CONSTRAINTS TO INCLUSION OF STUDENTS WITH HEARING IMPAIRMENTS FOR TRAINING AT KENYA TECHNICAL TEACHERS’ COLLEGE

BY

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MARCH 2009
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Constraints to inclusion of students
DECLARATION

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

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This work is especially dedicated to God the Almighty for enabling me to go this far. Then to my dear husband, Joseph Kimathi, my lovely daughter Sharon Makena and beloved son Kelvin Mutuiri.
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<th>Full Form</th>
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<tr>
<td>CCSA</td>
<td>Center for Curriculum Studies in Africa</td>
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<tr>
<td>dB</td>
<td>Decibels</td>
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<td>HI</td>
<td>Hearing Impairments</td>
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<td>HOD</td>
<td>Head of Department</td>
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<td>KNAD</td>
<td>Kenya National Association of the Deaf</td>
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<td>KTTC</td>
<td>Kenya Technical Teachers College</td>
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<tr>
<td>MOE</td>
<td>Ministry of Education</td>
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<td>MOEST</td>
<td>Ministry of Education Science and Technology</td>
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<tr>
<td>NGO</td>
<td>Non Governmental Organization</td>
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<tr>
<td>SNE</td>
<td>Special Needs Education</td>
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<tr>
<td>UNESCO</td>
<td>United Nations Educational Scientific and Cultural Organization</td>
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<td>US</td>
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ABSTRACT

The education of learners with hearing impairments started in Kenya in 1958. To date they lack access to middle level training after acquiring a crafts certificates course in the two vocational institutions for the hearing impaired. With the global trend of inclusive education, it is possible for regular training institutions in general and Kenya Technical Teachers College in particular to offer further training for them. The purpose of the study was to establish constraints to inclusion of students with hearing impairments for training at Kenya Technical Teachers college and make suggestions for facilitation of more persons with hearing impairments to train as technical teachers than it is presently. This was done by examining various variables using descriptive survey design and a target population of eight hundred and fifty students, one hundred and seventeen lecturers, twelve heads of departments, one principal and three old students of Kenya Technical Teachers' college with hearing impairments. Sampling techniques used to arrive at the sample size were purposive sampling to select the principal and heads of departments, stratified then random sampling to select students and teachers respondents and snowball to select old students with hearing impairments. The sample size constituted eighty five students (forty five males, forty females), twelve teachers (six males, six females), eleven heads of departments, one principal and two old students with hearing impairments. Data were collected using questionnaires for students, lecturers and heads of department. Interview guides for the principal and old students with hearing impairments and observation checklists for lessons and physical facilities. A pilot study was conducted in the same institution using one department that was excluded from the main study. The purpose was to ensure validity and reliability of the instruments in which reliability of 0.8 was obtained. Being a descriptive survey, the objectives generated descriptive data which was measured using descriptive statistics such as frequencies and percentages. The study revealed that the teaching learning resources were inadequate and most of them unsuitable; no teacher was trained in special needs Education or conversant with sign language. There were no support services in the institution. The teaching – learning strategies that were being used required adjustments to cater for students with hearing impairments. There was no policy on special education to stimulate implementation of inclusive education. The results of the findings led to the conclusion that there were constraints to inclusion of students with hearing impairments at Kenya Technical Teachers college. In view of this the study recommends in-servicing of teachers in special needs in education and sign language, deployment of teachers who are trained in special Needs. Provision of more suitable resources and support services and adaptation of the teaching – learning strategies.
CHAPTER ONE
INTRODUCTION

1.1 Background to the study

Education is a human right and an essential tool for achieving the goals of equality, development and peace. Equality in terms of accessibility of education and attainment of educational qualifications is necessary for persons with disabilities for two main reasons. First, it will ensure that persons with disabilities are able to compete favourably for the limited employment opportunities. Second, it will enable them to occupy key positions in society and hence participate in decision making, thus becoming important agents of change in society. Therefore they need to be assisted to achieve these ends.

This notwithstanding, Hegarty (2002) observes that, it is now more than 40 years since the nations of the world, speaking through the Universal Declaration of Human Rights asserted that ‘everyone has a right to appropriate education’, yet it is beyond doubt that across the world, many children do not receive education including large numbers who have disabilities. Hegarty (1990: 30), sums up the situation by stating that, “those with disabilities, who ironically have the greatest need of education, are the least likely to receive it” Unfortunately this is true of developed and developing countries alike. In developing countries, however, many students with disabilities and others who fail to achieve satisfactory progress in school are formally excluded from the mainstream education system or receive less favourable treatment within it than other children.

Initially, implementers of Special Needs Education (SNE) created a problem where for many years they gave impressions that SNE is a separate field of endeavour, peripheral to the interests of others and largely unconnected to the agenda of the general education community. Hence, separating itself from the mainstream thinking and practice and encouraging a climate that precludes any real consideration of the potential for collaboration between the two sectors. This is because special schools at that time were seen as the best educational provisions that could be given to exceptional children. But with the human rights movements of 1950’s and 1960’s criticisms were raised on special schools which were seen as stigmatizing handicapped children and their parents.
Similarly, Hegarty (2002) points out that there is an urgent need to bridge this gap, and all those involved in schooling, whatever their roles, should join together in pooling their energies and resources in order to create schools that can educate all students effectively. This is because exclusion in schools sows the seeds of social discontent and discrimination. Likewise, students who are educated in separate classes often feel unmotivated, inferior and helpless (Lombardi, 1994). Research findings relating to this have been reported by Evans (1993) that, the practice of segregated learning has been recognized as a problem in special education and a belief that disabled persons have a right to as normal an existence as possible, has become the accepted goal of special services. This has led to an increased emphasis on the notion of integration, meaning that students with disabilities are educated together with their non-disabled peers. Thus integration was seen as an attempt to modify the child with disabilities to fit in an ordinary school. Hence O’Hanlon (1995), reports that recent international surveys have given strong evidence that the integration of children said to have special educational needs is seen as being a matter of priority in both developed and developing countries. Despite this recognition, it has drawn criticism from both the regular education and special education communities that it has failed in achieving its goal of educating children with special needs in the least restrictive environment. This is because integration attempts to modify the learners with disabilities to fit in an ordinary school, instead of modifying the school to meet the needs of the learner with disabilities. Given this criticism, it is possible to care for persons with special needs, particularly the Hearing Impaired (HI) through inclusive education, in supportive mainstream schools and classrooms where all students’ needs are met (Hegarty, 2002).

Inclusive education challenges much existing practices in the special needs field. The movement, away from traditional views of special education towards inclusive practices has been described as a new paradigm of thought requiring transformation in teacher beliefs and instructional practices (Lipsky and Gartner, 1992; Hegarty, 2002). Inclusive education requires proper planning and adequate support in terms of resources, legislation and commitment from the stakeholders. It also calls for a complete attitudinal change by the government, educators and service providers as well as the learners both with and
without special needs in education (MOEST, 2003). If such challenges are experienced in lower institutions, it is possible for training colleges such as Kenya Technical Teachers' College (KTTC) to experience more challenges hence the need for this study.

Indeed, this inclusive orientation is a strong feature of the Salamanca statement on principles, policy and practice in SNE agreed by representatives of 92 governments and 23 international organizations in June 1994 (UNESCO, 1994: 20). Specifically, the statement argues that regular schools with an inclusive orientation are:

The most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society and achieving education for all: Moreover, they provide an effective education to the majority of children and improve the efficiency and ultimately the cost effectiveness of the entire education system.

In Kenya, the government realizes that training opportunities for persons with special needs should be diversified in order to enhance their chances for employment, and that persons with impairments are entitled to share in the experience of contributing to the community's common good (Republic of Kenya, 1999). This diversification however has not been reflected in middle level institutions. For example Okoth (2002: 18) has shown that persons with HI have got two technical institutions namely Karen and St. Joseph which offer a crafts certificate training course to the form four leavers after which their education and training is terminal.

This leaves them with the option of training with their hearing peers in the existing technical training institutions in general and particularly KTTC which is the only Institute that trains technical teachers in Kenya. This would enable them to get teaching jobs in the technical institutions for the HI where they would communicate effectively with their students with HI and also act as resource persons especially to teach regular teachers basic sign language. This would then provide the missing role models evidenced in the argument by the National Foundation for the Deaf (2000), that the lack of role models is an ongoing problem for the HI community whereby isolation often results in HI children and young adults achieving little with their lives. It would also provide persons with HI with a
chance for self actualization as advocated by Maslow (1970), which cannot be achieved if they remain in special institutions for the HI.

KTTC is a government institution fully maintained by the Ministry of Education (MOE). Admission to KTTC is open to all Kenyans with appropriate educational qualification, including persons with HI. The qualification for a certificate course in technical teacher education is a crafts certificate. Karen and St. Joseph Institutes for HI offer this and therefore students with HI qualify for admission into KTTC. For this reason it was important to identify the support services and resources that are adaptable to such inclusive education in the institution hence the need for this study.

1.2 Statement of the Problem

Education for children with HI in Kenya is structured in such a way that all the primary schools for the HI have a vocational training section. Those who sit for Kenya Certificate of Primary Education (KCPE) and qualify join any of the three secondary schools for the HI (Kuja, Mumias and Reverend Muñoro). After form four, two technical institutions for the HI, (St. Joseph and Karen) offer a crafts certificate training course. Those who qualify for further training thereafter have no where to go because there are no institutions for the HI to cater for them, particularly in training them as technical teachers.

There is therefore a need to address the plight of persons with HI as far as their further training is concerned. The current trend of inclusive education could offer a solution where persons who are deaf could technically train with their hearing peers in the existing regular technical institutions. KTTC is the only technical teacher training institution whose records indicate that it has trained three student teachers with HI and graduated them with a certificate in technical teacher education. The first one graduated in 2002, the second one in 2004 and the third one in 2006 (KTTC graduation handout of 2006). At the time of this research records showed that there was no student with HI for training in the institution for reasons that had not been systematically explained. The students may not have been admitted because either there were no applicants or the institution was not readily
prepared for such students. It is on the basis of the latter that this study was designed to find out constraints to inclusion of students with HI for training at KTTC.

1.3 Purpose of the Study
The purpose of the study was to establish constraints to inclusion of students with HI for training at KTTC and make suggestions for facilitation of more persons with HI to train as technical teachers than it is presently.

1.4 Objectives of the Study
The study had the following objectives:

1. To establish the attitudes held by students, lecturers and administrators towards inclusion of students with hearing impairment at KTTC.
2. To establish the training level of teaching staff in SNE at KTTC to support students with HI.
3. To identify the available teaching-learning facilities/resources used at KTTC that would promote the learning process for students with HI.
4. To examine the teaching-learning strategies and modes of communication used by teachers at KTTC.
5. To establish the available support services at KTTC that would facilitate the teaching and learning of students with HI.
6. To make recommendations on the best ways to facilitate inclusion of students with HI at KTTC.

1.5 Research Questions
Specifically the study aimed at finding answers to the following research questions.

1. What attitudes do students, lecturers and administrators have towards inclusion of students with HI at KTTC?
2. What special training do KTTC teaching personnel have to support students with HI?
3. What teaching learning facilities are available for use at KTTC that would promote the learning process of students with HI?
4. What teaching-learning strategies and modes of communication used at KTTC are adaptable to students with HI?

5. What support services are available at KTTC to facilitate the teaching and learning of students with HI?

6. What possible recommendations could be made to facilitate inclusion of HI students in technical training institutions like KTTC?

1.6 Significance of the Study

It was hoped that the findings of this study would enhance understanding of the special needs of persons with HI by the technical teacher trainers. In addition, it is hoped that the findings would also enable the trainers to vary their teaching strategies based on the needs of the students. Information from the study would hopefully influence the policy makers, curriculum developers, educators and teachers to consider using adaptation as an effective component of quality education and training even in other higher institutions of learning. The findings of the study would hopefully enhance understanding of the hearing impairments by the non HI community hence help to dispel and demystify misconceptions about persons with HI. Also if persons with HI are trained as technical teachers they would act as resource persons in the institutions for HI. Thus, it was anticipated that the study findings would be an eye opener to both the government and sponsor of KTTC to ensure that the training of such students receive appropriate services. Finally, the study may form a base on which others can develop their studies.

1.7 Scope and Limitation

1.7.1 Scope

The study was carried out at KTTC in Nairobi province. It dealt with the students who have been trained and those who are training there. It also dealt with the teaching staff leaving out the non-teaching staff.
1.7.2 Limitations

1. The study only dealt with one specific category of disability, the hearing impaired hence it may not be applicable to persons with other categories of disabilities such as Visually Impaired or Physically Handicapped.

