HOW PRE-SCHOOL CHILDREN WITH HEARING IMPAIRMENTS COMMUNICATE AT HOME AND SCHOOL IN KIRINYAGA COUNTY, KENYA

GITONGA MUTHONI JANE

E55/12582/2009

A THESIS SUBMITTED TO THE SCHOOL OF EDUCATION IN PARTIAL FULFILLMENT FOR THE AWARD OF DEGREE OF MASTER OF EDUCATION (SPECIAL NEEDS EDUCATION) OF KENYATTA UNIVERSITY

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Gitonga, Muthoni Jane
How pre-school children with hearing impairments

MAY 2013
DECLARATION

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

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Date 24/5/2013

This thesis has been submitted for examination with our approval as University Supervisors.

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To Almighty God who has lead me this far. To my beloved husband
Anastasius, my daughters Fidelis and Cynthia, my sons Cyril and Fydel who
have been my encouragement.
ACKNOWLEDGEMENT

I am grateful to God for bringing me this far in my studies and to Kenyatta University for supporting me to complete my masters’ studies. Second, I must thank my supervisors Dr Beatrice Bunyasi and Dr. Martin C. Njoroge for their guidance from the proposal to the completion of the Thesis. Gratitude also goes to the Special Needs Department for their untiring support. Thanks too to Mr. A. D. Bojana for the careful editorial work. I am grateful to all who participated in providing the data or assisted me in one way or the other during the typing periods of undertaking this study. Lastly, though not the least, I am grateful to my beloved family members who have been very patient during my studies.
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# ABBREVIATIONS AND ACRONYMS

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<tr>
<td>ASHA</td>
<td>American Speech – Language Hearing Association</td>
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<tr>
<td>ASL</td>
<td>American Sign Language</td>
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<tr>
<td>CF</td>
<td>Confer (Compare)</td>
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<td>CRC</td>
<td>Convention on the Rights of the Child</td>
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<td>EARs</td>
<td>Educational Assessment Resource Centres</td>
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<tr>
<td>ECDE</td>
<td>Early Childhood Development Education</td>
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<td>EFA</td>
<td>Education for All</td>
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<td>HI</td>
<td>Hearing Impairments</td>
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<tr>
<td>IDEA</td>
<td>Individuals with Disability Education Act</td>
</tr>
<tr>
<td>IEP</td>
<td>Individualized Educational Programme</td>
</tr>
<tr>
<td>KIE</td>
<td>Kenya Institute of Education</td>
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<tr>
<td>KSL</td>
<td>Kenyan Sign Language</td>
</tr>
<tr>
<td>LR</td>
<td>Lip Reading</td>
</tr>
<tr>
<td>MoEST</td>
<td>Ministry of Education Science and Technology</td>
</tr>
<tr>
<td>NCSA</td>
<td>National Cued Speech Association</td>
</tr>
<tr>
<td>NDCS</td>
<td>National Deaf Children’s Society</td>
</tr>
<tr>
<td>RoK</td>
<td>Republic of Kenya</td>
</tr>
<tr>
<td>SEE</td>
<td>Signed Exact English</td>
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<tr>
<td>SNE</td>
<td>Special Needs Education</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
</tr>
<tr>
<td>TC</td>
<td>Total Communication</td>
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<tr>
<td>ZPD</td>
<td>Zone of Proximal Development</td>
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ABSTRACT

The purpose of this study was to investigate how pre-school children with HI communicate both at home and in school. In particular, the study investigated how pre-school children communicate with care givers, the communicative strategies that those children with HI employed in their interaction, communication constraints for pre-school children with HI, both at home and in school and the impact of HI on effective communication for pre-school children. The study adopted a mixed method approach, but used grounded theory research design, to help the researcher to discover the theories behind communication of pre-school children with HI. The research locale was Kirinyaga County. Snowballing sampling techniques was used to sample ten (10) pre-school children with HI while purposive sampling was used to sample the schools where the children had been placed; ten (10) parents/guardians of the same children and ten (10) teachers who had been or were currently teaching the sampled children, making a total of 30 respondents. The researcher held face-to-face interviews, to gather data from the parents and teachers. Observations were used to gather relevant information relating to pre-school children's language use and communication in school. Data analysis was an ongoing process, where data were coded as soon as they were obtained. The codes were based on key themes most often addressed by the respondents. A data analysis computer based programme, Statistical Package for Social Sciences (SPSS) was used to develop a database of all the interviews and observations. All types of data analyzed were used to yield answers to the research questions. The findings were presented in tables, charts and graphs. The findings revealed that although most of the pre-school teachers were trained, none was trained in Special Education. Ninety per cent of the pre-school children sampled had communication difficulties. Most of the teachers preferred using oral method although the pre-school children preferred manual methods. The researcher recommended for training in Kenyan Sign Language (KSL) to all stakeholders in the education of the pre-school children with HI where proficiency in KSL should be emphasized. Total Communication (TC) should also be enhanced since majority of the teachers used oral methods which limit the pre-school children with HI from acquiring the necessary information which may lead to poor performance. The researcher also recommends that the KSL curriculum for pre-school children with HI be used in all the pre-schools where such children have been placed, to ensure they develop communication skills needed for pre-school children with HI to communicate effectively.
CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Globally, children’s early years are considered to be the most important for their social, emotional, physical and mental development (UNESCO, 2008) and language plays a critical role in this development. Kellogg (1995) defines language as a system of symbols that allows communication of ideas among two or more individuals. This language could be verbal, thus involving the use of words or it could be non-verbal which involves the use of signs, gestures and facial expression in conveying the desired message. Language helps an individual to appreciate values and cultures of his or her own society. Likewise, by use of language, one is able to read materials in the language that he or she understands with ease and enjoyment.

In many situations, language is taken for granted, yet it is difficult to imagine what life would be like without it. Pennington (2008), suggest that language is probably one of the most complex human behaviour. According to them, language is very important especially for children because it is through language that they can communicate effectively.

UNESCO (2008) reports that children with disabilities continue to be the most disadvantaged group in our societies, probably because they are children, in addition to having a disability. Among such children, are those with hearing impairments (HI). In addition to their limitations, is the impoverished
educational experience and being subjected to social discrimination as a result of communication barriers (Hwaga, 2008). For children with HI, the development of language is rarely natural and automatic, but a laborious process with obstacles and pitfalls (Kihingi, 2008). The scenario is due to the fact that children with HI cannot learn language around them by immersion, since they cannot hear it. Another issue relates to the pre-school children who are prelingually deaf (deafened before acquisition of language) who ought to have sign language as their first language. More 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). Since these children are more exposed to oral methods, their language development may be delayed thus affecting their ability to communicate effectively.

The Persons with Disability Act of 2003 (Republic of Kenya 2004), states that no person or learning institution shall deny admission to a person with disability to any course of study, by reason of such disability. The Kenyan current status allows pre-school children with HI to attend regular pre-schools without discrimination. That notwithstanding, the Act calls on learning institutions to take into account special needs of persons with disabilities with respect to entry requirements and curriculum. The constitution of Kenya of 2010 (RoK, 2010) under the Bill of Rights, Section 54, sub-section 1 (d) states that a person with disability is entitled to use sign language or other appropriate means of communication. With the above mentioned right in
mind, a study that tries to find out the reality on the ground as far as communication of persons with HI is concerned was thus necessary, especially in regard to communication of pre-school children with HI.

Although a lot of research in the field of child language development have been conducted on a large scale, it is important to note that in many developing countries in Africa, such developments are still very limited. A study carried out in Ghana reports that the current linguistic research has not provided a comprehensive picture of the language situation in Africa (Bodomo, 1995). A study which focuses on communication of the pre-school children with HI contributes to the existing body of knowledge on child language development, especially research on children with special needs.

The approximate number of persons with hearing impairment in Kenya is 187,840 (97,978 females and 89,840 males) and 1,422 (744 males and 678 females) in Kirinyaga County (RoK, 2010). Since 20% of Kenya’s population are in pre-school age and 65% are out of school (MoEST, 2005) then 284 pre-school children from Kirinyaga County have HI, but only 99 are in school. With language being important as a means of communication, the researcher sought to find out the language the pre-school children who had HI used and how they communicated at home and in school.

1.2 Statement of the Problem
In Kenya, there exists insufficient number of qualified teachers as well as poor-quality teaching and learning process in the Early Childhood Care and Education (UNESCO, 2008). According to MoEST (2005), the number of
untrained teachers in the Early Childhood Development and Education (ECDE) centres is at 56%. Due to poor remuneration and lack of support, there is a high turnover of 40% of the trained teachers annually. Most of the pre-school children are placed in those regular nursery schools without special educational support services, a feature that may adversely influence learning in the early years of formal schooling.

One of the general objectives of the pre-primary academic curriculum guidelines for learners with HI is to assist learners develop spiritually, morally and socially so as to live a better life (MoEST, 2001). To achieve this objective, language and communication is viewed as a key determinant to the success in working with children with HI. The Task Force on Special Education (MoEST, 2003), however, found out that only 20% of teachers in Special Needs Education (SNE) programmes were trained in SNE and most of the teachers lacked the necessary proficiency in Kenyan Sign Language (KSL). Kenyan Sign Language is the catchment language for persons with HI. They are able to socialize well among themselves through it, but KSL curriculum only caters for learners within the special institutions. Currently, there is a KSL curriculum for the pre-school children in Kenya although it is only used in special institutions. Yet the pre-school children are usually placed in regular pre-schools and they need to develop some form of communication for social and learning purposes. With very little having been done to address communication of the pre-school children with HI in the regular school, a
study on how these learners communicate with their parents, guardians, siblings, teachers, and peers was deemed timely.

1.2.1 Purpose of the Study
The purpose of the study was to explore how pre-school children with HI communicate at home and in school. Since pre-school children with HI are reared in an environment that is more oral in orientation, it was then important to find out communicative strategies used by the pre-school children, how HI has impacted on their communication and constraints resulting from HI.

1.3 Research Objectives
i. To find out how pre-school children with HI communicate at home and in school;

ii. To establish the communicative strategies that pre-school children with HI employ in their interactions;

iii. To determine the constraints faced by pre-school children with HI during their communication at home and in school;

iv. To find out the impact of HI on effective communication among pre-school children with HI.

1.4 Research Questions
i. How do pre-school children with HI communicate at home and at school?

ii. What are the communication strategies that pre-school children with HI employ in their interactions with their parents, guardians, siblings, teachers, and peers?
iii. What challenges do pre-school children with HI face while communicating with care givers?

iv. What is the impact of HI on effective communication among pre-school children?

