ ]

2. Age of the teacher
   - 20-30yrs [ ]
   - 31-40 [ ]
   - 41-50 [ ]
   - 51 and above [ ]
   (Tick appropriately).

3. Name of Institution
   - Location
     - District
     - Province
     - Type of School
       - Special Board Primary [ ]
       - Special Integrated Programme [ ]
       - Special Day Primary [ ]
       - Special Vocational training centre [ ]

4. Special Training obtained
   - 3months Certificate [ ]
   - Diploma Certificate [ ]
   - Degree Certificate [ ]
   - Masters Certificate [ ]

5. Teaching Experience in the school
   - 0-5 years [ ]
   - 6-10 years [ ]
   - 10 years and Above [ ]
   (Tick appropriately).

SECTION TWO

1. Which subjects do you teach the learners with hearing impairment?

2. Which mode of communication do you use to give instruction to learners with hearing impairment? (i) oralism (ii) manalism (S.L) (iii) total communication

3. a) Do you teach specialist subjects? Yes [ ] No [ ]
   b) If yes above, which specialists subjects do you teach? If no in question 3a above, give reasons
4. a) Do you teach specialist subjects to learners with hearing impairment?
   Yes ☐   No ☐
   b) If yes above in 4a which methods do you use to teach speech to learners with hearing impairment

5. How do you assess the learners with hearing impairment for speech readiness?

6. a) Were you trained on how to teach speech skills to learners with hearing impairment during your teacher training course? Yes ☐   No ☐
   b) If yes above, which speech training methods did you learn at the college?

7. a) Do you invite parents of the learners with HI to school on open days or education day? Yes ☐   No ☐
   b) If yes on Q6 a above what activities do you engage the parents in?

8. Which teaching learning facilities/equipments do you have in your school?

Thank you for your participation.
Appendix F

Approval of Research Proposal
Appendix G

Research Authorization