2. The study focused more on the needs of totally impaired students leaving out the hard of hearing who form a category in HI.

3. Constraints to inclusion of HI students at KTTC are many and diverse. However, the researcher was only limited to a few of them due to limited time.

1.8 Assumptions of the Study

The study was based on the assumption that persons with HI were willing to be trained as technical teachers. It also assumed that such persons had the necessary qualification for admission into KTTC. Further, it was assumed that the respondents would be cooperative and honest to provide information to the best of their knowledge.

1.9 Theoretical Framework

This study adopted Abraham Maslow’s (1970) theory of motivation as a basis for investigation. Maslow classified human needs into two: that is basic needs and growth needs, which he placed in a hierarchy showing that some needs, are more powerful than others depending on individual’s circumstances. He argues that physiological needs form the base of the hierarchy. They are followed by safety and security needs. Maslow argued that the higher motivations (growth needs) can come into play only when the basic needs have been satisfied. Love and belonging needs come third on the hierarchy. Then they are followed by esteem and self esteem needs. Accordingly, Maslow placed self-actualization at the top of the hierarchy. He rightly concluded that every human being strives to meet all these needs.

Through education, persons with HI strive to meet their human needs. Provision of education in an inclusive setting is likely to facilitate learning for persons with HI as already discussed in chapter two. By acquiring appropriate knowledge and skills the individual will be able to access meaningful employment which will enable them to meet their basic
needs. In an inclusive education setting, the HI person would also learn and interact with the regular students. This would enhance acquisition of love and affection, it would help develop a deep sense of belonging and promote their self esteem. Consequently they would be able to realize other growth needs; including self actualization. Middle level training institutions such as KTTC should embrace inclusive education in order to provide students with HI with an opportunity to realize their human needs. However certain constraints have hampered inclusive education for them in training institutions in general and KTTC in particular. These have been demonstrated in the conceptual framework in Figure 1.1.
1.10 Conceptual Frame Work

The main factors that relate to constraints of inclusion of students with HI in any training institution in general and KTTC in particular have been rightly discussed by Smith (1998); Hunt and Marshall (2002) and Hegarty (2002). Some of them include inappropriate teaching strategies, inappropriate modes of communication and lack of support services among others. Such factors and other related factors have been summarized and presented in figure 1.1

Figure 1.1 Adaptability for Inclusive Education


Figure 1.1 shows that there was no inclusive education taking place at KTTC. It also gives the possible related factors (Constraints) that may have been responsible for this. These
include inappropriate infrastructure, negative attitudes by both teachers and students, inappropriate teaching-learning resources, inappropriate modes of communication, lack of teachers trained in SNE, inappropriate teaching strategies and lack of support services. All these have contributed to integration which is a main constraint to inclusion. Integration has been taking place at KTTC for some years and through it three students with HI have trained as technical teachers. It is likely that the above constraints have hindered more students who are deaf from seeking admission to KTTC as there were none at the time of this study (2006/2007 academic year).

However if certain intervention measures are put in place they are likely to eliminate or lessen such constraints. These include adapting the existing infrastructure, sensitizing both teachers and students for positive attitudes, improving the teaching and learning resources, emphasizing total communication and in-servicing teachers on sign language in order to achieve this, in servicing teachers in SNE, adapting the teaching strategies and providing support services for students with HI.

When the above intervention measures are achieved the possible out put would be inclusive education. This would lead to an adapted environment for students with HI. Adapted environment would create room for such students to achieve Maslow's growth needs including love and belongingness, self esteem and esteem needs and finally self actualization. It would also lead to qualified technical teachers for HI institutions who have experience in HI. Finally more persons with HI would qualify as technical teachers to teach in institutions for the deaf hence provide the missing role models in the deaf community cited by the National Foundation for the Deaf (2000).
1.11 Operational Definition of Central Terms

**Deaf:** This is profound hearing loss resulting in inability to perceive speech and spoken language.

**Hearing impairment:** This term refers to individuals who are deaf and those who are hard of hearing.

**Hard of hearing:** Refers to persons with mild to moderate hearing loss but still can hear and use spoken language.

**Inclusion:** This is the organization of a school so that all students who would be usually assigned to it benefit.

**Inclusive education:** This is an educational provision that ensures that all children including those with special needs and disabilities receive appropriate educational services within the regular settings.

**Inclusive schools:** Inclusive schools are designed to respond to the diverse needs of learners, accommodate both different styles and rates of learning and ensure quality education to all through appropriate curricula, organizational arrangements, teaching strategies, resources used and partnerships with communities.

**Integration/mainstreaming:** The term means the participation of learners with special needs in ordinary/regular schools with their non-disabled peers without necessarily making changes in the curricula provision or the learning environment.

**Regular/ordinary school:** This refers to the mainstream school, which follows the curriculum that is prepared for the average ability learners.

**Special Needs Education:** This is education which provides appropriate modification in curricula, teaching methods, educational resources, and medium of communication, equipment and the learning environment in order to cater for individual differences in learning.

**Technical Training Institution:** This is an institution which offers courses of different lengths at professional levels of full time, part time and evening studies. The courses cover both technical and commercial subjects.

Tutor: Means the same as teacher or lecturer and is someone assigned to teach in a college.
CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction
This chapter reviewed literature relevant to the study. In particular the following areas were highlighted, concept of HI, development of education for the HI in Kenya, modes of communication for learners with HI, teaching-learning strategies, Global trends in Special Needs Education, attitudes and studies on constraints to inclusion.

2.1 Concept of Hearing Impairments
The concept of HI is quite complex. Auxter and Pyfer (1985) rightly assert that HI creates the need for adjustment to a soundless environment, the disturbance of not being able to hear one's own voice and the uncertainty created when people act unexpectedly without explanation. It also creates the constant alertness needed for communication which is very demanding. It is for this reason Marshack (1993) reckons that deaf children experience a limited world and that their interactions with the world involve somewhat different rules and constraints. These differences have a variety of significant implications for their development hence requiring rehabilitative and educational measures. Some of these include use of assistive hearing devices, auditory training and use of alternative modes of communication. Others include appropriate educational placement, use of individualized educational programmes, appropriate seating arrangement and use of appropriate teaching strategies.

It is because of this view that Smith (1998) rightly notes, that it is difficult for those of us with unimpaired hearing to comprehend what living with a hearing loss is like. Unlike loss of vision which one can easily simulate by groping in a dark room or simply closing eyes, hearing loss is more difficult to appreciate. This is because our hearing is always at work even during sleep. From this it is seen that those hearing teachers handling students with HI must have knowledge of the disability and hence one of the aspect of this study was to establish the training level in SNE in the available teaching personnel.
To understand HI one must first understand what hearing involves. Hearing involves receiving and conduction of sound waves through the nerve function by which impulses are sent up and transmitted to the brain. If any of the structures responsible for either of these activities fails to function HI results. People with HI are disabled by difficulty in perceiving speech and environmental sounds (Marshack, 1993). Hearing loss is measured in terms of decibels. These are units of relative loudness of sounds. A 5 or 6 decibel loss is considered within normal limits. Loss not in excess of 15 decibels does not represent any severe impairment. However, if the hearing loss is in the range of 30 decibels, some impairment in communication may be evident. A loss of hearing of 40 to 60 decibels is considered a moderate deficiency. Loss of hearing is severe when within the range of 60 and 90 decibels. Profound hearing loss is from 91 decibels or more (Smith, 1998).

2.2 Development of Education for the HI in Kenya

Ndurumo (1993) outlines the development of education for the HI in pre-independent Kenya. Missionaries, philanthropic and non-governmental organizations pioneered education of the HI in Kenya as it was in other countries. Education of the HI traces its history back to the establishment of Kenya Society for the Deaf Children (K.S.D.C) in 1958 by Peter Chefford, Elizabeth Couldrey and Edna Hughes. In the same year the Agha Khan Special School for the HI was established. This was followed by two other schools and two units between 1960 and 1961.

Soon after independence, other schools and units for the HI were established by various bodies. Churches, NGOs, KNAD and the MOE were responsible for establishing three secondary schools for the HI and two technical institutions for vocational training. Education for the HI was and is still being offered under special schools, special units, integrated programmes and vocational programmes (MOEST 2003). Special Schools: are residential schools designed for the HI only. Examples include Kerugoya, Machakos and Kambui schools for HI. In these schools the physical environment and educational resources are modified to suit the needs of the learner. Special Units: These are classrooms located in regular schools but set aside for educating learners with HI. Specialist teachers who are responsible for meeting the educational needs of learners offer services in the units. Integrated programmes: Following the global trends in special
education integration was introduced in Kenya in the mid 1970s. Here learners follow the regular school curriculum with some or no support and are expected to adapt to the regular school arrangements. **Vocational programmes:** These are meant to offer training to children and youth with HI for self reliance. Examples are vocation schools such as Karen in Nairobi and St Joseph (Nyang'oma) in Bondo.

From the foregoing discussion, one would say that the highest educational provision for HI persons is vocational level in either of the two technical training institutions for the HI. After crafts certificate course in these institutions those who qualify for further training have no provisions made for them particularly in training them to become technical teachers. The two technical institutions for HI (Karen and St Joseph) are taught by teachers who have the hearing ability. In addition, all the residential primary schools for HI (Special Schools) have a vocational section each of which requires a trained technical teacher. Again, the teachers for these vocational training have hearing ability most of whom have no basic sign language. It is for this reason that Kuti the minister for Youth in Kenya rightly reflected that some teachers hired to teach in special schools for the HI were not well trained in sign language and wondered “How can they communicate with students with HI?” (Kuti, 2007:8).

From this, it is observed that there is need to train more persons with HI as technical teachers so as to take up such jobs. They would not only communicate well with the students with HI but would understand their needs better and also act as resource persons to teach their hearing teacher colleagues basic sign language. Kenya Institute of Special Education (KISE) based at Kasarani in Nairobi offers diploma in SNE to teachers both with and without disabilities. However although they offer courses like sign language, they do not offer any technical training to teachers. This coupled by the fact that the current global trend in education is inclusive education which is against exclusion could offer a solution. This would enable persons with HI to technically train with their hearing peers in the already existing regular training institutions such as KTTC which trains technical teachers. But before implementation of such a programme, a systematic study was necessary so as to investigate the kind of modifications that would be required in such an institution. It was for this purpose that the current study was designed.
2.3 Modes of Communication for Learners with HI

Modes of communication used for learners with HI are slightly different from those commonly used for non HI learners. The modes currently used in the education of learners with HI fall into three main categories. Oral, manual and total communication (Graham, 2001). In oral approach, a HI learner acquires oral speech and receives information by learning to reproduce what he/she sees on the lips and faces of the people talking to him/her. In manual communication two systems are used. One is manual alphabet referred to as finger spelling, where spoken language is spelt out manually using fingers to form the letters of the alphabet. The other system consists of sign language. In total communication both oral and manual modes are used simultaneously in order to provide the learner with as many systems of access to language information as possible.

Language being the most critical area that is affected by hearing loss requires that alternative communication methods like the ones discussed above be put in place so as to facilitate the teaching - learning process of learners with HI. To this end, Hunt and Marshall (2002) rightly record strategies that can facilitate such modes of communication in an inclusive classroom. These are use of assistive listening devices, suitable seating arrangement, removal of "visual noise" (visual interference) from communication situations and use of an interpreter. Whether these modes of communication are used in technical training institutions such as KTTC to cater for students with HI is yet to be established. This was the essence of this study.

2.4 Teaching- Learning Strategies for Learners with HI

There are various teaching-learning methods that are applicable in a classroom setting each with specific teaching-learning strategies. Lecture method, which involves the teacher either talking throughout the lesson without use of teaching aids, demonstrating a concept in front of the whole class, using small groups or individual students. It also includes illustrations using teaching aids such as charts, chalkboard, text books, real objects and models. Other methods involved in a classroom set up include question and answer, class discussion, group work, pair discussion and peer teaching. Strategies involved in most of these methods include student activities.
It is for this reason that Hunt and Marshall (2002) and Mastropieri and Scruggs (2000) suggested various strategies for an inclusive classroom to facilitate learning by students with HI. These include use of technology for instruction, use of visual aids and reiterating major points. Others are facilitating classroom discussion, physical environment for students who are deaf and asking questions and spending time periodically with them to ensure that they follow instructions. Whether this happens in technical training institutions to cater for students especially those with HI was subject to exploration through a systematic study; Hence the need for this study.