1.5 Significance of the Study
The study findings are hoped to add to the available information at the MoEST for use in the implementation of a KSL curriculum to cater for pre-school children with HI in the regular pre-schools. This is because so far pre-school children with HI in the regular schools lack a KSL curriculum.

The study might also inform teachers working with the pre-school children with HI and parents of the same children of possible communication strategies which would minimize communication difficulties that pre-school children face.

1.6 Limitations and Delimitations

1.6.1 Limitations
The researcher had constraints in time because there was a work schedule for completion of the postgraduate programme. The researcher had already reported back to work when her study leave expired.

1.6.2 Delimitations
The pre-school children with HI are spread all over Kenya. However, due to the nature of the study and time constraints, only one county, Kirinyaga, was focused on. Pre-school children with HI in regular pre-school were scattered thus a county was reasonable to cover. The researcher did not deal with all
aspects regarding pre-school children’s development because the scope would have been too wide. In addition, although Kenya identifies many challenges facing the ECDE sub-sector (MoEST, 2003), the study focused only on children with HI in the ECDE, owing to the fact that a disability might pose an additional challenge.

1.7 Assumptions of the Study
The study assumed that pre-school children with HI acquire some kind of language which they use for communication and that they employ certain communicative strategies in their interactions. In addition, the researcher assumed that pre-school children with HI communicate with care providers while at home and in school. The study further assumed that pre-school children with HI have constraints during communication both at home and in school. Lastly, the study assumed that hearing impairments have effects on language and consequently on effective communication.

1.8 Theoretical and Conceptual Framework
This sub-section presents both theoretical and conceptual framework that informed the study.

1.8.1 Theoretical Framework
In an attempt to explain communication of pre-school children with HI, the researcher adopted Vygotsky (1978) Cognitive Development theory and Bronfenbrenner’s (1979) Ecological theory. These theories build on the premise that children develop language through their activities, and that their interactions or interconnections at home and in school are of great importance. Interaction between the children and their primary care providers is critical to
developing firm language foundation necessary for communication (Laura, 2010). The role of the adult is seen as being facilitative, giving as much assistance as is needed while overtime, the child will become increasingly confident and able to function independently. This is through the gradual handover of interactional control to the learner (Ellis & Barkhuizen, 2005). The metaphorical term ‘scaffolding’ applies to a social interaction of this kind. Mwangi (2007) reflects the same idea of Vygotsky’s scaffolding process and she notes that scaffolding by an experienced adult is helpful in teaching of young children.

The most significant idea in Vygotsky’s model of human learning is that of “Zone of Proximal Development” (ZPD). This is where children can operate at one level on their own, described as “level of actual development” but perform at a higher level when supported or “scaffolded” by an adult or more experienced peer, described as their “level of potential development”. If a child is enabled to advance by being under the tutelage of an adult or more competent peer, then the tutor and aiding peer serve as a vicarious form of consciousness until such a time as the learner is able to master his or her own action through his/her own consciousness and control. The tutor performs the critical function of “Scaffolding” (Whitebread, 1997). Since pre-school children with HI learn to communicate through their social interactions with adults and able peers, Vygotsky’s theory therefore helps to understand communication process in this study.
The Ecological theory (Bronfenbrenner, 1979) holds that development reflects the influence of several environmental systems among them microsystems and mesosystems. The most direct interaction with social agents takes place with parents, peers and teachers. The researcher finds the theory applicable in helping to understand how the ability to communicate by the pre-school children with HI is enhanced by the interpersonal forces (parents, siblings, friends and teachers) to whom the child is exposed.

The two theories outlined above were deemed appropriate for the analysis of data, the description of data and explanation of patterns that emerged. The study focused on communication of pre-school children with HI, and communication is central in the theories. The study further looked into the interaction between parents/guardians/teachers and children an aspect that is captured in both Vygotsky and Bronfenbrenner theories when they discuss the role of adults in human learning and the influence of the microsystems and mesosystems.
1.8.2 Conceptual Framework

Pre-school children with HI (actual level of development)

Communication modes (oral-aural, manual and total communication)

Communication strategies (visual, visual with sign language, vibrotactile, blank stare)

Microsystems (family, parents, guardians and siblings)

Mesosystems (school, teachers, peers and neighbourhood)

Intervening conditions
Child’s attributes; severity of HI, age at onset, type of hearing loss, school environment

Functional communication (potential level of development)
Instrumental (ask something), interactional (interact and converse), personal (express feelings and state of mind).

Communication difficulties

Figure 1.1: Communication of pre-school children with HI
Source: Researcher own adaptation
The conceptual framework reveals that micro and mesosystems influence the pre-school children with HI and lead the children to communicate by the use of different modes of communication and certain communicative strategies. Microsystems are settings where individuals live, for example, with immediate family, parents, guardians, care providers and siblings. Mesosystems refer to experience in school and neighbourhood (Bronfenbrenner, 1979). Through their interactions at school and at home, the pre-school children with HI are assisted to move from their actual level of development to their potential level of development in communication. This happens through the scaffolding process or ZPD resulting in functional communication.
1.9 Operational Definition of Terms

Communication: Verbal and non-verbal means of transmitting and decoding messages from one individual to another.

Deaf: A person whose hearing loss is so severe that he or she cannot hear and process linguistic information even if he or she is wearing a hearing aid.

Hard of hearing: A person who, despite hearing loss, has some residual hearing which can help him or her to hear speech and acquire spoken language if he/she is spoken to loudly.

Hearing impairment: Used to describe individuals who manifest hearing loss, regardless of severity.

Language: Any form of symbols used whereby ideas are communicated.

Mesosystems: Experiences at school with peers and in the neighbourhood.

Microsystems: Settings where individuals live. They include members of the immediate family, such as, parents, guardians and siblings.

Pre-school children: Children in the pre-primary tier/level, or before they join primary school.

Scaffolding: Process of learning with assistance from others who are more able.
1.10 Conclusion
The chapter contained the background to the study, statement of the problems, purpose of the study, research objectives and research questions. It also focused on significance, limitations and delimitations of the study, theoretical and conceptual framework and operational definition of terms. The next chapter focused on review of related literature.
CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction
This chapter gives details of related literature from other scholars and researchers. Guided by the objectives of the study, the chapter focuses on communication of persons with HI, communicative strategies for persons with HI, communication constraints facing persons with HI and impacts of HI on effective communication.

2.2 Communication of Persons with Hearing Impairments
According to Laura (2010), the main purpose of communication is to provide and solicit information. People communicate for many different purposes. Halliday (1994) identifies seven categories of functions of communication and stresses the importance of these functions which include instrumental (ask for something), regulatory (give direction), interactional (interact and converse with others), personal (express themselves), heuristic (find out any information), imaginative (tell stories) and informative (describe an event). Pre-school children with HI also require to communicate and to use any of the mentioned functions during such communication.

Children learn the language they hear or see around them and then use it for communicating their thoughts and ideas. However, Gregory, Knight, McCracken, Powers and Watson (2002) state that the relationship between the child’s linguistic environment and the way the child acquires that language is
far from obvious. The environment in which the pre-school children with HI are reared will determine their language development. Development of language is a crucial factor in cognitive and social development of children with HI (Gregory et al., 2002). Nevertheless, how normal development can be best achieved and which language or languages should be learnt for communication is a continuing cause of controversy. Woll (2002) for example, states that although research in sign language and its acquisition has been designed, it has addressed the question of whether sign language and spoken language are localized to the same brain area. Addressed in Woll (2002) are the critical periods for language development and the long-term outcome of late first language acquisition.

Research on spoken and sign language development is described both as beginning with babbling and gestures (early pre-linguistic communication), lexical and grammatical development, and discourse skills. Babies, who are deaf, exhibit early vocal babbling similar to that of hearing babies. According to Wool and Kyle (1989), mothers also vocalize even to their infants who are deaf, although neither could hear the sound. After the first few months, the vocal babbling of a baby who is deaf decreases. The absence of increase in normal babbling pattern may lead to change in interaction pattern with hearing parents. The usual vocal turn-taking may not proceed normally. This impairment in interaction has implications for later social, cognitive development as well as for communication. Manual babbling can be observed in infants exposed to sign language (Petitto & Marentette, 1991). The infants
move their hands and arms as they imitate hands and arms movements of the care provider. Just as hearing/speaking parents respond with change in their interaction patterns to syllabic vocal babbling, signing parents respond to manual babbling. They engage in conversation in the same way hearing parents do vocal babbling but the signing parents focus more on the manual than the oral.

Babies born of deaf parents who are users of sign languages (whether the babies themselves are deaf or not) pick up the systems from the care providers, through informal interaction rather than by explicit instructions just as people learn spoken language (Gleitman, Fridlund & Reisberg, 2004). Language then does not depend on auditory vocal channel. When the usual mode of communication are denied to human beings of normal mentality, they come up with an alternative that reproduces the same content and structure as other language systems. It appears that language is an irrepressible human trait; deny it to the mouth and it will dart out through the fingers (Gleitman et al., 2004). Communication is then achieved through signing. Such views informed this study in investigating how pre-school children with HI, communicated while at home and in school.

Individual with Disabilities Education Act (IDEA) of 1997 (Schwartz, 2005) legislated for the inclusion of all children into the general education. Therefore, early language support to meet the needs of children who do not seem to acquire language at the same rate or manner as their peers in the mainstream is particularly important. A study by Kristensen (1997) suggests
that pre-school children with special educational needs should be given support by a special needs education teacher at an early age. This support may minimize the impact of special educational needs at a later age. Kristensen, however, states that there are some children who cannot benefit fully even if the teacher tries to differentiate his or her teaching. He cites the deaf being among those who continuously need special education in areas of sign language or bilingualism. IDEA states that a student’s Individual Educational Programme (IEP) team must consider a variety of communication modes that the learner with HI or hard of hearing might use. There has been a long history of controversy over which approach is the most appropriate. However, professionals commonly use three approaches (oral-aural, manual and total communication) to teach communication skills to students with HI (Turnbull, Turnbull & Wehmeyer, 2007).

2.2.1 Oral / Aural Communication
Oral/aural communication approaches include the auditory-verbal and oral-aural format. According to VAANI (2010), auditory format is also known as the unisensory mode. The child develops “listening and speech” skills through use of optimally functioning hearing aid and the auditory training. Lip Reading (RL) is not encouraged and use of signs is forbidden. The child with HI develops spoken communication skills just like any other children, through use of the ears.