2.5 Global Trends in Special Needs Education

Trends in special needs education have been discussed under the following: segregation, integration & inclusion.

2.5.1 Segregation

Educators and administrators in the past have put a great deal of effort in the development of a thorough and widespread system of special schools. In these schools all the available experts and resources were concentrated in an attempt to provide the best education for children with special needs (Hegarty, 2002). Many of these schools acted as separate independent schools. The separate system was seen as an expression of care for pupils with special needs in education (SNE) rather than institutions for providing meaningful education to the same. This view of special education has gradually changed and special schools that lead to segregated learning are perceived as unacceptable and have been criticized.

Many criticisms on special schools have been raised particularly by the human right movements of 1950 and 1960s of the United Nations. They argued that special schools do not only discriminate against handicapped children but also stigmatize them as having needs different from those of ordinary people (Hegarty, 2002). Specifically, educating learners in segregated SNE programmes put them in environments which are limited to disability type. Such environments are artificial and do not exist in the mainstream society where the learner is expected to work and live after school. In fact, negative effects of
segregated learning led critics of the system to conclude that separate schools are
devised by educators to be repositories for children who could not fit into the regular class
without creating problems for them (Hegarty, 1984; Herwet and Forness, 1984). From this
it is observed that segregation approach to education of children with disabilities although
well intentioned has failed in many instances to meet the educational needs of these
children and has created, however unwillingly barriers to their education. This creates a
need for a more realistic approach to education of such children, which has not been
systematically documented at least in the Kenyan context.

2.5.2 Integration
Consequently and owing to amounting pressure against segregated special schools, the
concept of integration which is sometimes used interchangeably with mainstreaming
gained acceptance in most parts of the world. It was commonly accepted that children with
disabilities should be educated alongside their peers and within the same curriculum
frameworks to the greatest extent possible. This common understanding emerged
unevenly over a long period of time since 1960s and in different regions, from
Scandinavian ideas on normalization, Italian approaches to deinstitutionalization, the US
concept of least restrictive environment and British thinking and practice of integration. In
these regions, the central focus was on special educational needs and emphasized that

“If we accept as our goal a situation where all children and young people
whatever their level of disability, are fully part of their community and
their community’s institutions such as schooling, the key interest is how
we can achieve that goal and what steps we must take to move along the
line from rejecting or ignoring fellow citizens to creating the kind of
communities where everybody’s human rights are acknowledged to the
fullest extent possible (Hegarty, 2002:12)”

It was important to find out what plans have been put in place in Kenya and in particular
training institutions to address SNE for persons with HI.

From the mid 1970s significant changes emerged that led to the integration of children
with disabilities. Chief among them was the enactment of the education for all disabled
children Act of 1975 by the US popularly known as Public Law 94 – 142 as recorded by
Ndurumo (1993). This law mandated that equal and appropriate public education must be
provided between three and twenty one years for children and young people with special needs. This was to be done in a placement referred to as "Least Restrictive Environment" (LRE) which was an attempt towards normalization. This process of normalization in a least restricted environment would include provisions for disabled persons according to need and should be to the maximum extent possible provided in the type of community setting that are used by non-disabled persons (Hegarty, 2002). However, the term normalization was soon found unpopular with human rights campaigners and was replaced with mainstreaming.

Integration was practiced at three levels: locational, social and functional. Locational integration meant that children with disabilities learnt in the same locality such as a regular school but within different classrooms. They had different timetables and other than the shared compound had nothing in common with their non-disabled peers. Social integration on the other hand made it possible for children with disabilities to share certain social activities with non-disabled peers. They could play together at games time and sing in the choir among other shared activities. The highest form of integration was functional. This ensured that children with disabilities learnt in the same classes with their non-disabled peers and accessed the same curriculum usually with some support (Hegarty, 2002).

It is pertinent to state that in all its three forms, integration did not achieve its goal of educating children with special needs in the least restrictive environment because of a number of reasons. MOEST (2003) argues that while integration was seen as an attempt to modify the learner with disabilities to fit in an ordinary school, those in wheel chairs and clutches had to struggle to access the classrooms and playgrounds. For learners with visual impairments, physical barriers were a major hindrance. Similarly the mode of communication did not consider the learners with hearing impairments either. Teachers were trying to force the deaf children to speak and lip read (oralism). But despite its inadequacies integration was more responsive to the needs of children with disabilities than segregation. However more needs to be done. Even at this level, it was necessary to find out how technical training institutions for teachers address the needs of persons with disabilities such as HI. This was one aspect of this study.
2.5.3 Inclusive Education

Even in its infancy the shortcomings of integration in terms of actual interaction between learners with disabilities and their non-disabled peers were noted by professionals. This is because integration was seen as an attempt to modify the learner with disabilities to fit in an ordinary school. It did not challenge or alter in any way organization of the curriculum, teaching methods, evaluation strategies, school physical or social systems so as to fully accommodate learners with diverse learning needs (Hegarty, 2002; Kristensen, 2002; MOEST 2003; Ogweno, 2002). This led to suggestions that the best foundation for a just society would be to emphasize on the move towards inclusive education.

In 1994, representatives of 92 governments and 23 international organizations met in Salamanca Spain to form the World Conference on Special Needs Education. Clough (1998), reports that a bold and dynamic statement calling for inclusion to be the norm in education of all disabled children was agreed upon. A new framework of action which would require all children to be accommodated in mainstream school, regardless of their physical, intellectual, social, emotional, linguistic or other conditions was adopted. At the same time, it was recommended that national and local policies should stipulate that disabled children attend the neighbourhood school that would be attended if the child did not have a disability, (Clough, 1998).

Karagiannis, Stainback and Stainback (1996) have rightly shown that movement towards inclusive education received additional incentive when it became linked to education restructuring where major professional associations called for changes in educational organization and practices regarding students with and without disabilities. Therefore support has grown for all students including those with severe disabilities to be educated in their neighbourhood schools with their non disabled peers. That is why Mamlin (1999), and Chow and Kasari (1999), observe that the movement towards inclusion of students with disabilities into general education classes has become the overwhelming trend in education. However, they point out that in most developing countries Kenya included, it is yet to be fully implemented. This study sought to establish those constraints to its implementation at technical training institutions and particularly KTTC.
(Hegarty, 2002; Kristensen, 2002; MOEST 2003; Ogweno, 2002), have rightly shown why inclusive education is superior to integration in terms of provision of education to learners with special needs. Inclusive education emphasizes on reviewing schools and their systems and restructuring them in order to respond positively to all pupils as individuals rather than trying to change the learners which is often the case in integration. Whether such restructuring is done in Kenyan regular technical training institutions is subject to a systematic investigation. Hence the need for this study. In this case, when an inclusive approach is used, specialized services are brought to the child and delivered by support personnel (for example specially trained teachers, instructional assistants (teacher aid, interpreters and therapists) in the context of classes(MOEST, 2003). Therefore, in view of the above one would say that inclusive education is about learning to live with one another and about how, where and why and with what consequences we educate all pupils and involves a serious commitment to the task of identifying and challenging injustices in education especially for persons with special education in general and in particular those with HI.

What is inclusive education?

Inclusive education differs from previously held notions of "integration" and "mainstreaming" which tended to be concerned principally with disability and "special educational needs" and implied learners changing or becoming "ready for" accommodation by the mainstream. By contrast inclusion is about the child's right to participate and the schools duty to accept.

Inclusion is about school change to improve the educational system for all students. It means changes in the curriculum, change in how teachers teach and how students learn as well as changes in how students with and without special needs interact with and relate to one another. Inclusive education practices reflect the changing culture of contemporary schools with emphasis on active learning, authentic assessment practices, applied curriculum, multi level educational approaches and increased attention to diverse student needs and individualization. The claim is that schools, centres of learning and educational systems must change so that they become caring, nurturing and supportive educational communities where needs of all students are truly meet. For this to happen teachers,
schools and systems may need to change so that they can better accommodate the diversity of needs that students have (http://www. armlawreview.org/guide/ Hamazasp% 20Harutyunyan.doc).

Legislation
The new anti-discriminatory climate has provided the basis for much change in policy and statute, nationally and internationally. Inclusion has been enshrined as segregation and discrimination have been rejected and outlawed.

Articulations of the new developments in ways of thinking, in policy and law include:

- The United Nations Convention of the Rights of the child (1989) which sets out children’s rights in respect of the representation of their wishes and views.
- The UNESCO Salamanca statement (1994) which calls on all governments to give the highest priority to inclusive education.

Also the Federal Individuals with Disabilities Education Act (IDEA) and its 1997 amendments make it clear that schools have a duty to educate children with disabilities in general education classrooms (http://www. armlawreview.org/guide/ Hamazasp% 20Harutyunyan. doc).

Principles of inclusive education
Inclusive education has the following principles:

- Every student has an inherent right to education on the basis of equality of opportunity.
- No student is excluded from, or discriminated within education on grounds of race, colour, sex, language, social origin, disability or other status.
- All students can learn and benefit from education.
- Schools should adapt to the needs of the school.
- The students’ views are listened to and taken seriously.
- Individual differences between students are a source of richness and diversity and not a problem.
• The diversity of needs and pace of development of students are addressed through a wide and flexible range of responses.

Inclusive practice

The practice of developing inclusive schools involves:

• Understanding inclusion as a continuous process, not a one time event.
• Strengthening and sustaining the participation of all students, teachers, parents and community members in the work of the school.
• Restructuring the cultures, policies and practices in schools to respond to the diversity of students within their locality.
• Providing an accessible curriculum, appropriate training programmes for teachers, provision of fully accessible information, environments and support.
• Identifying and providing support for staff as well as students, (http://www.armlawreview.org/guide/Hamazasp%20Harutyunyan.doc).

2.5.4 Benefits of Inclusive Education

The benefits of inclusive education are multiple for everyone involved in schools – all students, teachers and society as a whole (Stainback & Stainback 2000). Lewis & Doorlag, (1983); Low, (1983); and Stainback & Stainback (2000); Staub & Peck, (1994) have pointed out the benefits of inclusive education to students. Students with special needs remain with their peers and not segregated from their normal activities of the school, labeling is de-emphasized, safeguards against inappropriate placement of students, promotes rights of students to education of all and resource room services aid in decreasing the stigma attached to special services. Others include growth in social recognition, improvement in self concept, development of warm and caring friendship and better academic and social performance than comparable students in non-inclusive setting. On the other hand regular students benefit from association with their peers with special needs, they learn about those different from themselves and have the opportunity to learn that the differences are important, they grow to care for one another and gain the attitudes, skills and values necessary to support the inclusion of all citizens.
Stainback and Stainback (2000); Smith, (1998) and Wager and Pugach (1996), summarize the benefits for teachers as follows; plan and conduct education as part of a team, benefit through experience of working with children with diverse characteristics and needs hence become flexible in their teaching style, in classroom structure and design and increasing activities that promote success for all learners.

Finally inclusive education benefits the society in that it supports the social value of equality and teaches socialization; in fact the most important reason for inclusive schooling is the social value of equality. Thus when schools include all students then equality is respected and promoted as a value in society with the visible results of social peace and cooperation. The above benefits for students both with and without disabilities, teachers and the society, clearly justifies the need for the study so that after the constraints are identified, appropriate suggestions can be made to facilitate inclusion.

2.6 Attitudes Towards Persons with Disabilities

Attitudes towards persons with disabilities form a major component of effective education of these students in regular setting. In fact, Howarth (1987), asserts that positive attitudes must be adopted to ensure that essential emotional, social and conceptual experiences which underlie learning are provided in spite of disability. This is because as indicated by Donaldson (1980), handicapped individuals are likely to encounter negative and stereotypic attitudes from various populations. It was necessary to find out the kind of attitudes that are held by students, teachers, HODs and administrators of KTTC towards students with HI hence the need for this study.

Bishop (1990), further argues that the attitudes of non-handicapped students in a regular educational environment can be critical to the success of the students with handicap in that setting. This view is supported by Esposito and Peach (1983), who contend that non-handicapped students can facilitate the process of educating handicapped students in regular settings by interacting positively with their handicapped peers. Students attitudes were a component of this study.
2.7 Studies on constraints to inclusion

There is a dearth in literature on the area of training for persons with HI in regular settings. However Odero (2004) carried out a study on “identification of curriculum barriers to successful inclusion of students with visual impairments at Kenya Polytechnic”. His study revealed that positive attitudes exist among students, teachers and administrators towards inclusion of students with visual impairments in the institution. But other curriculum barriers adversely affect efforts to implement inclusive education in the institution. Such barriers included lack of qualified personnel trained in meeting the needs of visually impaired learners, physical barriers in the environment, programme content, lack of policy to stimulate and support inclusion and lack of funds to initiate inclusion. His conclusion was that much as various obstacles hamper it, inclusion is the most viable option for education and training for learners with special needs in general and persons with visual impairment in particular. Odero’s study was carried out with the visually impaired students and in a general technical institution. He recommended that a similar study be carried out using other types of disabilities. Hence the need for this study which focused on students with HI in a technical teachers training college.