VAANI (2010) explains that oral-aural format is also called auditory-oral approach. The approach relies on auditory training and use of hearing to
develop spoken language. This method, however, allows the use of visual input and speech-reading to augment auditory information. Unfortunately, this skill of speech reading is extremely difficult to master since only small amount of what is said is actually visible on the lips. The ability to lip read is said also to depend on many factors: visual acuity, degree of visibility of the letter/word on the lips (example “f” is easily seen but “h” is not) and the speaker’s rate of utterance. Lighting, distance and the fact that some letter/words look the same on the speaker’s lips (for example “p” “b” and “m”) since all are on the lips, may affect the ability to lip read. Another mode of communication which is used as a supplement to speech reading is cued speech. According to the National Cued Speech Association (NCSA) (2010), cued speech involves the use of eight hand shapes and four hand positions near the mouth, while speaking to represent different speech sounds. Use of cued speech helps to identify sounds that are not easily seen on the lips or those that appear identical (for example “k” and “g” or “p” and “b”). Although the hand use is manual, this method is oral approach and is dependent upon speech reading of spoken languages.

2.2.2 Manual Communication
Manual communication makes use of the child’s visual modality to receive information. Manual communication includes several different sign systems, each with its own proponents. Sign language uses combination of hand, body and facial movements to convey word and concept rather than individual letters. Sign language is not written or spoken, but is a native language of a particular deaf community. Sign language is a complete language with its own
grammar, which is very different from grammar of spoken language (VAANI, 2010). In Kenya, the deaf community use Kenyan Sign Language (KSL), while USA uses the American Sign Language (ASL). Sign language is a natural language and it evolves with use. In comparison with ASL, KSL has not advanced like the ASL, especially because KSL only started being used recently (Aura & Kalee, 2008). Finger spelling is another form of manual communication. Finger spelling is the use of hand configuration to represent the letters of the alphabet. Each letter is represented by a specific hand configuration. Finger spelling is generally used in combination with sign language especially to spell proper nouns, technological terms and special words for which there are no signs. Figure 2.1 shows the manual communication for letters of the alphabet, as represented by Vicars (2007).
Other manual communications include gestures, signs, signed language and natural signs. Gestures are spontaneous manual expressions to communicate one’s thoughts. Children with HI may utilize gestures in their communication (VAANI, 2010). A sign is a gesture, which is used constantly to mean the same thing. A sign is a manual counterpart of a “word”. Signed language or signed system is different from sign language. Signed language is a manual code for a spoken language. It is not a different language, but is the use of signs, following the grammar of a particular language. Signed language then is not natural but uses grammar of an existing language. An example of a signed language is the Signed Exact English (SEE) where an English sentence is made visible by signing all the words, including affixes which are finger spelt.
Lastly, natural signs are hand shapes and movements used in our everyday life to communicate. Examples of such signs are beckoning somebody, waving goodbye among others. Pre-school children with HI may use any of the above mentioned manual modes of communication and thus the need to observe and find out the modes used by those pre-school children as they communicate both at home and in school.

2.2.3 Total Communication (TC)
Total Communication is the use of all modes of communication to ensure communication with HI people. TC as a philosophy incorporates the appropriate aural, manual and oral methods. About 72% of deaf students are now using this method (Moores, 1996). A survey by the National Deaf Children’s Society (NDCS) (1996) in United Kingdom on communication policies in units for the deaf indicated that 48% used TC, 23% used oral, 13% used bilingualism while 16% declined to specify. A child with HI may use a combination of any modes of communication during periods of communication. A study that sought to identify the modes of communication the pre-school children with HI in Kenya and specifically in Kirinyaga County employ in their communication was deemed necessary.

2.3 Communicative Strategies for Children with Hearing Impairments
Communication can become a challenge if a person is having a hearing impairment. Successful communication, therefore, requires the effort of all the people involved in a conversation. Communication difficulty is considered to be the most damaging consequence of a person with HI. To minimize this
difficulty, the individuals with HI use some mechanisms in order to have a
better understanding of what is being communicated. These mechanisms are
termed as communication strategies (Speri, 2000). According to Boechat
(1992), communicative strategies are a set of given attitudes that work as
facilitating agents for the message to be easily received both in visual and
hearing modalities. Boechat classifies the strategies in groups according to
their nature. The classifications are cognitive, interventional, mechanics,
palliative, remedial, waiving and simulative. One of the cognitive strategies
which aim to rescue the content of the message is Lip Reading (LR). Demorest
and Bernstein (1992), state that LR is the most prevalent expression within the
cognitive type of strategies. Individuals use several cues to understand speech
for example, paying attention to facial expression, recognition of gestures,
clues, paying attention to environmental clues and others. However, the best
lip reader can only grasp 50% of the words uttered, since many phonemes
have an invisible articulation and other words have similar articulation.

On the other hand, Deluzio and Girolametto (2006) in their study on strategies
used by pre-school educator identified different strategies used for the deaf.
The strategies included visual, visual using sign language, vibro-tactile and
observing. Tactile and visual strategies were used with the same frequency and
occurred more often than waiting or using American Sign Language (ASL) to
establish joint attention. Other than waiting, all strategies were equally
successful at gaining or regaining the child’s attention. Possibly, visual and
tactile strategies were more frequently used since persons with HI depend
mostly on visual information available on the speaker's face and on signed communication to receive linguistic input (Spencer & Lederberg, 1997).

Research findings by Waxman and Spencer (1997) indicate that tactile attention-gaining strategies would be most successful in establishing attention. Tactile strategies include taps, strokes, touch on the child or knock/bangs on an object creating vibrations perceptible to the child. Visual strategies involve activities that are within the child's visual field. Visual strategies using signs on the other hand specifically involve use of signs to the child's visual field. Lastly, waiting requires the educator to face the child with HI, but does nothing to gain the child's attention. In a classroom situation, waiting might mean going on with teaching without any special attention to the child with HI.

Research has indicated that mothers of children with HI use more attention-gaining strategies. Parents who themselves are deaf have been reported to use more tactile and visual attention as communication strategies than parents with typical hearing. For example, mothers with HL are 3 to 5 times more likely to use the strategy of physical tapping to their children (Harris & Mohay, 1997).

Research suggests that parents use visual and tactile strategies while communicating with their children who have HI. It is not known whether the pre-school children with HI use the same strategies, in different activities. This study hence sought to find out the communicative strategies used by the pre-school children with HI, not only at home but also in school and thus establish the reality on the ground.
Dockrell and Messer (2004), however, state that good communication strategies for persons with HI include: facing the person with HI directly on the same level and in good light whenever possible. Likewise, speaking clearly, slowly, distinctly but naturally without shouting or exaggerating mouth movements is another strategy. During a conversation, the speaker should call the person's name before beginning of a conversation. Avoiding talking too rapidly or using sentences that are too complex, the speaker ought to keep their hands away from the face while talking, and avoids any distraction on the face for examples chewing, eating or a moustache since such may make speech more difficult to understand. Also, the speaker should avoid any extraneous noise, since most people with HI have greater difficulty in understanding when there is background noise. Similarly, avoid situations where there will be loud sounds where possible, since some people with HI are sensitive to loud sounds.

If the person with HI has difficulties in understanding a particular phrase or word, the speaker ought to find a different way of saying the same thing, rather than repeating the original words over and over again. The listener should be acquainted with the general topic of conservation. And he or she should avoid sudden change of topics and if subject is changed, person with HI should be told what the speaker is talking about now. Sudden change of topic leads the person with HI to be lost in the conversation. If the speaker is giving specific information to the person with HI, he or she should repeat the specific back to the person with HI. That will allow judgment of whether the
message was understood. In case the person with HI looks puzzled, that may indicate misunderstanding. It is important therefore to ask the person with HI using leading question to know whether the message got across.

Since children do not acquire language in a vacuum, there is need to consider a child with HI, his or her home, day-care centre and school in which he/she attends to fully comprehend how interaction is, whether communication exists, and whether there are any challenges that children with HI particularly face. Each child with HI may have a Zone of Proximal Development (ZPD). Vygotsky (1978:86) defines ZPD as

> The distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers.

In reference to Vygotsky’s ZPD, Morrow (2005) suggests that adults initially provide children with names of things; they direct youngsters and make suggestions. Then as the children become more competent, the adult, then gradually withdraw the amount of help they needed to give. In communication, there exists a social interaction between the adult and child. Theoretically, a child can perform within the range in the ZPD but only with adult’s assistance. Vygotsky states that the support ends when the child can function independently. Scaffolding in the pre-school age especially when dealing with a child with HI requires the adults and peers to be conversant with sign language, a great challenge to contend with.
Parental scaffolding is found in longitudinal case studies from Scollon and Scollon (1984) and Painter (1990) who report that the children studied are shown achieving jointly with adults syntactic or narrative construction that they were unable to achieve monologically until a later date. Nevertheless, findings from studies indicate that parents modify their speech when talking to younger children in a number of ways: keeping their utterance short and grammatically simple; using exaggerated intonations to hold the child’s attention and emphasize key words; limiting the topics talked about to what is familiar to the child and frequently repeating and paraphrasing what they say (Well, 1986). Since a person with HI uses vision to enhance communication, it is equally important for the parent to listen to the child with HI through keen observation (Turnbull et al., 2007). The research as well sought to find out the role played by parents to enhance communication for pre-school children with HI in Kirinyaga County.

2.4 Communication Constraints Faced by Children with Hearing Impairments

Ability to hear allows individuals to gain information about themselves and the world around them through the development of communication skills and identification of environmental auditory cues. Language is a central communication skill in human beings and is learned through interacting with a language-rich environment (Schwartz, 2005). Most children with HI, however, are not able to participate in the process without special help. They miss out many of the early critical opportunities for developing basic communication
skills. Speech is developed through a series of activities like observing, listening, imitating others, hearing oneself, comparing with others and perfecting speech. Yet most of the mentioned activities which may assist in communication could be difficult for persons with HI (Dockrell & Messer, 2004).

According to Okombo, Akaranga, Mweri and Ogutu (2006), Children acquire their first language informally through interaction with parents, siblings, caregivers, peers and other members of their community between birth and six years. Deaf children also acquire sign language at the same rate at which hearing children acquire spoken language (provided they are exposed to sign language). However, deaf children from hearing parents who do not know sign language have no opportunity to develop sign language until they join school at the age of four to six years or even later in school the children acquire the language through interaction with peers who know sign language.

Language deficiencies can also influence the child with hearing impairments’ personality and social development since communication process greatly affects personality and social development (Hwaga, 2008). Early interaction for children with HI and their families is critical for developing the child’s language and social academic skills. It provides the child with similar peers, role models, appropriate skills training and support for acquiring communication and language (Marschark & Spencer, 2003). In Kenya, the pre-school children with HI as the first language (signing) may not be well-established as they join pre-school, yet a second language may be introduced
while in pre-school. This situation could hamper the pre-school children’s
language development. This study sought to find out the challenges pre-school
children from Kirinyaga County face during communication as a result of HI.

Kihingi (2008) in her study on the factors hindering effective teaching and
learning activities for students with HI, found out that there were inadequate
teaching personnel handling students with HI at Karen Technical Training
Institute for the Deaf. The findings also showed that 56.6% of the students
used KSL as a mode of communication. This brought a communication barrier
during teaching and learning activities. Finally the research found that only
7.7% of the teachers were conversant with KSL. From the findings, it was
evident that students who had HI but were already in a technical college faced
communication challenges. Since pre-school children with HI are younger in
years, the researcher sought to find out what communication constraints such
children faced not only in school but also at home.

2.5 Impact of Hearing Impairments on Communication
Although majority of children develop language naturally and without much
struggle, there is a group of children who do not seem to acquire language at
the same rate or manner as their peers (Hartas, 2005). Such children are
especially those with HI. They experience many challenges in the course of
learning due to their HI which interfere with normal language development
and communication. HI interferes with both receptive and expressive language
(Wanjau, 2005).
According to Spencer and Meadow-Orlans (1996), language development for children who are born deaf or hard-of-hearing may have delays resulting from their inability to process auditory information. They may also lack exposure to visually encoded language. Their delays will vary depending on the level of HL and amount of visual and auditory input they receive. Children with HI tend to have delays in speech and language which may present problems in self-awareness and self-expression (Laura, 2010) consequently affecting communication. According to Marschark, Lang and Albertini (2002) cited in Turnbull et al., (2007), early access to language-rich environment for such children is critical for communication. That would mean better education for parents concerning strategies to enhance communication of children with HI, whether they use spoken or sign language for communication.

People with HI are generally deficient in the language used by most of “hearing” society in which they live. According to the American Speech-Language Hearing Association (ASHA) (2010), HL affects children in different ways. It causes delay in speech-language development; those language delays cause learning problems that can affect school success, communication difficulties often leading to loneliness and poor self-concept and finally, the hearing loss (HL) may have an impact on later job choice. ASHA recommends then that hearing problems be treated or dealt with early in life to promote acquisition, development and use of language for communication by pre-school children with HI.
Hearing is critical to speech and language development, communication and learning. HL is said to cause delays in the development of expressive and receptive communication skills (speech and languages) (ASHA, 2010). Research findings indicate that vocabulary develops more slowly in children with HI. Such children learn concrete words like “jump”, “five” and “red” more easily than abstract words like “before”, “after”, “equal to”, and “jealous”. They also have difficulties with articles like “the”, “an” and “a”. The gap between the vocabulary of children with normal hearing and those with HL widens with age. However, children with HL do not succeed without intervention (ASHA, 2010).

Children with severe HI have a delay in onset of language and are slow in the rate at which they learn auditory-vocal (spoken) language. The language of orally trained pre-school children can be two to three years behind that of typically developing children (Spencer & Meadow-Orlans, 1996). For children with HI, the onset of vocalization is quite delayed in comparison to hearing infants. In the early babbling stages, the vocalization appears similar but by the age of ten months, there is clear evidence of impact of auditory deprivation. Children of parents who are deaf have been observed to babble manually at about the same age. In contrast to a gradual reduction in oral vocalization, signing increases among these children.

Similarly, Moores (1996) indicates that a child, who hears low frequencies well but misses the middle and high pitch tones, faces a communication problem. The children with HI miss the acoustic elements, which give speech
its distinctive character. Children with HL often cannot hear word endings such as “-s” or “-ed.” This leads to misunderstanding and misuse of verb tenses, pluralisation, non-agreements or subjects and verb, and possessives. In speech, they often cannot hear quiet speech. The speech of the children with HL hence becomes difficult to understand.

The child with HI is not able to listen to how he or she articulates, leading to inability to monitor his or her pronunciation, pitch and volume. The child with HI may speak too loudly or not loud enough. Such a child may sound like he or she is mumbling because of poor stress, that is, poor inflection or poor rate of speaking. The results then are unintelligible speech, and a slow development and use of language.

Belmont and Krachmer (1978) cited in Dockrell and Messer (2004) state that individuals who are deaf have been observed to have shorter memory span than hearing individuals. The greater the hearing loss, the shorter the child’s memory span. It is likely that the child’s reduced working memory span complicates their language acquisition. Recent research as in ASHA (2010), however, indicates that children identified with HL who begin services early may develop language (spoken and or signed) at par with their hearing peers.

According to NDCS (2004), research has show that the greatest influence on the child’s learning is the attitudes of their parents. However, Hoffmeister (2006) in discussing sign language and education of the deaf child, states that education of the deaf has always been embroiled in issues concerning
language. Hoffmeister also concludes that accessibility to a language is the paramount issue in acquiring a language thus becoming the foundational issue to educating a deaf child. In relation to pre-school children with HI from Kirinyaga County, the research sought to find out the effect of HI on the pre-school children's communication.

2.6 Summary
From the literature reviewed, Research findings from United Kingdom (UK) have indicated that majority of the Deaf institutions use TC in communication. A study in Kenya by Kihingi (2008), found out that 56.6% of students with HI from Karen Technical Training Institute used KSL as a mode of communication. Since no research in Kenya has been conducted on how pre-school children with HI communicated before entry to school, this research sought to find out how children with HI from Kirinyaga County communicate both at home and in school. The research also sought to find out mode of communication used by and with such children at home and school.

It also emerged that communication depends upon availability and opportunity a child has for interacting with skilled users of the language. Pre-school children with HI born of hearing parents typically grow up in a linguistically impoverished surrounding due to the parental inability to use signs. This research sought to find out the communication constraint such children in Kirinyaga County had due to their HI.

Several studies have also discussed communicative strategies used to overcome communication difficulties resulting from the effects of HI among
them; visual, visual using sign language, vibro-tactile/turn-taking and observing/waiting. In Kenya, studies on communicative strategies used by pre-school children were not available. Since pre-school children who are deaf need to communicate, the study intended to find out the communicative strategies such pre-school children use while at home and in school.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction
The chapter presents the research design, variables, location of the study, target population, sampling technique and sample size, research instruments, pilot study, data collection, data analysis, and ethical and logistical considerations.

3.2 Research Design
The study adopted a grounded theory research design. Since the focus of the study was to discover how pre-school children with HI communicated at home and in school, this research design was deemed appropriate. The design seeks to understand new phenomena and helps to explain how an aspect of social world works. The theory is discovered, developed and provisionary verified through systematic data analysis (Creswell, 2005; Strauss & Corbin, 1998). Since language is a social aspect, the design helped to know how the pre-school children with HI communicated when at home and in school.

3.2.1 Variables
Dependent variable in this study was communication of pre-school children with HI. The independent variables were factors that can affect communication of pre-school children with HI. Among them were communication modes, communicative strategies, relationships in the microsystems and mesosystems.
3.3 Location of study
The study was conducted in Kirinyaga County, Central Province, a county that has a population of 528,054 and an area of 1,478 square kilometres (www.guide.2kenya.com/information/74/...). The County is approximately 130 Kilometres North East of Nairobi and neighbours Mt. Kenya to the North. Currently, the county has four districts each with an Assessment Centre which carries out assessment and placement of children with special educational needs. There is only one special school for children with HI (Kerugoya School for the Deaf) and there are no integrated units for such children. The children with HI who are assessed within the county are thus mostly placed in regular pre-schools awaiting a chance in the only special institution in the county or placement in other schools outside the county.

3.4 Target Population
The target population comprised all parents/guardians of all pre-school children with HI in Kirinyaga County and all teachers who had been teaching or were currently teaching the targeted children in the county. The pre-school children were those who had been assessed and placed in regular pre-schools, both private and public. According to MoE district assessment data of 2009, pre-school children who had been assessed and placed in regular pre-schools were 19 in number. The research targeted Kirinyaga County so as to arrive at an adequate sample since only 19 pre-school children were available in the entire county.
3.5 Sampling Technique and Sample Size

3.5.1 Sampling Technique
Snowball sampling technique was used to sample the pre-school children with HI. Teachers, who taught or had been teaching the pre-school children and the parents/guardians of the sampled children, were purposively sampled. Only one parent/guardian who was believed to have the information needed as directed by the teacher was sampled. In cases where pre-school class had two teachers, the researcher tossed a coin to get only one teacher. The researcher started by getting reference from the assessment coordinators, who gave the names of the pre-school children, and the pre-schools they had been placed.

3.5.2 Sample Size
The sample for this study comprised 10 pre-school children, 10 teachers and 10 parents/guardians of the sampled children giving a total of 30 respondents as represented in Table 3.1. The gender of the research subjects and rural/urban distribution of the sample were determined by the available respondents.

Table 3.1: Sample size

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Target population</th>
<th>Sample size</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-school children with HI</td>
<td>19</td>
<td>10</td>
<td>52.63%</td>
</tr>
<tr>
<td>Teachers</td>
<td>19</td>
<td>10</td>
<td>52.63%</td>
</tr>
<tr>
<td>Parents/Guardians</td>
<td>19</td>
<td>10</td>
<td>52.63%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>57</strong></td>
<td><strong>30</strong></td>
<td><strong>52.63%</strong></td>
</tr>
</tbody>
</table>
3.6 Research Instruments
The researcher used an observation schedule, interview guides for teachers and parents / guardians. All the instruments were constructed by the researcher based on the objectives and comprised open-ended and closed-ended questions. No instruments were available from previous studies to be adapted or adopted.

3.6.1 Interview Guide for Teachers
The interviews were used to collect data that related to pre-school children’s language and communication from the teachers who had been teaching the pre-school children with HI. The interview guide comprised of 11 items. The researcher collected data related to biodata of teachers and how they communicated with pre-school children with HI. The teachers also gave information on strategies they used and those used by pre-school children. Probes were also used where more information was needed in a given question.