Teachers Perceived Inclusion

Sruggs and Mastropieri (1966a) summarized the results of twenty eight surveys of teacher attitudes towards including students with disabilities in their classrooms conducted between 1958 and 1995. They used qualitative synthesis procedures to combine the findings across similar questions from different surveys. They reported that most teachers were in favour of some degree of inclusion and were willing to accommodate students with disabilities in their classrooms. It was important to find out the kind of attitude that teachers of KTTC held about inclusion. Hence this study.

Although most teachers were generally supportive of some form of inclusion. Many teachers did not believe they were given sufficient resources to implement inclusive
education satisfactorily. Most teachers reported needing more support in the form of more training, more personnel support, more materials support, more time for planning and small class sizes to make inclusion a success. One aspect of this study was to establish if KTTC had sufficient resources to implement inclusive education satisfactorily.

When teachers do receive support however they usually become more positive about inclusive teaching for example Dev and Scruggs (1997) reported that teachers who had completed coursework in special education as part of their teacher training programs had more positive attitudes towards inclusive teaching than teachers who had not received such coursework. The study sought to establish the teachers training level in SNE.

**Occupational Perspectives of Training Persons with HI**

One of the primary goals of vocational rehabilitation is remunerative employment. Trades offered in vocational institutions lag behind modern technology and are therefore not marketable. Malikin (1969) argues that rehabilitation can not be considered successful until the rehabilitee is placed in remunerative and satisfying employment. Similarly the president of the international society for rehabilitation of people with disability asserted that:

> The ultimate goal of all rehabilitation is to enable individuals with handicaps to work. A job is essential not only to enable the individual to be economically self supporting but also to assure the individual rightful place in the home and community (Malikin, 1969: 20)

It is clear from this perspective that vocational rehabilitation or institutions have failed to put persons with HI in their rightful place in the society. Their isolation from peers and
teachers in regular institutions ensure that persons with HI encounter difficulties in social interaction. Their isolation from the rest of the society brings about negativity perceived labelling which in turn increase stigma. Such labels also tend to envelop them so that other aspects of their person are hidden or denied (Barton and Tomlinson, 1981).

Dignity of persons with HI and opportunity to work in society can only be achieved by including them in mainstream institutions where they can acquire relevant skills to enable them work. This would concur with what Freud in Malikin (1969) pointed out that work is a most important focus on human motivation and that dignity of the individual has no real meaning unless the person with potentiality for work is given opportunity to engage. Hence the need for this study so as to create such an opportunity for persons with HI.

2.8 Gaps Identified
This chapter reviewed literature on the main themes of the study and identified gaps as follows:

i. Complexity of the concept of Hearing Impairments. This made it necessary to establish the training level of KTTC teaching staff to support students with HI.

ii. Development of education for the HI in Kenya. The study sought to establish the possibility of providing technical teacher training for persons who are deaf through inclusive education.

iii. Modes of communication for learners with HI. Language being the most critical area that is affected by hearing loss, it was necessary to establish whether the modes of communication used at KTTC are adaptable to students with HI.

iv. Teaching learning strategies for learners with HI. The study was designed to establish whether the existing teaching learning strategies in KTTC are adaptable to students with HI.
v. Global trends in special needs education

![Diagram: Segregated learning → Integrated learning → Inclusive learning]

The study was designed to establish KTTC readiness to embrace inclusive education in training their students.

vi. Attitudes towards persons with disabilities. Since attitude towards persons with disabilities form major component of effective education of these students in regular setting, it was important to establish the attitudes held by students, teachers, HODs and Administrator of KTTC towards inclusion of students with HI for training.
CHAPTER THREE
METHODOLOGY

3.0 Introduction
This chapter has dealt with the research design employed, variables, the study locale, target population, sampling techniques and sample size, research instruments, piloting, data collection procedures, data analysis and logistical and ethical considerations.

3.1 Research Design:
This study adopted a descriptive survey design which involved a case study of KTTC. It yielded qualitative data. A case study was found appropriate because a case of KTTC brought about deeper insights and better understanding of the constraints that hinder inclusion of students with HI in the institution. Additionally, KTTC being the only technical training college for teachers in Kenya is unique and cannot be compared to other technical institutions. Descriptive survey design is a systematic data collection procedure that enabled the researcher to gather evidence of the existing conditions at KTTC.

3.2 Variables.
3.2.1 Independent Variables
Independent variables were student related variables such as attitudes. There were teacher related variables such as attitudes, professional qualification, teaching strategies, modes of communication used and resources. HODs and administrators related variables such as attitudes. There were also resource related variables such as support services, trained personnel, equipment and physical facilities.

3.2.2 Dependent Variable
These were constraints hindering the inclusion of students with HI for training.

3.3 Study Locale
The study was conducted at Kenya Technical Teachers College in Nairobi. KTTC is located to the North East (NE) of Nairobi City at Gigiri next to United Nations (UN) headquarters. It is situated along Limuru Road, approximately 8 km from the city centre.
and is on an 82 acre site. The choice of the institution was based on the fact that it is the only institution that trains technical teachers in Kenya.

3.4 Target Population
The study targeted eight hundred and fifty students in the institution. One hundred and seventeen lecturers, twelve heads of departments, one principal and three old students with HI. Making a total of nine hundred and eighty three respondents. From this the sample size was drawn.

3.5 Sampling Techniques and Sample Size
3.5.1 Sampling Techniques
Sampling techniques utilized in this study included:

(i) Purposive sampling: to select the principal, HODs and second year students. The principal was selected because the institution has got only one principal. HODs too have got extra duties unique from those of other teachers. Since different departments were used then each head of department was involved excluding the one for the pilot study. Second year students were thought to have stayed in the institution long enough unlike first years and also were not very busy preparing for national exams like third years.

(ii) Stratified sampling: to select lecturers and students. For lecturers, the researcher obtained the staff attendance register and prepared a list of teachers based on their gender (male and female strata) and departments. For second year students, the researcher did the same as for teachers.

(iii) Random sampling: to select the required number of lecturer and student respondents from the stratified groups. Here the systematic method was used where the researcher picked every 4th name from the above lists (No ii) until the required numbers were achieved.

(iv) Snow ball sampling: to select old students of KTTC with HI. The researcher knew only one of them and so used networking method to get the other one.
3.5.2 Sample size
Lecturer and student respondents were determined using 10% of the target population that is 117 and 850 respectfully. This was based on Mugenda and Mugenda (1999) assertion that 10% of the target population is representative enough. In this case the sample size constituted 85 students (45 male and 40 female) and 12 lecturers (6 male and 6 female). Eleven HODs, 1 principal and 2 old students of KTTC with HI were also sampled making a total of 111 respondents. This is summarized in Table 3.1

Table 3.1: The Sampling grid

<table>
<thead>
<tr>
<th></th>
<th>Students</th>
<th>Lectures</th>
<th>Principal</th>
<th>HODs</th>
<th>Old students</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Target population</td>
<td>450</td>
<td>400</td>
<td>59</td>
<td>58</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Sample</td>
<td>45</td>
<td>40</td>
<td>6</td>
<td>6</td>
<td>1</td>
<td>11</td>
</tr>
</tbody>
</table>

3.6 Research Instruments

Three types of researcher made instruments were utilized in this study. They included: questionnaires, interview guides and observation checklists.

3.6.1 Questionnaires.

Three questionnaires were developed for students, lecturers and heads of departments.

3.6.1.1 Questionnaire for Students (QS) (see Appendix A)

It was designed to find out the attitudes of the students towards training in the same class with HI students. The information looked for also regarded students' characteristics including gender, year of study, course being undertaken and certificate to be received.

3.6.1.2 Questionnaire for Lecturers (QL) (see Appendix B)

This was designed to find out the teaching techniques employed, teaching resources, modes of communication used during lessons and the attitudes held towards HI students.
learning in their classes. It also provided information about teacher characteristics including gender, teaching experience, academic and professional qualifications.

3.6.1.3 Questionnaire for Heads of Department (QHD) (see Appendix C)
It looked for information about establishment in the department, teacher’s qualifications, available facilities in the department, recommended teaching-learning methods, difficulties encountered and attitudes towards having HI students to train in their department.

The questionnaires consisted of both open ended and close ended items. The close ended items yielded specific answers while open ended items allowed room for clarification by the respondents.

3.6.2.2 Interview Guides
Two interview guides were developed for the principal and for ex-KTTC trainees with HI.

3.6.2.3 Interview Guide for the Principal (IGP) (see Appendix D)
This was designed to elicit in-depth information about the institution including the year of establishment, trades offered, admission criteria, student enrolment, staffing and qualifications and available facilities. It also elicited his attitude towards having HI students training in the institution.

3.6.2.4 Interview Guide for old students with HI (IEOS) (see Appendix E)
This sought for information concerning their training in KTTC particularly the difficulties encountered and attitudes held towards them by the KTTC fraternity. It also sought information regarding current occupation, gender, level of hearing loss, schools, vocational and technical institutions attended, course undertaken and certificate received. Total communication approach which includes sign language was used by the researcher for the interview as she was conversant with it. Both interview guides were personal interviews.

3.6.2.5 Observation Checklists
Two observation checklists were developed for the study.
3.6.2.6 Observation checklist for teaching-learning facilities (OC) (see Appendix F)
This was designed to find out the availability, suitability and adequacy of physical facilities, equipment, resources and support services. The purpose was to assist the researcher to identify those facilities that are adaptable to students with HI.

3.6.2.7 Lesson Observation Schedule (LOS) (see Appendix G)
This was developed to observe the actual lesson going on. It found out the physical state of the classrooms, the modes of communication being used and the teaching techniques being used by the lecturers.

3.7 Pilot Study
Once the instruments were constructed, they were tried out in the field. They were pretested in the same institution because there is no other identical institution that could have provided a sample similar to the actual sample that was used in the study. The procedures for pretesting were similar to those that were used in the actual study. In this case one department was excluded from the main study for piloting purposes. This department was randomly selected. The HOD, lecturers and students from the department were involved. The deputy principal who acts on behalf of the principal while away was included in the pilot study. Similarly one of the three ex-KTTC trainees with HI not included in the main study was included in the pilot study. The purpose of pilot study was to validate the instruments and improve their reliability. As such important suggestions, omissions and corrections from the pretesting exercise were incorporated in the final instruments of data collection.

3.7.1 Reliability
Reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials (Mugenda and Mugenda 1999). The split – half method of assessing reliability of the instruments was employed. This approach required only one testing and therefore the instruments were designed so that there were two equal parts. Subject scores from the first part were correlated with scores from the second part.
The advantage with this approach was that it eliminated chance errors which normally occur due to differing test conditions as in the case of test – retest method.

In piloting students, lecturers, HOD and administrator (Deputy Principal) as well as ex-trainee with HI responded to all the questions. After piloting the results were analysed and the reliability coefficient calculated. Here the Spearman's formula was used to correlate the two sets of data. A reliability coefficient of 0.8 was obtained and this was considered good enough to judge the instruments as reliable.

3.7.2 Validity

Validity indicates the degree to which an instrument measures what it is supposed to measure (Kothari, 2004). A pilot study was carried out to check the appropriateness of the language used in the questionnaires and interview guides after which necessary modifications of the tools was made to suit the respondents.

3.8 Data Collection Procedures

Having conducted a pilot study and validated the instruments data was collected in the field. Before proceeding to the field to collect data, the researcher carried out a familiarization tour to the institution under study. Having obtained permission from the principal she informed the participants of their involvement in the study, seeking their consent and co-operation. She also assured them of total confidentiality and informed them that the information given would only be used for research purposes. During the familiarization tour, the researcher arranged with the HODs on how and when the lesson observations would be made. At least one lesson from each of the eleven departments was observed during instructions. This took a duration of one and a half weeks. The researcher observed the lessons by herself and recorded the data obtained on the observation checklist in Appendix G. This helped to establish the teaching teaching-learning strategies employed by lecturers, modes of communication used, teaching learning resources used and seating arrangement. Once all the intended lessons were observed, further observations were made to establish the availability of physical facilities, equipment and support services. The data obtained was recorded on Observation
Checklist in Appendix F. Having done all the observation, the researcher administered questionnaires to teachers and HODs personally. Some of these were received back on the same day. She left the students questionnaires with the HODs who assisted her to administer them to the students. These were collected on the next day together with those of teachers and HODs which had not been received on the first day. Questionnaires were considered ideal for collecting data from students, lecturers and HODs because they were all competent in English hence individually interpreted and recorded these instruments.