3.6.2 Interview Guide for Parents
The researcher prepared 12 items which helped gather data on the children’s profile, how the children communicated at home, whether they had any communication difficulties and how they overcame those communication difficulties. Probes were also used to ensure adequate information was received from the parent/guardian. The researcher conducted face-to-face interviews with parents/guardians of pre-school children with HI. Only one parent/guardian per child, who was believed to have information required, was
interviewed. Orodho (2009) describes interview as a technique that may be used to allow the researcher cater for individual differences.

3.6.3 Observation Schedule
The researcher used observation schedule and conducted a naturalistic observation of pre-school children in school. This technique helped answer the research questions in a better way. Observation schedule comprised 8 items addressing the research objectives. The researcher gathered data on how pre-school children communicate, whether they have any communication difficulties and how they overcame the communication difficulties. The researcher recorded the observations in a semi-structured way, guided by questions in the observation schedule. The researcher took a non-participant role during observation. This was because the researcher’s attention was not divided between, participating in the activities and observing others doing it (Larsen-Freeman & Long, 1994).

3.7 Pilot Study
This was conducted using four pre-school children with HI, their parents/guardians and four teachers of pre-school children with HI (giving a total of twelve respondents) from Central Division, Kirinyaga Central District. Those selected were not used in the main study. Similarly, those who participated in piloting were purposively selected, with the direction of the coordinator in the assessment centre from Kirinyaga Central District. Piloting enabled the researcher to detect any flaws in the administration of the research instruments
and hence helped validate the data collection tools. Piloting also assisted to improve the instruments where necessary.

3.7.1 Validity
To ensure validity, the researcher presented the instruments to a panel of three lecturers competent in the area under study to determine the face validity. In addition, the supervisors provided useful feedback. The feedback from the panel and supervisors was incorporated into the instruments. The researcher examined evidence from the data tools and used it to build a coherent justification for themes.

3.7.2 Reliability
The researcher established reliability by ensuring consistency in development of themes. The researcher administered one test to the pilot group and retested the group after two weeks to achieve a test-retest reliability. A correlation coefficient (r) of about 0.725 was considered high enough to judge the reliability of the instruments.

3.8 Data Collection
The researcher first interviewed the pre-school teachers (see Appendix A for details). Then, the researcher used face-to-face interview with the parents/guardians of the sampled children (see Appendix B for interview guide). Finally, the researcher had a 3-hour morning session to observe the pre-school children in school for two days, giving a total of six observation hours per child in school. During the observations, the researcher used the observation schedule prepared to record information related to language and
communication of the pre-school children (see Appendix C for observation schedule). Recording was all done on the researcher’s notebook then later used for analysis.

3.9 Data Analysis

Data were analyzed using descriptive statistics where both qualitative and quantitative procedures were employed. The data collected from the respondents were arranged and analysed, guided by the objectives. The observations, interviews from the teachers and parents/guardians were edited, and coded manually, later the researcher keyed in the codes into the computer for processing. Statistical Package for Social Sciences (SPSS) was used to analyze the information. Finally, the data were presented in frequencies, tables and charts to give a clear visual presentation.

3.10 Logistical and Ethical Considerations

The researcher requested for a letter of approval from Graduate School, Kenyatta University detailing that the researcher was a bona fide student of the university. The researcher also got authority to conduct research from the National Council of Science and Technology and the Ministry of Education. A verbal guardian/ parental consent for children who participated in the study were sought. The confidentiality and anonymity of the participants were assured, by ensuring the tools had no names and the information was used for research purpose only.
CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction
The chapter deals with data presentation, analysis, and discussion of the major findings. The analysis was done in view of the research objectives. For the purpose of showing the relationships among various variables the data is presented in the form of pie charts, graphs, frequency tables and percentages. The data analysis and discussion focuses on the demographic information, communication modes used by pre-school children with HI, strategies employed by pre-school children in communication, the challenges pre-school children with HI face during communication and the impact of HI on communication on pre-school learners.

4.2 Demographic Information
Demographic information was important since it gave the researcher the general overview on the pre-school children with HI and the teachers who taught them. The researcher sought to find out the age of the children and the age at onset of the hearing impairment. The researcher also sought the qualification of the pre-school teachers and the duration of time the teachers had taught the pre-school children with HI.

4.2.1 Age of the Pre-School Children with Hearing Impairments
The researcher, through the parents, sought to find out the age of the pre-school children and the responses are presented in Figure 4.1.
How old is your child?

4.2.2 Age of the Children at Onset of the Hearing Impairments

The researcher sought to establish the age at onset of the deafness from parents of pre-school children. Ten of the parents representing (100%) reported that their children acquired HI at three years or below. A hearing impairment that occurs below the age of three is quite devastating and has a negative effect on language acquisition. This finding supports Kihingi (2008), who stated that the development of language of children with HI is rarely natural and automatic especially those who are prelingually deaf (deafened...
before acquisition of language). That seems to be the case in the study where all the pre-school children sampled were prelingually deaf. Perhaps that situation where the children were prelingually deaf could have contributed to communication problem since the care providers lacked a common language for communication with the pre-school children with HI.

4.2.3 Placement of Pre-school Children with Hearing Impairments

Through observations, the researcher found out that pre-school children were placed in two different classes (pre-school 1 and pre-school 2). Children in Pre-school 1 had been in pre-school for at least one year and eight months. Those in pre-school 2 had been in the pre-school for less than a year. Information concerning placement of the pre-school children with HI is presented in Figure 4.2. The children were in pre-school 1 and pre-school 2 with a percentage of 6(60 %) and 4(40 %) respectively. The schools involved were both private and public with equal representation. The teachers informed the researcher that the children who were in pre-school 1 were to join primary school in the following year and were expected to have mastered a mode of communicating as they joined primary school.
Figure 4.2: Placement of pre-school children with hearing impairments

The researcher also noted that the classes where the pre-school children were placed were poorly lit and the instructions were ordinary without paying any special attention to the children with HI. Dockrell and Messer (2004), reports that persons with HI need a well ventilated room with enough illumination so that they can lip read the teacher well. Good lighting is also necessary to enable the person with HI to see signs or gestures. Although Dockrell and Messer (2004), stresses on the adaptations for learners with HI, instructions in the pre-school classes were not adapted to suit learners with HI. Their sitting arrangements were also not catered for, as majority of the children sat far from the teachers.
4.2.4 Teachers' Highest Academic Qualifications

The researcher inquired from the pre-school teachers about their highest academic qualifications and their responses are as shown in Figure 4.3. Two teachers representing 20% had diploma in ECDE, 3 teachers (30%) had P1 certificates, 3 teachers (30%) had certificate in ECDE and only 2 teachers (20%) were untrained. Although 80% of the teachers were highly qualified, on probing further as to whether the pre-school teachers were trained in Special Needs Education (SNE), all 80% who were found to have training in ECDE, none reported to have been trained in SNE.

Figure 4.3: Teachers' highest academic qualifications

The Task Force on Special Education (MoEST, 2003) revealed that only 20% of teachers found teaching in special Needs Education (SNE) programmes were trained in SNE. Despite the training aspect, most of them lack proficiency in Kenyan Sign Language (KSL), the language which can enable someone to communicate well with a person with HI. Most of the teachers in
special institutions tend to use oral methods than sign language not only outside class but within the classroom setting. It is likely that the lack of training in SNE for most of the pre-school teachers who were entrusted with the education of the pre-school children with HI in regular pre-schools may interfere with pre-school child’s language development. This is a fact because a child requires interaction with care providers to develop language (Laura, 2010).

4.2.5 Teachers’ Duration of Teaching the Pre-school Children with Hearing Impairments

The researcher sought to find out the duration the pre-school teachers had taught the pre-school children with HI. Table 4.1 summarizes respondents’ percentage representations.

Table 4.1: Teachers’ Duration of teaching the pre-school child with hearing impairments

<table>
<thead>
<tr>
<th>Responses</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>below 1 year</td>
<td>4</td>
<td>40.0</td>
</tr>
<tr>
<td>Above 1 year</td>
<td>6</td>
<td>60.0</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>100.0</td>
</tr>
</tbody>
</table>

As presented in Table 4.1, among the pre-school teachers who were found teaching the sampled children, 6 of them representing (60%) had taught pre-school children with HI for a period of 1 year and above and the other 4 (40%) had taught them for a period of less than one year. The finding is similar to what MoEST (2005) highlighted as among the challenges facing ECDE. There is a high turnover of about 40% of the trained teachers due to poor
remuneration and lack of support in terms of salaries and job security. From the study, a similar number of teachers (40%) have taught the children for less than one year. The period of time the teacher may have taught the child with HI, may have an influence on the communication of the child with HI.

4.3 Communication of Pre-school Children at Home and School
The researcher sought to find out the modes of communication pre-school children with HI used, modes of communication parents/guardians of those children used and the modes used by pre-school teachers as they communicated with pre-school children with HI.

4.3.1 Teachers and Parents Responses on Mode of Communication Pre-school Children Preference
The researcher sought to know from both the pre-school teachers and the parents/guardians the mode of communication the pre-school children with HI preferred using. The teachers' responses are shown in Table 4.2.

Table 4.2: Teachers responses on modes of communication pre-school children preferred

<table>
<thead>
<tr>
<th>Responses</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual</td>
<td>7</td>
<td>70.0</td>
</tr>
<tr>
<td>Oral- aural</td>
<td>3</td>
<td>30.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

As presented in Table 4.2, when the pre-school teachers were asked their opinions on the mode of communication the pre-school children with HI preferred to use, majority 7 (70%) said that the children preferred manual
communication while 3 (30%) preferred oral/aural method. The parent’s responses are shown in Table 4.3

Table 4.3: Parents responses on modes of communication pre-school children preferred

<table>
<thead>
<tr>
<th>Responses</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual</td>
<td>6</td>
<td>60.0</td>
</tr>
<tr>
<td>Oral</td>
<td>3</td>
<td>30.0</td>
</tr>
<tr>
<td>Total Communication</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

As presented in Table 4.3, the parents indicated that the pre-school children’s preferred manual method at 6 (60%) while only 3 (30%) preferred to use oral methods. One parent representing (10%) reported that the pre-school children preferred using other modes among them beckoning, pantomime; acting, drama, just to mention a few. The modes according to the researcher had an aspect of Total Communication. The same is reflected by the observation where the researcher noted that 9 (90%) of the pre-school children communicated with peers and teachers in the school where majority 7 (77.78%) were using manual and only 2 (22.22%) were using oral-aural methods. This findings are supported by (VAANI, 2010) who observed that manual communications include sign language, gestures, signs, signed language and natural signs. From the researcher’s observations, none of the pre-school children with HI had a hearing aid. Learners support through auditory avenue involves the use of optimally functioning hearing aids and the auditory training where the child with HI develops sound discrimination skills like other children. Discrimination of sound is possible only after hearing,
assisting children with HI with hearing aids would allow the child with residual hearing benefit from hearing.