At the beginning of the data collection exercise, the researcher had booked an appointment with the principal for a personal interview. This was successfully done using a structured interview guide as shown in Appendix D. Since the principal was not comfortable with the tape recording, main points were noted during the face to face interview. The interview elicited in-depth information through probing the respondent. Finally the researcher conducted interview sessions with the two old students with HI separately. A structured interview guide (Appendix E) was used during the sessions. Total communication approach which includes sign language was used. The main issues were noted down during the interview. Data obtained from the instruments above were then subjected for analysis as presented in the following section.

3.9 Data Analysis

Data were analyzed qualitatively. Objective one yielded attitude responses which were analyzed using the Likert Scale. Observation data using the available checklist (F and G) to determine the Teaching-Learning strategies, Modes of communication and support services were analysed thematically. Data from the structured interviews were converted into a write up using pre-determined coding categories and reported in narrative form. However, the results of the above qualitative data were quantified and presented using frequency distribution tables and percentages. All the other objectives yielded descriptive data which was measured using descriptive statistics such as frequencies and percentages to determine the training level of lecturers and the availability of teaching-learning facilities.
3.10 Logistical and Ethical Considerations

The researcher first of all obtained an introductory letter from the graduate school at Kenyatta University (KU) and then went to the permanent secretary in the Ministry of Education to seek permission to carry out the research. She sought permission from the principal to research in the institution and once again assured the respondents of total confidentiality.
CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.0. Introduction.
This chapter presents results, analysis and discusses the findings of the study. The study aimed at establishing constraints to inclusion of students with HI for training at KTTC. The study attempted to answer the following research questions.

1. What attitudes do students, lecturers and administrators have towards inclusion of students with HI for training at KTTC?
2. What special training does KTTC teaching staff have to support students with HI?
3. What teaching learning resources are available at KTTC that would promote the learning process of students with HI?
4. What teaching - learning strategies and modes of communication used at KTTC, are adaptable to students with HI?
5. What support services are available to facilitate the learning process of students with HI at KTTC?
6. What possible recommendations could be made to facilitate inclusion of students with HI for training at KTTC?

4.1 Results Presentation and Discussion
Responses were obtained from 85 students, 12 lecturers, 11 HODs, 1 Principal and 2 old students with HI. These were obtained through questionnaires, interview guides and observation checklists. All the questionnaires that were issued to the respondents were received back. This was good response in line with Peil (1985), who states that a return rate of above 50percent is good response when using questionnaire as an instrument. The following departments were involved:- Mechanical engineering, Building and civil engineering, Electrical engineering, Business Education, Information studies, Entrepreneur, Instructors training, Institutional management, Computer studies, Education department and Library studies.
The findings were presented, analyzed and discussed as explained in the following section.

4.2 Attitudes towards students with HI
Attitudes towards persons with HI form a major component of their education in regular setting. It was necessary to get the attitude of students, lecturers, HODs and administrator as they would directly interact with these students. Likert scale was used with three categories; A- agree; N-neutral, and D-disagree.

4.2.1 Students Attitudes.
This study was set to find out hearing students attitude towards training with students with HI. Students were given a questionnaire and were supposed to indicate how they felt by putting a tick in one box for each attitude statement.

Table 4.1: Hearing Students Feelings towards training with students with HI
N= 85

<table>
<thead>
<tr>
<th>Students with HI</th>
<th>A (f)</th>
<th>N (f)</th>
<th>D (f)</th>
<th>TOTAL (∑f)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Can train together with hearing students.</td>
<td>70</td>
<td>2</td>
<td>13</td>
<td>85</td>
</tr>
<tr>
<td>B Can use the same teaching learning resources as hearing students.</td>
<td>70</td>
<td>-</td>
<td>15</td>
<td>85</td>
</tr>
<tr>
<td>C I could readily assist them if I had such a colleague in my class.</td>
<td>70</td>
<td>-</td>
<td>15</td>
<td>85</td>
</tr>
<tr>
<td>D I can easily socialize with them</td>
<td>60</td>
<td>10</td>
<td>15</td>
<td>85</td>
</tr>
<tr>
<td>E Could lower quality of training at KTTC</td>
<td>15</td>
<td>-</td>
<td>70</td>
<td>85</td>
</tr>
<tr>
<td>F Could bring serious problems</td>
<td>15</td>
<td>-</td>
<td>70</td>
<td>85</td>
</tr>
<tr>
<td>G Are problematic and should remain in deaf institutions</td>
<td>15</td>
<td>-</td>
<td>70</td>
<td>85</td>
</tr>
<tr>
<td>H Would be unnecessary bother to me in class</td>
<td>15</td>
<td>5</td>
<td>65</td>
<td>85</td>
</tr>
</tbody>
</table>
Table 4.1 shows that 70(82.35%) of the students responded positively to the attitude statements that were given to them in form of a questionnaire. These students agreed that students with HI can train with hearing students. While 2 (2.35%) remained neutral, 13(15.29%) disagreed with the statement. As to whether they can use the same teaching-learning resources as hearing students, 70 (82.35%) agreed while 15(17.65%) disagreed. The same number of students 70(82.35%) agreed that they could easily assist a HI colleague in class, and 15 (17.65%) disagreed. Responding as to whether they could easily socialize with HI colleagues, 60 (70.59%) agreed and 10 (11.76%) remained neutral while 15 (17.65%) disagreed. On whether HI students could lower the qualities of training if admitted for training only 15 (17.65%) agreed while 70 (82.35%) disagreed. Asked whether deaf students are problematic and should remain in deaf institutions only 15(17.65%) agreed while the rest of the students, 70(82.35%) disagreed. Finally 15(17.65%) agreed that deaf students would be a unnecessary bother to them in class, and 5(5.88%) remained neutral while 65 (76.47%) disagreed to the statement.

It is evident that majority of the students, close to 70 (82.35%) had positive attitude towards the deaf students being included for training at KTTC and showed willingness to assist them as much as possible. This positive attitude is pertinent for inclusive education and is supported by Esposito and Peach (1983), who contend that non-handicapped students can facilitate the process of educating handicapped students in regular settings by interacting positively with their handicapped peers. In fact this is very important because students interact with each other in and out of class.

Further analysis reveals that a noticeable percentage of students 15(17.65%) had negative attitudes towards HI students being admitted for training at KTTC. Though from a minority group of students, such negative attitudes should not be ignored because as Bishop (1990) posits, the attitude of non-handicapped students in a regular education environment can be critical to the success of students with handicap in the setting. In fact the existence of negative attitudes among some students was confirmed by the old KTTC trainees with HI during the researcher’s personal interview with them. This is what one of them said about some colleagues,
"They viewed us as being 'stupid' and sidelined us during group discussions. Even when I worked very hard and scored high marks, they thought the teacher favored me because of my disability"

The other ex-trainee also complained that
"My friend who was supposed to assist me sometimes interpreted wrong things and I would occasionally protest"

Such sentiments indicate the damage that negative attitude can cause to students with HI. Therefore negative attitude by the regular students could be a constraint to inclusion of students with HI for training at KTT C which need to be addressed.

4.2.2 Teachers' Attitudes

Teachers being the ones to deliver the curriculum content to the students in general and those with HI, it was necessary to find out the kind of attitude that they had towards including such students in their classes. The findings are presented in Table 4.2.

<table>
<thead>
<tr>
<th>Students with HI</th>
<th>A (f)</th>
<th>N (f)</th>
<th>D (f)</th>
<th>TOTAL (Σf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Can train together with hearing students.</td>
<td>9</td>
<td>3</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>B Can use the same teaching learning resources</td>
<td>9</td>
<td>3</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>C I could readily assist them in class by using adjustments in my teaching methods.</td>
<td>8</td>
<td>3</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>D Could lower quality of training if admitted</td>
<td>4</td>
<td>8</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>E Could cause serious problems and ought to remain in deaf institutions.</td>
<td>4</td>
<td>8</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>F Would give me unnecessary burden which am not ready to carry.</td>
<td>3</td>
<td>1</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

The table above reveals that out of the 12 teachers sampled, 9(75%) agreed that HI students can train together with hearing students, while 3(25%) teachers disagreed with
the statement. On use of same teaching learning resources with hearing students, they had the same feelings as of training. Asked whether they would readily assist HI students in their classes using adjustments in their teaching methods, 8(66.66%) agreed to the statement, 1(8.33%) remained neutral while 3(25%) disagreed with the statement. Responding to the item whether admission of HI students for training could lower the quality of training the minority teachers 4(33.33%) agreed while the majority 8(66.67%) disagreed. Asked whether HI students would cause serious problems and whether they should remain in the deaf institutions, 4(33.33%) agreed, while 8(66.67%) disagreed to the statement. The last item was whether HI students would give them unnecessary burden which they were not ready to shoulder. Three, (25%) agreed, 1(8.33%) remained neutral while 8 (66.67%) disagreed.

The analysis reveals that the teachers sampled for the study held very similar feelings as those of the students. Majority (67%) had positive attitude, a very small number (8%) remained neutral and minority (33%) had negative attitudes. Such varying attitudes were also confirmed by the two old students with HI during the personal interview with the researcher. They had the comments:

"Some teachers were very friendly and supportive while others were very indifferent. They ignored us and never asked us any questions in class".

This was in agreement with Donaldson’s (1980), assertion that handicapped individuals are likely to encounter negative and stereotypic attitudes from various populations. This implied that teacher’s attitude could be a constraint to inclusion of students with HI for training at KTTC.

4.2.3. Heads of Departments Attitudes.

The study was also set to obtain the attitude of the HODs because apart from teaching, they had administrative duties. That is they were in charge of their departments. The outcome was as presented in Table 4.3.
Table 4.3: HODs' Feelings Towards students with HI  
N = 11

<table>
<thead>
<tr>
<th>Students with HI:</th>
<th>A (f)</th>
<th>N (f)</th>
<th>D (f)</th>
<th>TOTAL (Σf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Can train together with the hearing students</td>
<td>7</td>
<td>-</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>B Can use the same teaching – learning resources as hearing students.</td>
<td>7</td>
<td>-</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>C My department would readily assist them to train at KTTC</td>
<td>7</td>
<td>1</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>D Would lower quality of training if admitted at KTTC</td>
<td>3</td>
<td>-</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>E Would bring serious problem and should remain in deaf institution</td>
<td>3</td>
<td>1</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>F Would give my department unnecessary burden which I am not ready to shoulder.</td>
<td>4</td>
<td>1</td>
<td>6</td>
<td>11</td>
</tr>
</tbody>
</table>

Table 4.3 reveals that 7 (63.64%) HODs agreed that HI students can train together with hearing students while 4 (36.36%) disagreed with the statement. As to whether they can use the same teaching learning resources as hearing students, the response was same as of training. Quite a number of HOD’s 7 (63.64%) agreed that their departments would readily assist students with HI, 1 (9.09%) remained neutral, while 3 (27.27%) disagreed to the statement. Asked whether admission of HI students would lower quality of training at KTTC only 3 (27.27%) agreed. The rest of 8 (72.73%) disagreed to the statement. As to whether they could bring serious problems and if they should remain in deaf institutions, 3 (27.27%) agreed. 1 (9.09%) was neutral while 7 (63.64%) disagreed with the statement. Finally 4 (36.36%) strongly agreed that admission of such students would bring unnecessary bother which the department was not ready to shoulder, 1 (9.09%) remained neutral while 6 (54.55%) disagreed with the statement.
It is observed that most HODs just like teachers held very similar views with the students concerning inclusion of students with HI for training at KTTC. Over 50% had positive attitude that was later confirmed by one of the old students with HI, during the personal interview with the researcher. She had made the following comment:

"My HOD was very friendly and supportive". This positive attitude portrayed a high potentiality for inclusive education at KTTC and supports Howarth’s (1987) observation that positive attitude must be adopted to ensure that emotional, social and conceptual experiences which underlie learning are provided in spite of the disability.

Table 4.3 further shows that just like in the case of students and teachers, there was a very small percentage of HODs (9%) who were non-committal. The reasons why they remained neutral were not established as this was beyond the scope of this study.