4.3.2 Teachers’ Preferred Mode of Communication

The researcher sought to know how the pre-school teachers communicated with the pre-school children with HI. The teachers’ responses are shown in Table 4.4.

**Table 4.4: Teachers communication with pre-school children**

<table>
<thead>
<tr>
<th>Responses</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual</td>
<td>4</td>
<td>40.0</td>
</tr>
<tr>
<td>Oral-Aural</td>
<td>6</td>
<td>60.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

More than half of the pre-school teachers 6 (60%) preferred using oral-aural methods while 4 (40%) used manual methods. The findings in this study are supported by Kihingi (2008) who reported that most teachers are comfortable in using oral communication compared to sign language during teaching and learning activities. However, the findings differed with the study by NDCS (1996) in UK on communication policies in deaf units, which indicated that 48% used TC, 23% used oral, and 13% used bilingualism while 16% declined to respond. In the current study, the use of TC was not applied probably because majority of the teachers were not aware of the philosophy, taking into account the fact that the teachers lacked training in SNE, where they would be acquainted to the philosophy of TC.
4.3.3 Other Family Members’ Preference Mode of Communication

The researcher was sought to find out if the parents/guardians communicated with the pre-school children with HI in the same way as they did with other members of the family. The parent’s responses are as presented in Figure 4.4.

![Bar Chart]

**Figure 4.4 Other family members’ preference mode of communication**

Parents were asked whether they communicated with their pre-school children with HI, using similar methods as the other family members. Majority of the parents 8 (80%) indicated that they did not use similar methods to communicate with their children with HI while only 2 (20%) of the parents said they used oral methods during communication. On probing further, the researcher asked how the parents/guardians then communicated with the pre-school children with HI. The responses are represented in Table 4.5.
Table 4.5: Parent/guardian mode of communication with pre-school children

<table>
<thead>
<tr>
<th>Responses</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestures</td>
<td>8</td>
<td>80.0</td>
</tr>
<tr>
<td>Oral</td>
<td>2</td>
<td>20.0</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The researcher inquired on how the parents/guardians communicated with the pre-school child with HI. Majority 8 (80%) of the parents/guardians used gestures and only 2 (20%) used oral methods. Marschark & Spencer (2003) notes that early interaction for children with HI and their families is critical for developing the child’s language and social and academic ventures. The use of gestures alone for communication with pre-school children may not be enough to allow the child develop proper language for social academic skills. It is likely that the parents/guardian in this study might have been using manual methods since they had all the time with the individual child when at home compared, to the teacher who had to teach the child with HI and also other children (without any hearing impairments) and who may have diverse educational needs.

4.4 Communicative Strategies
Speri (2000) describes communicative strategies as mechanisms that individuals with HI use to minimize communication difficulties. The study sought to find out the strategies the pre-school children with HI used, as well as strategies employed by teachers and parents/guardians to overcome...
communication difficulties in their communication. The findings are presented as follows:

4.4.1 Communicative Strategies Used by Pre-school Children
The researcher sought to know from the teachers whether the children with HI communicated with other children and other members of the school. All 10 teachers representing (100%) reported that the children did communicate while in school. Further, the researcher inquired on the different strategies the pre-school children with HI employed to enhance communication. The findings are as indicated in Table 4.6.

Table 4.6: Communicative strategies used by pre-school children

<table>
<thead>
<tr>
<th>Responses</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual</td>
<td>2</td>
<td>20.0</td>
</tr>
<tr>
<td>Visual using signs</td>
<td>4</td>
<td>40.0</td>
</tr>
<tr>
<td>Vibro-Tactile</td>
<td>3</td>
<td>30.0</td>
</tr>
<tr>
<td>Passive/blank stare</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Four of the sampled teachers representing (40%) said the children used visual as well as signs as a strategy. Visual strategies using signs specifically involved use of signs in the child’s visual field. Three (30%) of the teachers reported that the pre-school children used Vibro-Tactile strategies. Tactile strategies included taps, strokes, touch on the other children or knock/bangs on an object creating vibrations. Two teachers representing (20%) reported that the children used visual strategies. Visual strategies involved activities that were within the child’s visual field. Only 1 teacher (10%) reported that the
children used passive/blank stare as a strategy during communication. This strategy involved the pre-school children with HI observing the other children may be with the hope they will respond, but doing nothing. The researcher noted that the strategies used by the pre-school children with HI were the same strategies used by the hearing people while they try to overcome their communication difficulties with the HI. Perhaps the pre-school children resorted to the use of the strategies because they lacked voice when calling for attention. These findings are supported by Waxman and Spencer (1997), who highlighted similar strategies used by persons with HI in communication.

The researcher noted through observation that pre-school children with HI used strategies shown in Table 4.7 during their interaction with parents/guardians, peers, teachers, relatives and neighbours.

Table 4.7: Pre-school children overcoming communication challenges

<table>
<thead>
<tr>
<th>Responses</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Withdrawal</td>
<td>8</td>
<td>80.0</td>
</tr>
<tr>
<td>Imitation</td>
<td>2</td>
<td>20.0</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The researcher noted that the children with HI seemed to overcome their communication difficulties in different ways. Eight children representing (80%) used withdrawal. Some of those children shrugged their shoulders, threw hands, exhibiting facial expression that indicated helplessness or did totally nothing when faced with a communication challenges. Others were
busy doing their own things from the rest of the class, probably this gave them consolation as they engaged in something they were comfortable with. The remaining 2 (20%) used imitation to overcome their communication challenges. In several cases children with HI were found to be engaging in activities after observing what their peers were doing. For instance they could only stand up after seeing others stand. Some children remained seated until they noted other children moving to some other places when it was time perhaps to change activities.

4.4.2 Communicative Strategies Employed by the Teachers
The researcher inquired from the teachers on the strategies they employed in class to overcome communication challenges. The responses are summarized in Table 4.8. Since the teachers also encountered challenges during communication, they were asked how they overcame their challenges as they communicated with children with HI. Some 3 teachers (30%) said they learnt Kenyan sign language (KSL) through consulting other teachers who had basic knowledge about KSL. Four of the sampled teachers representing (40%) depended on other children who functioned as interpreters and eased the communication challenges, while those who became helpless and just assumed the learners intentionally were 2 representing (20%). A minimal of one teacher representing (10%) made wild signs to overcome his/her communication challenges.
Table 4.8: Communicative strategies employed by the teachers

<table>
<thead>
<tr>
<th>Responses</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learn KSL</td>
<td>3</td>
<td>30.0</td>
</tr>
<tr>
<td>Neglect</td>
<td>2</td>
<td>20.0</td>
</tr>
<tr>
<td>Depend on other</td>
<td>4</td>
<td>40.0</td>
</tr>
<tr>
<td>children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Make own signs</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

The responses revealed that most teachers used all possible means to overcome communication challenges they encountered. The finding concurs with Laura (2010) who states that the main purpose of communication is to provide and solicit information.

4.4.3 Pre-school Children Overcoming Communication Difficulties
The parents were asked how the pre-school children with HI overcame their difficulties encountered during communication. The parents/guardians responses are as in Table 4.9.

Table 4.9: Ways pre-school children overcame communication difficulties

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guessing</td>
<td>2</td>
<td>20.0</td>
</tr>
<tr>
<td>Passivity</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>Withdrawals</td>
<td>5</td>
<td>50.0</td>
</tr>
<tr>
<td>Seek help from</td>
<td>2</td>
<td>20.0</td>
</tr>
<tr>
<td>mother</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Results revealed that 5 (50%) of the children with HI overcame their communication difficulties through withdrawing from any engagement that concerns communication. The children were reported as mostly resorting to doing their own activities. Two of the children representing (20%) sought help from their mothers and a similar percentage guessed what was being communicated to him/her. A minimal number 1 representing (10%) of pre-school children was passive in overcoming his/her communication difficulties. Passivity, withdrawal and seeking help from the mothers could be interpreted as part of the pre-school children’s personality trait. This was particularly portrayed as a means of protecting self image and avoiding embarrassment. The finding are supported by Hwaga (2008) who explains that Language deficiencies can also influence the child with hearing impairments personality and social development since communication process greatly affects person to person interaction and as such foster social development.

4.4.4 Parents/Guardian Overcoming Communication Difficulties
The researcher sought to know from the parents/guardians how they overcame any communication difficulties encountered during communication with pre-school children at home. Their responses are presented in Table 4.10.

<table>
<thead>
<tr>
<th>Responses</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guessing</td>
<td>4</td>
<td>40.0</td>
</tr>
<tr>
<td>Passive/blank stare</td>
<td>6</td>
<td>60.0</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Some parents overcame their communication difficulties through using different strategies. Four parents representing (40%) used guessing as a strategy to try and understand what the child was communicating. Those who used passive/blank staring as a strategy were 6 parents representing (60%). Findings by Harris & Mohay (1997) highlight other strategies used by mothers of children with HI for attention-gaining. For example mothers with HI are three to five times more likely to use the strategy of physical tapping to their children to draw their attention. Tapping is quite ideal in situations where the speaker is not in the child’s visual periphery.

4.5 Challenges Pre-school Children with Hearing Impairment Faced During Communication

The researcher observed pre-school children with HI to identify any communication challenges they could be experiencing. The researcher also tried to find out challenges that teachers and parents encountered during communication and the specific difficulties encountered in each case.

4.5.1 Pre-school Children’s Understanding of Information Communicated
The researcher had observations of the pre-school children with HI, during classroom teaching and as they had out-door activities. The researcher noted in her observations that not all 10 (100%) of the pre-school children had difficulties in communication. The observations focused on how the learners were able to understand information that was communicated to them. The results are shown in Table 4.11.
Table 4.11: Pre-school children’s understanding information communicated

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>5</td>
<td>50.0</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>50.0</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Through observation, the researcher noted that 5 of the pre-school children (50%) did not seem to understand what they were told and the other 5 children (50%) did understand what they were told. The researcher noted further that the 50% of the children who did not understand what they were told had different responses to whatever they were told as indicated in Figure 4.5.

Figure 4.5: Pre-school children indication of lack of understanding

Among the 5 (50%) of the pre-school children who did not respond to whatever they were asked, 1 (10%) did different tasks from what was asked.
A similar percentage did not understand instructions. Likewise 1 (10%) seemed to imitate what others were doing without understanding. For instance the pre-school child would stand just because the neighbour had stood although the teacher had specifically asked the hearing child to stand or the child with HI is seen being made to remain standing as they sat though not meant to be seated. Another 1 child representing (10%) looked confused and the last 1(10%) had language barriers which hindered understanding of information. This implies that pre-school learners with HI may encounter many educational challenges due to lack of understanding since almost all examinations in our country are written. Wanjau (2005), who concluded that learners with HI experience many challenges in the course of learning due to their HI, concurs with this study findings.

4.5.2 Communication Difficulties Encountered by Pre-school Children

The researcher inquired from the parents whether the pre-school children with HI encountered any difficulties when communicating with other family members, relatives or peers. The responses are as shown in Table 4.12.

Table 4.12: Communication difficulties encountered by pre-school children

<table>
<thead>
<tr>
<th>Responses</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>9</td>
<td>90.0</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>100.0</td>
</tr>
</tbody>
</table>
When the parents were asked if they thought the pre-school children with HI had any difficulties communicating with family members, relatives and peers, majority 9 (90%) said the children had difficulties. The parents stated that the pre-school children were most of the time not understood by the family members, relatives or peers. In other cases the children themselves seem not to grasp what the family members, relatives or peers wanted them to get. Only 1 of the parent representing (10%) said pre-school children had no difficulties in their communication with peers, relatives and family members. The parent reported that there is a way of communication which most of the members have improvised to ensure they communicate with the pre-school child with HI.

On probing further, the parents reported that language barriers and lack of patience were among the specific difficulties the pre-school children with HI encountered as shown in Table 4.13.

Table 4.13: Pre-school children’s specific communication difficulties

<table>
<thead>
<tr>
<th>Specific Communication Difficulties</th>
<th>Responses Frequency</th>
<th>Response Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language barrier</td>
<td>7</td>
<td>70.0</td>
</tr>
<tr>
<td>Lack of patience</td>
<td>3</td>
<td>30.0</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Seven parents representing (70%) reported that pre-school children had language as a specific difficulty. The researcher also found out that all the sampled pre-school children with HI were from hearing parents. Children with
HI from parents who are deaf found it easy to communicate with sign language since it is their first language thus becomes their mother tongue. Glietman, Fridlund and Reisberg (2004) explains that babies born of parents who are deaf and are users of sign languages (whether the babies themselves are deaf or not) pick up the systems from the care providers, through informal interaction rather than by explicit instructions just as people learn spoken language. Similarly, Okombo et al., (2006) state that deaf children acquire sign language at the same rate in which the hearing children acquire spoken language (provided they are exposed to sign language). This may explain why majority of the pre-school children had problems in communication, since they had no opportunity to gain language informally through interaction with parents, siblings, caregivers, peers and other members of their language community.

The other 3 parents/guardians representing (30%) reported lack of patience as a specific difficulty. For instance the pre-school child would ask for something several times and finally give up when not understood, they threw hands and turned their head away from the other party. On the other hand, those dealing with the pre-school children with HI lacked patience since the child with HI requested for repetition severally causing the hearing person to lose patience.

4.5.3 Teachers Understanding of Information From Pre-School Children
The researcher asked the teachers whether they always understood what the pre-school child with HI wanted as he or she was communicating to them. The teachers’ responses are as shown on Figure 4.6.
Figure 4.6: Teachers understanding of information from pre-school children

Five (50%) of the teachers said they sometimes understood, 4 (40%) said they did not understand while only 1 (10%) of the teachers said she/he understood what the pre-school children with HI wanted. The teachers also reported to have encountered challenges or difficulties when the pre-school child with HI was communicating with them. Although MoEST (2001), asserts that it is imperative that a child with HI in pre-school be taught by someone who is skilled in the use of sign language, this seems not to be the case in the regular pre-school that the researcher sampled. The challenges highlighted in this study by all 10 (100%) of the teachers were language barriers brought about by teachers' lack of proficiency in Kenyan Sign Language (KSL). Many
teachers were not skilled in KSL and on top of that they lacked motivation to learn sign language.

4.5.4 Parents/Guardian Understanding of Pre-School Children

The researcher sought to find out from the parents/guardians whether they understood what the pre-school children with HI wanted. The types of responses are as indicated in table 4.14. Majority 9 (90%) of parents reported that when they were communicating with the pre-school children with HI, they sometimes understood what the children wanted while 1 parent (10%) said that he did not always understand what the pre-school child with HI wanted.

Table 4.14: Type of responses on parents/guardian understanding of pre-school children

<table>
<thead>
<tr>
<th>Type of Responses</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>Sometimes</td>
<td>9</td>
<td>90.0</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The finding is in line with Laura (2010), who stresses that the interaction between the children and their primary care provider is critical in developing firm language foundation necessary for communication. Lack of understanding in the current study may be due to lack of training in KSL for the parents/guardian.
4.6 Impact of Hearing Impairments on Effective Communication Among Pre-school Children

The responses were sought from both the parents/guardians and the teachers. They were to explain how they thought HI affected the pre-school children with HI.

4.6.1 Parents/Guardians' Opinion on How Hearing Impairments Affected Pre-school Children

The parents/guardians were asked whether they thought HI affected the pre-school children with HI. All the parents/guardians 10(100%) were of the opinion that HI hindered the child with HI from accomplishing different activities when compared with the other hearing peers. On further questioning how the HI affected the pre-school children, the parents/guardians revealed that low performance and slow learning did affect the learners as indicated in Figure 4.7. Five (50%) of the parents/guardians indicated that the pre-school child with HI had low performance and a similar number stated that the pre-school children with HI were slow in learning. According to NDCS (2004), research has shown that the greatest influence on the child's learning is the attitudes of their parents. However, Hoffmeister (2006) in discussing sign language and education of the children with deafness, states that education of the deaf has always been embroiled in issues concerning language. Hoffmeister also concludes that accessibility to a language is the paramount issue in acquiring a language thus becoming the foundational issue to educating a deaf child.
This research finding is a reflection of the same, where language has an influence on the education of the pre-school child with HI as reported by the parents.

4.6.2 Effects of Hearing Impairments on Pre-school Children's Studies
The researcher inquired from the teachers on how they thought hearing impairment had affected the studies of the pre-school child with HI. The teachers' responses are as shown in figure 4.8. Regarding the ways the teachers thought hearing impairments had affected the studies of the pre-school children. Slightly over half 6 (60%) of the teachers were of the opinion that it had resulted to low performance where the pre-school children were less active in class activities. Three (30%) of the teachers reported children to be
slow in learning where they only copy what others were doing. Only 1 (10%) of the teachers said that HI had no effect on the pre-school child’s studies. Wanjau (2005) had similar conclusions that HI interferes with normal language development and communication thus affecting both receptive and expressive language which is necessary for learning. While focusing on ways through which pre-school children learnt better, Mwangi (2007) in her finding indicates that scaffolding process plays a key role in pre-school learning. She found that 64.2% of pre-school children learnt through direction and 12% through encouragement by the teacher. The teacher thus should communicate with the pre-school child with HI. Perhaps lack of a common language between the teacher and the pre-school child with HI which had been highlighted in the current study hinders knowledge acquisition.
4.7 Summary
The research findings indicated that pre-school children with HI preferred manual modes during communication. They used communicative strategies that involved limited use of language. Majority of the children encountered communication difficulties. The respondents highlighted language barriers as a contributing factor to communication challenges. Lastly hearing impairments have effects on pre-school children with HI leading to low performance and slow learning.

Figure 4.8: Effects of hearing impairments on pre-school children’s studies
CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction
The chapter presents the summary of findings, implications of the study, conclusions, the recommendations of the study and areas for further research. It was done in five parts. The first part focused on summary of the whole study, followed by the implications of the study, conclusions drawn from each objective, the recommendations of the study and finally the areas for further research.

5.2 Summary of Findings
The study sought to investigate how pre-school children with HI communicated at home and in school. The research set out to establish communicative strategies that pre-school children with HI employed in their interactions. Further, it sought to establish the impacts of HI on effective communication among pre-school children with HI and finally, the study sought to determine the constraints faced by pre-school children with HI during their communication both at home and in school.

The target population was all pre-school children with HI, their parents/guardians and their teachers from Kirinyaga County. The total sample size was 30 respondents. Since the number of the respondents was not large, the researcher used interviews to collect data from the parents/guardians and the teachers. Observations were used to collect data from the pre-school
children. A pilot study was conducted in Kirinyaga Central District and involved four pre-school children with HI their parents/guardians and their teachers.

The study findings were analyzed and some comparisons of responses from the teachers, parents/guardians and researcher’s observations were made.

5.2.1 Demographic Information
The finding of the study, regarding how pre-school children with HI communicate at home and in school indicated that: All the sampled pre-school children with HI had acquired deafness at an age of 3 years and below, were all above 4 years of age, Sixty per cent of the pre-school children had only 4 months to be promoted to primary school and a similar percentage of the teachers had taught the children for more than a year. The teachers who have been teaching the pre-school children for duration of one year and above may be better placed in explaining the communication difficulties such children experienced. Majority 80% of the pre-school teachers have some training of some kind (20% had diploma in ECDE, 30% had P1 certificates, 30% had certificate in ECDE) although none was specially trained in Special Needs Education (SNE).

5.2.2 Communication at Home and in School
On modes of communication, the study found out that the pre-school children with HI preferred manual modes of communication, majority of the parents/guardians also used manual (gestures) but more than half of the teachers preferred oral-aural methods (cf 4.3.).
5.2.3 Communicative Strategies
The pre-school children use strategies that applied limited language (withdrawal, visual and vibro-tactile) probably due to language barriers. Only 30% of the teachers used sign language as a strategy, while slightly over half of the parents used passive/blank stares as a strategy.