From the analysis also it was revealed that the minority HODs (30%) still had negative attitude similar to those of students (20%) and teachers (25%). In fact during the process of data collection one HOD commented that the place of students with disability was at Kenya Institute of Special Education. This concurred with what Donaldson (1980) observed that handicapped individuals are likely to encounter negative attitudes from various populations. Such negative comments should not be ignored and although not a major constraint needs to be addressed before an inclusive programme can be implemented at KTTC. This could be done by sensitizing the KTTC community on the hearing disability so as to have an attitude change.

4.2.4. Administrator’s Attitude.

The true picture of attitude would not have been complete without finding out the attitude of the administrator who in this case was the principal. This is because he controls the students, teachers and HODs and therefore his input was very vital. His feelings were derived from a personal interview between him and the researcher. It was evident that he held very positive attitude towards inclusion of students with HI for training at KTTC. For example when asked about his opinion regarding introduction of inclusive education for HI students at KTTC this was his reply.
"It can work very well with adjustments put in place. In fact it would form a very good base where we would train enough HI persons to go and teach others like themselves. Most of the teachers at Karen Technical for the HI are our old students and also the only teacher with HI teaching there is also our old student".

To elicit his attitude further, the administrator was also asked whether the old students with HI who had trained there were able to cope with the courses they were admitted for and this was his reply.

"They were able to cope well despite the challenges. I myself taught two of them in the engineering department (drawing and design) which is quite challenging and they were able to cope well. They were never referred but graduated like everybody else"

This was very good and positive input coming from an administrator. Asked whether admission of students with HI would bring unnecessary bother to the institution, he replied "Not at all" He also agreed that students with HI can use the same learning resources as hearing ones but added that they would require a few specialized services.

Positive attitude is very vital for the learning of students with HI and agrees with Howarth’s (1987), view that positive attitudes must be adopted to ensure that the essential emotional, social and conceptual experiences which underlie learning are provided in spite of the disability. This positive attitude could be vital in supporting inclusive education if implemented at KTTC.

4.3 Professional Qualification and SNE Training of the Teaching Staff

In order to find out whether teachers' professional qualification was a constraint, data was collected from the respondents and the results are presented in Table 4.4
Table 4.4: Teachers and HODs Professional Qualification and SNE Training

<table>
<thead>
<tr>
<th>Professional Qualification</th>
<th>N= 12</th>
<th>N= 11</th>
<th>SNE training</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Teachers</td>
<td>HODs</td>
<td>Teachers</td>
</tr>
<tr>
<td></td>
<td>(f)</td>
<td>%</td>
<td>(f)</td>
</tr>
<tr>
<td>Diploma</td>
<td>2</td>
<td>16.7</td>
<td>-</td>
</tr>
<tr>
<td>Higher Diploma</td>
<td>2</td>
<td>16.7</td>
<td>2</td>
</tr>
<tr>
<td>BED</td>
<td>3</td>
<td>25</td>
<td>4</td>
</tr>
<tr>
<td>MED</td>
<td>5</td>
<td>41.6</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100</td>
<td>11</td>
</tr>
</tbody>
</table>

Table 4.4 shows that out of the 12 sampled teachers, 2(16.7%) had a diploma, the other 2 (16.7%) had a higher diploma while 3(25%) had bachelors degree and 5(41.6%) had masters degrees. For the HODs none had a diploma, 2(18.2%) had higher diploma, while 4(36.4%) had bachelors and 5(45.4%) had masters degree. The table also shows that both teachers and HODs had no training in SNE.

Table 4.4 further reveals that all teachers were professionally qualified with the least qualified being holders of diploma as represented by 4(33.4%). The rest 8(66.6%) had bachelors degree and above. It is also evident that the HODs were even more qualified with only 2 (18.2%) being holders of higher diploma while the rest 9(81.8%) had a degree and above. Such qualification of both teachers and HODs are very crucial in any learning institution and are supported by Sidhu (1991), who observes that high qualification of the teacher develops confidence in the teacher and equips them to attain desirable standards in teaching hence the professional preparation of teachers influence the learning of students.

Despite teachers and HODs being all professionally qualified, further observation from Table 4.4 indicates that none of them was trained in SNE. This was also confirmed by the researcher from the personal interview with both the principal and the two old students of KTTC with HI. This implies that since these teachers were not trained in SNE, they were not conversant with the instructional strategies for the students with special needs in general and HI in particular. It also contradicts Brennan’s (1982), assertion that teacher
training should secure an extension of sensitive awareness of and knowledge about special needs in the school. Therefore lack of teachers trained in SNE although professionally qualified could be a constraint to inclusion of students with HI for training at KTTCC.

4.4 Teaching-Learning Resources / Facilities.
Teaching media are important in teaching and learning. They motivate students to learn and also increase retention capacity. In the different questionnaires students, lecturers and HODs were asked to indicate whether the teaching-learning resources were adequate or not. The results are presented in Table 4.5 below.

<table>
<thead>
<tr>
<th>Table 4.5: Adequacy of Teaching-Learning Resources.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching resources</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Adequate</td>
</tr>
<tr>
<td>Inadequate</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

From the table above it is observed that 35 (41%) of students reported that the resources were adequate while 50 (59%) students reported that the resources required for training in their courses were inadequate. On the side of the teachers out of 12 teachers 5 (42%) admitted that the resources were adequate while the rest 7 (58%) reported that they were inadequate. For the 11 HODs 5 (45%) stated that the resources were adequate while the other 6 (55%) said that they were inadequate.

The table further indicates that over 50% of the students, teachers and HODs felt that the resources required for training in their courses were inadequate. The principal confirmed this during the researcher’s personal interview with him and added that modern resources were required to replace the old ones in order to match the modern technology. Similarly, although observation data from the observation checklist indicates that the institution had sufficient resources to some extent, and indeed teachers used them during lessons, over 60% were outdated and required to be replaced with modern ones. It is important to note
that if most of the resources required modification for the regular students, it would be worse for students with HI and contradicts Hunt and Marshall’s (2002), observation that for effective teaching and learning of students with HI, resources should not only be adequate but also suitable. This implies that learning resources could be a main constraint to inclusion of students with HI for training at KTTC.

4.4.1 Observation of Teaching – Learning Resources/Facilities.

Further observations were made by the researcher to determine the availability, suitability and adequacy of some sampled physical facilities and resources. This was done using an observation check-list and Table 4.6 below presents the findings.

Table 4.6: Availability, suitability & Adequacy of some sampled physical facilities and resources

<table>
<thead>
<tr>
<th></th>
<th>Availability</th>
<th>Suitable</th>
<th>Adequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent classrooms</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Workshops</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Computer labs</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
</tr>
<tr>
<td>Home science block</td>
<td>✓</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Library room</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Resource room</td>
<td>✓</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>PowerPoint computers</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
</tr>
<tr>
<td>Text books</td>
<td>✓</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Cookers</td>
<td>✓</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Sewing machines</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10 (100%)</strong></td>
<td><strong>4 (40%)</strong></td>
<td><strong>3 (30%)</strong></td>
</tr>
</tbody>
</table>

KEY: ✓ means positive; X means negative

NB: Suitable means relevant to the needs of students with HI. Adequate – means enough for the students available.

Table 4.6 above shows that 10(100%) of the sampled physical facilities and resources were all available but only 4 (40%) were suitable and 3 (30%) were adequate.
The analysis indicates that although all the sampled physical facilities and resources were available, about 70% of them were not adequate even for the regular students. This corresponded to the data already received from the questionnaires and personal interviews with both the principal and the two ex trainees with HI. Further analysis shows that only 4(40%) of the resources were suitable for students with HI. For example although there were adequate permanent classrooms they were not acoustically treated. The home science block was small and did not have much modern equipment. The library too did not have any special collections nor did the resource room. This is detrimental to students with HI whose learning is visual oriented and is opposed to Hunt and Marshall's (2002), argument that since many students who are deaf are dependent on their sight for processing information, visual representation of course content is highly important. This means that the resources need to be modified or replaced in order to suit students with HI.

4.5 Teaching – Learning Strategies.

In order to ascertain whether teaching -learning strategies used by lecturers at KTTC were a constraint to inclusion of students with HI for training at KTTC, information was sought from the students, teachers and HODs about the strategies used. The results are shown in Table 4.7 below.

<table>
<thead>
<tr>
<th>Teaching technique</th>
<th>N= 85 Students (f)</th>
<th>N= 12 Teachers (f)</th>
<th>N= 11 HODs (f)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>85 100</td>
<td>12 100</td>
<td>11 100</td>
</tr>
<tr>
<td>Pair, group or class discussion</td>
<td>68 80</td>
<td>9 75</td>
<td>8 72</td>
</tr>
<tr>
<td>Question &amp; Answer</td>
<td>85 100</td>
<td>12 100</td>
<td>11 100</td>
</tr>
<tr>
<td>Demonstration</td>
<td>60 70.58</td>
<td>8 66.66</td>
<td>7 63.63</td>
</tr>
<tr>
<td>Project Work</td>
<td>70 82.35</td>
<td>10 83.33</td>
<td>9 81.81</td>
</tr>
</tbody>
</table>

The table above reveals that lecture and question and answer were the most commonly used strategies accounting for students, 85(100%), teachers 12(100) and HODs 11(100%). Project method followed being represented by students, 70(82.35%), teachers, 10(83.33%) and HODs 9(81.81%). This was closely followed by pair, group or class
discussion as indicated by 68 (80%) students, 9 (75%) teachers and 8(72%) HODs. Demonstration seemed to be the least commonly used method represented by 60 (70.58%) students, 8 (66.66%) teachers and 7(63.63%) HODs. These are fairly high percentages (≥60%) and indicate some possibility of accommodating students with HI since most of them are student centered.

The results show that teachers used a variety of teaching techniques ranging from two or more. In fact this was confirmed by responses to the questionnaire item as to whether there were times when teachers used more than one method in a lesson and 90% of the teachers indicated that they did. During classroom observations, it was observed that majority of the teachers (over 60%) used a variety of teaching methods. Even when lecture method seemed to dominate especially during theory lessons, it involved demonstrations using a variety of teaching aids such as charts, posters, models, chalkboard, drawings and so on. These methods were appropriately used for the regular students. The inference here was that appropriate teaching strategies were used for instruction purposes as most of them were student centered and students participated well. This allows room for adaptability to suit the needs of students with HI.

However, close lesson observation revealed some obstacles students with HI would encounter. For example during instruction, verbal (oral) communication was commonly used. This contradicts Hunt & Marshall’s (2002), suggestion of use of technology for instruction when teaching students with HI. It was also observed that during question and answer method, most lecturers concentrated on the active students. This would disadvantage a student who is deaf who in most cases would be passive. Further it was observed that most Lecturers were fond of talking as they demonstrated a concept on the chalkboard. Again this would disadvantage a student who is deaf who would require watching the teacher as he talks for the purpose of lip-reading. But all in all these are minor and could be modified if inclusive education is implemented at KTTC. Therefore the teaching-learning strategies used at KTTC would require to be modified in order to cater for the needs of students with HI. This would be in line with Hallahan & Kauffman (1997), who contend that students with hearing losses may require modified physical, instructional and social environments in order to benefit fully from education in the mainstream.
4.5.1. Modes of Communication Used by Lecturers

To establish the modes of communication used by lecturers to deliver content to the student data was obtained through lesson observation and Table 4.8 presents the findings.

Table 4.8: Modes of Communication used by Lecturers

<table>
<thead>
<tr>
<th>Mode used</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>12</td>
<td>100</td>
</tr>
<tr>
<td>Manual (signs &amp; gestures)</td>
<td>5</td>
<td>41.7</td>
</tr>
<tr>
<td>Written</td>
<td>7</td>
<td>58.3</td>
</tr>
<tr>
<td>Total communication</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 4.8 shows that oral communication was the most commonly used mode of communication during instruction. All the sampled lecturers 12(100%) used this mode while written communication in form of handouts was used by 7 (58.3%) lecturers. Manual mode of communication was the least used by 5(41.7%) lecturers. The table also reveals that none of the lecturers used total communication. The oral mode of communication which was used by all lecturers is likely to disadvantage students with HI who may not benefit much during instruction. However this mode of communication could be modified to enable them benefit from a lecture. Such modifications are supported by Hallahan & Kauffman (1997) and Hunt and Marshall (2002), who have suggested use of slides, video tapes or overhead projectors to note the important points or words. This would enable the lecturer to face the students when speaking so that they can see his/her face which is very vital for a student who is deaf. Written communication which was used by about 50% of the lecturers would be beneficial to students with HI. However since the learning of persons with HI is visually oriented, written communication could be improved by adapting materials using displays such as diagrams, pictures, graphs and flow charts to reduce language and reading demands. This would embrace Hallahan and Kauffman’s (1997), observation that the best instructional format of students with HI is predominantly pictorial with some verbal information. Manual mode which is more beneficial to students with HI
than oral and written modes was the least used by less than 50% of the lecturers. This was used especially during demonstrations and even then few signs and gestures were utilized. To cater for students with HI, manual mode would require to be improved to include more facial expressions, body movements and gestures. Teachers would also require learning sign language which is part of manual communication. Improving manual communication would be in agreement with Hunt and Marshall’s (2002), argument that since many students who are deaf are dependent on their sight for processing information, visual representation of the course content is highly important.