5.2.4 Challenges in Communication
Ninety per cent of the pre-school children encountered communication difficulties as a result of language barriers. Similarly, only 10% of the teachers seemed to understand what the pre-school child with HI wanted. All of the parents/guardians representing 100% either never understood what the pre-school children wanted or sometimes understand the children wanted (cf.4.5).

5.2.5 Impact of Hearing Impairments
From majority of the respondents, language barrier was highlighted as a contributing factor to the communication challenges facing pre-school children with HI. Both parents/guardians and the teachers indicated that hearing impairment has an effect on the pre-school children with HI. The highlighted effects of HI on the pre-school children were low performance and slow learning

5.3 Conclusions of the Study
As noted in the preceding section, (cf. 5.2) all the pre-school children sampled were below 3 years on the onset of the hearing impairment, and therefore, prelingually deaf. The children were all above 4 years, thus being prepared to join primary school. Perhaps that situation may contribute to communication
problems especially if the care providers lack a common language for communication with the pre-school child with HI.

It was also noted (cf.4.2) that majority of the pre-school teachers had some training of some kind (diploma in ECDE, PI certificates and certificate in ECDE) although none was specially trained in Special Needs Education (SNE). It is likely that the lack of training in SNE for most of the pre-school teachers in the regular pre-schools who were entrusted with the education of the pre-school children with HI, may interfere with pre-school child's language development. Children need to interact with care providers to develop language.

The study found out that pre-school children with HI preferred manual modes of communication, majority of the parents/guardians also used manual (gestures) but the teachers preferred oral-aural methods (cf.4.3) probably because the teachers were teaching very many children in the classes and also had not been trained in sign language. It is likely that the parents/guardians might be using manual methods since they had all the time with the individual child when at home. The teacher who had to teach the child with HI and also other children (without any hearing impairment) and who may have diverse educational needs might not have had all the time. A minimal number of the parents used Total Communication, probably because majority of the respondents were not aware of the philosophy.
In reference to chapter four (4.4), the pre-school children used strategies that applied limited language such as withdrawal, probably due to language barriers. Minimal number of teachers on the other hand learnt how to sign as a strategy. Maybe because training in Special Needs Education was not readily available to those teachers or the teachers could not afford to attend the courses offered on sign language since they were mostly employed privately and had no job security. The parents used guessing strategies perhaps because they were not sure what the child wanted and they had all the time to seek what the pre-school child with HI wanted.

As highlighted in the discussion of findings, Majority of the pre-school children encounter communication difficulties as a result of language barriers. Similarly, only 10% of the teachers seemed to understand what the pre-school child with HI wanted and all the parent/guardian either never understood what the pre-school children wanted or sometimes understood what the pre-school children wanted. From all the respondents, language barrier was highlighted as a contributing factor to the challenges. Language barriers may be as a result of lack of training in KSL for both the parents/guardians and the teachers in the regular pre-school.

Finally, both the parents and the teachers indicated that hearing impairment had an effect on the pre-school children with HI. The highlighted effects were low performance and slow learning. Since there is need to communicate knowledge, perhaps lack of a common language between the teacher and the pre-school child with HI hinders knowledge acquisition.
5.4 Implications of the Study
Inability of care providers to use common language with pre-school children with HI will likely have a negative impact on language development of pre-school children with HI. Second, language does not develop in isolation. Although every individual has an innate ability to develop language termed as Language Acquisition Device (LAD), the environment also plays a key role. The interaction of the primary care provider for a firm language foundation is necessary (Laura, 2010). Owing to the fact that regular pre-school teachers were not trained in SNE, this had resulted in majority of teachers using oral methods while teaching and thus limiting interaction with the pre-school children with HI communication. This indirectly affects pre-school children’s understanding and academic performance. The strategies used by pre-school children with HI, parents/guardian and peers are limiting and may hinder proper understanding of intended information. The teachers may need to acquaint themselves with necessary skills to help them communicate using manual methods.

5.5 Recommendations
The study puts forward the following recommendations to alleviate the communication problems faced by pre-school children with HI:

i. All stakeholders in the education of pre-school children with HI should ensure that parents and pre-school teachers in regular pre-school are trained in sign language where proficiency in KSL is emphasized. This may help in the Scaffolding process in the language development of pre-school children with HI, because hearing impairment is said to
interfere with normal language development and hinders normal interactions with persons with HI.

ii. Since communication is a major difficulty the pre-school children are facing, the Ministry of Education (MoE) should ensure that the KSL curriculum for pre-school children is also in use in regular pre-schools in cases where a pre-school child with HI has been placed. This will equip the pre-school children with language skills at an early age just as other hearing children.

iii. All teachers teaching pre-school children with HI should be encouraged to use manual methods of communication, since persons with HI prefer such modes especially those without a hearing aid.

iv. All stakeholders should be sensitized on the need to use any mechanism (strategy) possible to enhance communication. Workshops and seminars should be organized to equip the care providers with skills such as visual using signs and tactile to be used in enhancing communication with pre-school children with HI.

v. The MoE should come up with strategies to enhance performance of pre-school children with HI. Sign language can be introduced at all levels so that anyone who encounters such a child with HI is able to communicate, since learning is not limited to a classroom.

5.6 Areas for Further Research

i. Research can be done to establish whether the pre-school children with HI taught by teachers who are no trained in SNE are given the
materials necessary to perform well academically since pre-school is the foundation for primary learning.

ii. A research can be done to find out the services offered by the Educational Assessment Resource Centres (EARCs) in equipping the teachers and parents/guardians of pre-school children (placed in regular pre-school) with HI with skills to allow the children develop their language.
REFERENCE


Www.guide.2kenya.com/information/74/...(2010). Kirinyaga County
APPENDIX A

INTERVIEW GUIDE FOR TEACHERS

I would like to ask you several questions to help understand how the pre-school children with HI communicate while at school.

1. What is your highest professional qualification?

2. Do you have any training in Special Education?

3. For how long have you taught the pre-school child with hearing impairment?

4. How do you communicate with the child with hearing impairment?

5. When the child is communicating to you, do you always understand what he/she wishes to communicate?

6. What mode of communication does the pre-school child with HI prefer to use?

7. What challenges or difficulties do you encounter when the pre-school child with hearing impairment is communicating with you?

8. What do you do as a teacher to overcome communication challenges encountered in your class if any?
9. (a) Does the child communicate with other children or members in the school?

(b) If yes how?

10. In what ways has hearing impairment affected the studies of the child?

11. What do you think can be done to enhance communication with the child while in school?
APPENDIX B

INTERVIEW GUIDE FOR PARENTS/ GUARDIANS

The researcher will use probes in questions where the information from the parent/guardian seems inadequate.
1. How old is your child? ………………………………

2. What was the age of the child at the onset of the hearing impairment?
…………………………………………………………………………………………………………………………………………………………………..

3. (a) Do you communicate with your child in the same way as you do with other members of the family?

   Yes [ ] No [ ]

   (b) If NO, then how do you communicate with him/ her?

   Touch [ ] Signing [ ] Observing/Waiting [ ]
   Gesture [ ] Teaching [ ]
   If any other please specify……………………………………………………………………………………………

4. When communicating with your child, do you always understand what he/she wants?

   Yes [ ] Sometimes [ ] No [ ]

   (b) What hinders understanding if any…………………………….?

5. Which mode of communication does your child prefer using as you interact with him/her?

   Oral [ ] Manual/singing [ ] Total communication [ ]

6. Does your child seem to encounter any difficulties when communicating with your family members, relatives or peers?

   Yes [ ] No [ ]
7. How does he/she overcome the difficulties if any? .................................................................
........................................................................................................................................
........................................................................................................................................

8. How do you as a parent/guardian overcome communication challenges faced while interacting with your child? ........................................................................................................................................
........................................................................................................................................
........................................................................................................................................

9. Does he/she relate with other members of the family?

Yes [ ] No [ ]

If not, what could be the cause? .................................................................................................
........................................................................................................................................
........................................................................................................................................

10. Does the hearing impairment hinder your child from accomplishing any of his set goals?

Yes [ ] No [ ]

Explain more on your response .................................................................................................
........................................................................................................................................
........................................................................................................................................

11. Does your child play with others?

Yes [ ] No [ ]

If Yes how would you describe their communication during play? .................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................

12. What do you think can be done to enhance communication with your child?

........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
APPENDIX C

OBSERVATION SCHEDULE

1. Pre-school child’s class
   Pre-school 1 □
   Pre-school 2 □
   Baby class □

2. Category of school
   Public □ Private □

3. What language does the child use to communicate with the teacher, parent/guardian, peers, relatives/neighbours?
   .............................................................
   .............................................................
   .............................................................
   .............................................................
   .............................................................
   .............................................................
   .............................................................
   .............................................................
   .............................................................

4. What communicative strategies does the child use?
   .............................................................

5. Does the child seem to understand what he/she is told?
   Yes □ No □
   Explain if No .............................................................
   .............................................................
   .............................................................
6. Does the listener seem to understand what the child is saying?

7. Does the child seem to have challenges during communication?
   Yes [ ] No [ ]

8. How does he/she seem to counter the challenges? ......................

9. Does the child communicate with other members in the school?
   Yes [ ] No [ ]
   If Yes
   how..........................................................
   ..........................................................
   ..........................................................
   ..........................................................
   ....................

10. Does the child relate with other members in the home/ neighbourhoods?
    Yes [ ] No [ ]
    If yes
    how?................................................................
    ................................................................
    ................................................................
    ................................................................
    ................................................................
    ................................................................
    ................................................................
    ..............................
    ..............................
    ..............................
    ..............................
    ..............................
RESEARCH AUTHORIZATION LETTER

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telegram: "SCIENTECH", Nairobi
Telephone: 254-020-241349, 2213102
254-020-310571, 2213723.
Fax: 254-020-2213215, 318245, 318249

When replying please quote:
Our Ref:
NCST/RRI/12/1/SS-011/1004

Jane Muthoni Gitonga
Kenyatta University
P.O BOX 43844-00100
Nairobi

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "An investigation into how pre-school children with hearing impairments in Kirinyaga County (Kenya) communicate at home and in school" I am pleased to inform you that you have been authorized to undertake research in Kirinyaga District Kenya for a period ending 30th August, 2011.

You are advised to report to District Commissioner, the District Education Officer, Kirinyaga District before embarking on the research project.

[Signature]

Dr. M. K. Rugutt, PhD, DSc
FOR/SECRETARY/CEO

Copy to:
The District Commissioner
Kirinyaga District

The District Education Officer
Kirinyaga District

Date: 13th July, 2011