Total communication which is the recommended mode was not used by any lecturer. This could probably be because there were no deaf students and/or no lecturer was conversant with sign language which is an element of total communication.

4.5.2 Teachers Conversant with Sign Language.

Language being the most critical area affected by hearing loss, it was important to find out whether there were any teachers conversant with basic sign language. This was especially after learning that the institution had already trained and graduated three students with HI.

The teachers were asked in form of a questionnaire whether they had done any basic sign language. From the responses only 3(25%) of the lecturers reported that they had done just an introductory part of it. The rest 9(75%) were not conversant with any sign language. This was supported by the responses obtained from HODs which indicated that none of the lecturers in their department had basic sign language. Similarly, during the personal interview with the old students with HI, it was learnt that none of the lecturers who taught them had basic sign language. During the interview session with the principal it was noted that the lecturers were not conversant with sign language. He had the following comment to make.

"We used to have one Lecturer who was conversant with sign language and had started teaching interested Lecturers during free time. But shortly he went to work with the Ministry, and the sign language lessons were terminated".
From the information gathered the inference is that there are no teachers who are conversant with basic sign language. Even those who had done the introductory part of it, it was too basic that they could hardly communicate in it. Therefore lack of teachers conversant with sign language could be a main constraint to inclusion of students with HI at KTTC. Teachers would have to be trained in basic sign language to enable them communicate with students with HI.

4.6 Availability of Support Services.

The study intended to find out whether the institution had any support/specialized services. These were both in terms of resources (including human) and equipment. An observation checklist was used to establish the availability of such services as shown in Table 4.9.

<table>
<thead>
<tr>
<th></th>
<th>Available</th>
<th>Not available</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>Interpreter services employed for the college.</td>
<td>0</td>
</tr>
<tr>
<td>ii</td>
<td>Note takers for students</td>
<td>0</td>
</tr>
<tr>
<td>iii</td>
<td>Staff conversant with sign language</td>
<td>0</td>
</tr>
<tr>
<td>iv</td>
<td>Teacher aid</td>
<td>0</td>
</tr>
<tr>
<td>v</td>
<td>Special resource room</td>
<td>0</td>
</tr>
<tr>
<td>vi</td>
<td>Assistive listening devices</td>
<td>0</td>
</tr>
</tbody>
</table>

The table above indicates that none of the support services were available at the institution. It lacked interpreters employed for the college, it did not have any note takers for students, neither staff conversant with sign language were available nor the teacher aid. The table also indicates that there was no special resource room and assistive listening devices were lacking. During the researcher’s personal interview with the principal, he was asked why the institution did not have any support services even after having trained students with HI. He informed that the institution lacked sufficient funds from the government and there was no donor funding.
Lack of support services at KTTC contradicts Ndurumo's (1993), argument that education of learners with disabilities without support services in the mainstream is education in the 'most restrictive environment'. This implies that before inclusive education is implemented at KTTC, support services need to be provided. This would be in support of Hergarty's (2002), observation that when an inclusive education approach is used, specialized services are brought to the learner and delivered by support personnel such as specially trained teachers, instructional assistants, therapists and interpreters in the context of classes.

4.7 Difficulties Encountered by the Old Students with HI

During the researcher's personal interview with the old students of KTTC with HI, it was evident that they had encountered many difficulties during their training. The following are some of them;

Communication problem, they complained that communication barrier was the greater setback because none of their teachers was trained in HI or conversant with sign language. They failed to benefit from most of the oral lessons since there were no interpreters or note takers. This resulted in them spending long hours in the night copying notes from colleagues. They further lamented that sometimes they even missed to hand in assignments in the right time because the instructions had been given verbally.

Financial constraint was another setback. The two old students complained that they came from humble backgrounds and had no sponsor or any bursary. This made it very difficult for them to raise the school fees and money for upkeep. In fact both of them confessed that it was very difficult to complete their course and attributed their completion only to God.

The other difficulty encountered was in assessment during their final teaching practice. They informed that they did their teaching practice at Karen Technical for the Hearing Impaired. Since their tutors did not understand sign language, they felt that they were given a low deal even after preparing so hard and teaching very well.
They also experienced the problem of stigma. While they admitted and appreciated the fact that most of the members of KTTC fraternity had positive attitude towards them and assisted them wherever possible, it was difficult to ignore the few members who looked down upon them.

From the above constraints it is evident that the old students did their training under very difficult circumstances. They struggled to adjust themselves so as to fit in the institution.

4.8 Comments Regarding Implementation of Inclusive Education at KTTC.

All the respondents were asked to give comments or recommendations regarding implementation of inclusive education at KTTC. Their responses are recorded in Table 4.10.
Table 4.10: Comments Regarding Implementation of Inclusive Education at KTTC.

<table>
<thead>
<tr>
<th>Recommendations/Comments</th>
<th>Students N=85</th>
<th>Lecturers N=12</th>
<th>HODS N=11</th>
<th>Adm. Principal N=1</th>
<th>Old students with HI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Train teachers in basic sign language then implement.</td>
<td>85</td>
<td>12</td>
<td>11</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2 Have some teachers trained in HI</td>
<td>80</td>
<td>10</td>
<td>9</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3 Sensitization for attitude change</td>
<td>60</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4 Improve on the infrastructure</td>
<td>70</td>
<td>10</td>
<td>10</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5 Have a language lab and a special resource room</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6 Employ interpreters or teacher aid for the college</td>
<td>80</td>
<td>11</td>
<td>10</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7 Teachers to use more visual teaching aids instead of Lectures</td>
<td>60</td>
<td>4</td>
<td>5</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>8 It can work very well but with adjustments</td>
<td>70</td>
<td>8</td>
<td>6</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9 It is possible because the college is supported by the government.</td>
<td>20</td>
<td>4</td>
<td>7</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>10 Specialized equipments should be bought</td>
<td>50</td>
<td>5</td>
<td>7</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>11 Grant students with HI bursary because KTTC is very expensive.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 4.10 shows that the most common recommendation for inclusive education was training teachers in basic sign language. All the respondents gave this recommendation. Close to it was having some teachers who are trained in H1 teaching in the college, most of the respondents recommended this. This recommendation carried the same weight as that of having interpreters or teacher aid for the college. The table also shows that all the respondents were of the view that inclusive education can work very well with adjustments. Improvement of infrastructure also featured among many respondents. Sensitization for attitude change was suggested by a good number of respondents and so
was use of specialized equipment. Other recommendations that were important were also suggested by different respondents.

From the comments of the respondents it is evident that communication barrier is the greatest hindrance to inclusive education of students with H1. Most of the recommendations rotate around it and agrees with Hunt & Marshall's (2002) observation that making sure that a learner with H1 has access to everything that is going on in the classroom is of the utmost importance. This implies that there is need for considerations that may help facilitate communication in the classroom. Many of these strategies which make the classroom a more visual environment would be helpful for all learners in the classroom. Some of these may include using as many visual aids as possible, using written instructions and summaries, writing key words or concepts on the chalkboard and utilizing captioned films when possible. Lesson observation checklists confirmed that some of these strategies are already in place and what they would require is to be intensified and applied by every lecturer.

The recommendations suggested by the old students of KTTC with H1 seemed to be in agreement with the difficulties they encountered during their training. For example the recommendations that teachers should first be trained in sign language, having some teachers trained in H1, employing interpreters or teacher aid for the college and providing support services, confirm that communication is a great constraint to inclusive education at KTTC.

This is further strengthened by the comment that inclusive education can work but with adjustments. The recommendation of sensitization for attitude change also confirms that some negative attitudes exist and needs to be dealt with. Finally the recommendation to grant students with H1 bursary because KTTC is very expensive, confirms the financial difficulties they went through.

From these recommendations it can be inferred that the view of the old students with H1 is that KTTC as it is, is unfit for an inclusive programme. However with their suggested
recommendations it can work very well because the institution would have adjusted itself to accommodate students of diverse needs.

4.9 Integration
The personal interview with the administrator (Principal) revealed that the institution had some students with disabilities. This was confirmed during data collection process where the researcher encountered some students with physical handicaps and visual impairments in the college. This implied that KTTC has been practicing integration for a long time. It was through such integration that the old students with HI had received their training.

In an integration education programme it is the special learner who adopts him/herself to fit in the environment or the system and not vice versa like in the case of inclusive education. This may explain why there are no adaptations made in KTTC so far despite the institution having been training students with disabilities over the years. It may explain why the old students complained of having faced very many problems during their training. This is supported by Ogweno (2002), Hegarty (2002), MOEST (2003) and Kristensen’s (2002) argument that the shortcomings of integration are brought by the fact that it attempts to modify the learner with disabilities to fit in an ordinary school. This means that it does not challenge or alter in any way the organization of the curriculum, teaching methods, school physical or social systems so as to fully accommodate learners with diverse learning needs. Therefore, integration is a major constraint to inclusion of students with HI for training at KTTC which would need to be dealt with before an inclusive programme can be implemented.

4.10 Admission Criteria
Asked about the admission criteria the administrator informed that vacancies are usually advertised in the media. Qualification depends on the level of certificate one has to receive ranging from certificate in technical teacher education, to diploma to higher diploma. The least qualification for a certificate in technical teacher education is a KCSE graduate with a crafts certificate.
From the admission criteria stated it is evident that many students with HI from Karen Technical or Nyang’oma Technical (St. Joseph), who receive a Crafts Certificate in these institutions, would qualify for at least a certificate in technical teacher education at KTTC. The inference is that admission criteria is not a hindrance to inclusion of students with HI at KTTC and therefore inclusive education is needed to cater for students with HI who qualify for technical teacher training after Crafts Certificate Course. However the Principal also informed the researcher that there is no government policy on special education in the institution. This implies that it would be very difficult to monitor the implementation of inclusive education especially in an institution where negative attitudes still exist.
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.

5.0 Introduction
This chapter presents a summary of the research findings, the conclusions made based on the study findings in connection with the objectives, recommendation for future implementation and suggestions for further research in education.

5.1 Summary of Research Findings
The study intended to establish the main constraints to inclusion of students with HI for training at KTTC. In this section, a summary of the results based on the study objectives are presented.

The first finding was that positive attitude existed among most students (80%) Lecturers (75%) and HOD’S (60%) towards inclusion of students with HI for training at KTTC. They agreed that such students can train together with hearing students, use the same resources and also showed readiness to assist them and socialize with them incase they were admitted. The administrator too had the same positive attitude and confessed that he had already trained two and assisted them especially to lip read him. But on the contrary a smaller number of students (20%), Lecturers (25%) and HOD’S (30%) had negative attitude and felt that students with HI are problematic and should remain in the institutions for the deaf. This negative attitude needs to be addressed because it would still affect the implementation of an inclusive programme at KTTC.

The second finding was that teachers and HOD’S were professionally qualified with 66% of teachers and 81% HOD’S being holders of a bachelors degree and above and the least qualification being a diploma for teachers (16%) and higher diploma for HOD’S (18%). However, it was found that despite this high qualification, none of them was trained in SNE. This contradicted Brennan (1982) assertion that teacher training should secure an extension of sensitive awareness of and knowledge about special needs in the school. Therefore, although qualified for the regular students they were not conversant with the
instructional strategies for students with special needs in general and particularly those with HI. This would make it difficult for them to assist students with HI without understanding their needs.

The third finding was that the teaching learning resources required for training at KTTC were inadequate. This was reported by 59% students, 58% lecturers and 55% HODS. Although observation data indicated that the institution to some extent had sufficient resources most of them were found to be out dated and needed to be replaced with more modern ones. Therefore the resources were both inadequate and unsuitable hence would not favour students with HI. This contradicted Hunt and Marshall’s (2002), argument that for effective teaching and learning of students with HI resources should not only be adequate but also suitable.

The fourth finding showed that teachers used a variety of teaching techniques ranging from two or more. However lesson observation data revealed that they would require modifications in order to cater for students with HI. This is because students with hearing losses may require modifications of the physical, instructional and social environments to benefit fully from education in the mainstream (Hallahan & Kauffman, 1997).

The fifth finding was that oral communication was the most commonly used mode of communication during instruction. It was followed by written communication in form of handouts, signs and gestures were rarely used. Total communication which is the recommended mode was never used. Again such modes of communication would be highly disadvantageous to students with HI unless they were highly modified. Modification of oral communication for example would include use of technology such as overhead projectors to note important points, words, directions and assignments so that you can face students when speaking and modification of written communication would require materials to be adapted so that they are predominately pictorial with some verbal information.

The sixth finding was that there were no teachers at KTTC who were conversant with basic sign language. Even the 3 (25%) who had done the introductory part of it; it was too
basic that they could hardly communicate in it. This probably explains why total communication was never used. Without a mode of communication that students with HI understands, it would be very difficult to train them.

The seventh finding was that there are no support services available at KTTC. This can be attributed to lack of assessment for hearing disability to know those students that may be requiring them. Further, it can be attributed to the integration that is practiced there, which does not provide for any support being offered to students. Instead, the students with disabilities struggle to fit into the system.

The eighth finding was that the old students with HI who had trained in the institution had encountered many constraints. These included communication barrier, lack of support services, financial constraints and stigma from a few members of KTTC fraternity.

The ninth finding was that there is no government policy on special education at KTTC. This would make the implementation of inclusive education very difficult.

5.2 Conclusion

From the foregoing summary, it is seen that; negative attitudes towards students with HI exist among some students, lecturers and HODs. None of the teachers at KTTC was trained in SNE and therefore were not conversant with the instructional strategies for and needs of students with HI. The teaching-learning resources required for training at KTTC were not only inadequate but also unsuitable for students with HI. The teaching-learning strategies used by the lecturers at KTTC required modifications to cater for the needs of students with HI. None of the lecturers was conversant with basic sign language and therefore use of total communication mode for students was never used. The oral, written and manual modes that were used by the lecturers required modification to cater for students with HI. There were no support services at KTTC to cater for students with HI. Integration education programme which is a big hindrance to inclusive education was being practiced at KTTC. The old students with HI had encountered various constraints during their training. There was no policy on special education to stimulate the implementation of inclusive education programme.
The result of the findings led to the conclusion that there are constraints to inclusion of students with hearing impairments for training at Kenya Technical Teachers College. The reason for lack of support services that would enhance inclusive education in the institution was lack of sufficient funds. With such constraints, and despite its importance, it would be very difficult to implement inclusive education at KTTC. Therefore before the introduction of such a programme, the above constraints would need redress. It is on this basis that the following recommendations have been suggested:

5.3 Recommendations
Recommendations were based on the study findings and included the following:

a) Recommendations for KTTC
KTTC to purchase adequate and modern teaching-learning resources to replace the outdated ones. This can be done through government support and also soliciting for donor funding.

KTTC teachers to adapt their teaching strategies so that they can cater for the needs of students with disabilities. They should try to use technology for instruction as much as possible.

KTTC to expound the language department to include sign language in their curriculum. This would be paramount since most graduates of KTTC go to teach at Karen and Nyamgoma Technical Institutes for the HI. This can be done through collaboration with Kenya Institute of Education which already has a sign language curriculum.

KTTC should sensitize its community on SNE so that those who still have negative attitudes can have an attitude change. This can be done in collaboration with Kenya Institute of Special Education, Kenyatta and Maseno Universities.
b) Recommendations for Teachers Service Commission (TSC)
The Teachers Service Commission should deploy teachers who are trained in S.N.E to KTTC so that they can serve as resource persons and assist students with disabilities who are usually admitted for training.

TSC to employ an interpreter, a sign language specialist or a teacher aid for KTTC so that they can assist students with HI both in and outside the classroom.

c) Recommendations for the Ministry of Education (MoE)
The ministry of education should ensure that all teachers at KTTC are in-serviced in SNE. This would enable them teach students with special needs for example those with hearing impairments. This in-service course should include basic sign language to equip tutors for assessment during teaching practice which is usually done in institutions for the HI.

5.4 Suggestions for Further Research

1. During the process of data collection, the need for funding of education for HI in post secondary institutions came out strongly as a recommendation by the two ex-KTTC trainees with HI. The researcher would recommend a study to establish how the education of HI is funded and how the government can come in to assist them through the bursary fund.

2. The study dealt with only one category of disability, the HI. Replication can be done with other categories of impairments.

3. Research can be done to establish the possibility of harmonizing the curriculum of the technical institutions for the deaf such as Karen technical and St. Joseph Technical so as to prepare their students for entry into KTTC.
REFERENCES


http://armlawreview.org/guide/Hamazasp%20Harutyunyan.doc


Appendix A
Questionnaire for Students (QS)

The purpose of this questionnaire is to find out students' attitudes towards training with HI colleagues. The information given will be treated with total confidentiality. It is only required for research purposes. You may not write your name on this questionnaire to ensure confidentiality.

Thank you for taking your time to fill this questionnaire.

Part 1: Personal information
Either tick and/or give information in the spaces provided.

1. Sex
   Male [ ] Female [ ]

2. Year you joined ________________________________

3. Year of study ________________________________

4. Course being undertaken ________________________________

5. Length of the course ________________________________

6. Certificate to be received ________________________________

7. Have you ever had or been treated for any ear problem in your life?
   Yes [ ] No [ ]

8. Is it necessary to have one's hearing assessed?
   Yes [ ] No [ ]
   Please explain your response. ________________________________

Part II: Information on training HI persons and attitudes.

9. Which resources are needed for the course being undertaken?
   ________________________________

   (i) Are they adequate? Yes [ ] No [ ]

   (ii) If No, What improvements would you suggest? ________________________________
10. Tick the methods which your lecturers use to teach and indicate how often they are used.

<table>
<thead>
<tr>
<th>Method used</th>
<th>Often</th>
<th>Rarely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair group or class discussion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question and answer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project work</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. Do you use textbooks in your lessons? Yes [ ] No [ ]

If yes, specify

12. List other materials that you use for learning. Tick as many as appropriate.

- Solid models [ ]
- Charts [ ]
- Maps [ ]
- Real objects [ ]

Any other specify ________________________________

13. Please indicate how you feel about training with hearing impaired colleagues by showing the extent of agreement using the following words:

<table>
<thead>
<tr>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>N</td>
<td>D</td>
</tr>
</tbody>
</table>
Put a tick in one box for each statement.

<table>
<thead>
<tr>
<th>Students feelings</th>
<th>A</th>
<th>N</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Should students with HI be admitted in regular institutions like KTTC?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Could students with HI use the same teaching-learning facilities used by hearing students?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Are special adjustments or adaptations required in order to accommodate students with HI at KTTC?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Would students with HI lower the quality of training in your department?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) Is it easy to socialize with hearing impaired colleagues?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f) Would serious problems arise if a programme to include students with HI was implemented at KTTC?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g) Would having a colleague with HI in the same class bring unnecessary bother to you?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h) Are hearing impaired persons problematic and should they remain in the institutions for the deaf?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) Would HI persons only require support services to facilitate their training in regular institutions?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j) Would you readily assist a hearing impaired colleague in you class by carbon copying notes for them or writing down for them all the verbal instructions from the lectures?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14. Please make recommendation regarding implementation of inclusive education at KTTC.
Appendix B

Questionnaire for Lecturers (QL)

The purpose of this questionnaire is to find out the teaching techniques, teaching-learning resources and attitudes of teachers towards training students with HI in their classes. The information given will be treated with total confidentiality and will only be used for research purposes. You may not write your name on this questionnaire to ensure confidentiality.

Thank you for taking your time to fill this questionnaire.

Part 1: Personal information. Either tick and/or give information in the spaces provided.

1. Sex
   Male [ ] Female [ ]

2. Highest academic qualification
   EACE / KCE / KCSE [ ] KACE [ ] Graduate [ ]
   Post Graduate [ ]
   Any other (specify) ____________________________

3. Highest professional qualification attained?
   P1 [ ] S1 [ ] ATS [ ] Diploma [ ] B.Ed [ ]
   M.Ed [ ]

4. a. For how long have you been in the teaching profession? _____
   b. For how long have you been teaching in this particular institution? _____

Part II Department Information

5. a) In what course or department are you teaching in this institution?__________
   b) How large is your class? _____________________________________________

6. Does your department have enough facilities and resources needed for the course you teach? Yes [ ] No [ ]
7. Tick the methods which you use to teach and indicate how often you use them.

<table>
<thead>
<tr>
<th>Method used</th>
<th>Often</th>
<th>Rarely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair group or class discussion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question and answer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others specify</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. Do you use teaching-learning aids in your lessons? Yes [ ] No [ ]
   If yes list some
   If No give reasons

9. Are there times you use more than one method in the same lesson?
   Yes [ ] No [ ]
   Give reasons for your answer

10. Have you ever received any training in special needs education even if it is a seminar or workshop? Yes [ ] No [ ]
    If yes, please specify the area

11. Are you trained in basic sign language? Yes [ ] No [ ]
    If yes, please specify when (i) At pre-service training (ii) In-service training (iii) Any other (specify)

12. Please indicate how you feel about training hearing impaired students in your class by showing the extent of agreement using the following words.

   Agree   A
   Neutral N
   Disagree D
### Teachers' feelings

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>A</th>
<th>N</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Would Students with HI train together with hearing students?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Would students with HI use the same teaching – learning facilities with the hearing students?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Do students with HI require special services to enhance their training?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. If, you had a student HI in class I would you easily use adjustments in your teaching methods in order to enhance their learning?</td>
<td></td>
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<tr>
<td>e. Would quality of training decline if students with HI are taught together with hearing students?</td>
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</tr>
<tr>
<td>f. Would serious problems arise if a programme to include students with HI was implemented at KTTC?</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>g. Do you feel that students with HI are problematic and should remain in the deaf institutions?</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>h. Would students with HI give you unnecessary burden which you are not ready to carry?</td>
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<td></td>
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</tbody>
</table>

13. Suggest ways in which you could assist a student with hearing impairment in your class?

14. Please make recommendations concerning implementation of inclusive education at KTTC.
Appendix C

Questionnaire for Head of Departments (H.O.D'S) (QHD)

The purpose of this questionnaire is to find out information about departmental establishment and attitudes towards having students with HI for training in your department.

The information given will be treated with total confidentiality and will be used only for research purposes. You may not write your name on this questionnaire to ensure such confidentiality.

Thank you for taking your time to fill this questionnaire.

Part 1: Personal information. Either tick and/or give information in the spaces provided.

1. Sex
   Male [ ] Female [ ]

2. Highest academic qualification
   EACE/KCE/KCSE [ ] KACE [ ] Graduate [ ] Post Graduate [ ]
   Any other (specify) ____________________________

3. Highest professional qualification attained?
   P1 [ ] S1 [ ] ATS [ ] Diploma [ ] B.Ed [ ]
   M.Ed [ ]

Part II: Departmental Information

4. Which department are you heading?
   ____________________________________________

5. For how long have you been a head of department?
   ____________________________________________

6. What trades are offered in your department?
   ____________________________________________

7. Does your department have adequate personnel? Yes [ ] No [ ]

8. Does your department have enough facilities and resources necessary for training?
   Yes [ ] No [ ]
9. Have you ever had students with hearing impairment in your department?
   Yes [ ]  No [ ]
   If yes, which of the following did you do to assist the students? Tick as many as appropriate.
   i) Encouraged teachers to vary their teaching methods [ ]
   ii) Instructed teachers to use total communication (Oral, written and use of gestures) as a mode of communication in class [ ]
   iii) In-serviced some teachers for sign language
   iv) Employed a note taker/interpreter for the student [ ]
   v) Ensured that teachers used overhead projectors or power point computers during lessons
   Any other (specify) __________________________

10. Do you ever have your students assessed for hearing problems?
   Yes [ ]  No [ ]
   If yes, how often __________________________
   If No, Please briefly explain your answer __________________________

11. Do you have any personnel in your department trained in handling students with special needs?  Yes [ ]  No [ ]
   If yes please explain? __________________________

12. which of the following teaching - strategies are recommended in your department. (Tick as many as appropriate)
   i) Lecture method with the teacher talking throughout the lesson, without use of teaching aids [ ]
   ii) Lecture method but with demonstrations where the teacher may demonstrate either in front of the whole class[ ], small group[ ] or individual students [ ]
   iii) Lecture with illustrations using teaching aids, where the teacher combines lecture with use of charts, chalkboard, books, real objects or models. [ ]
   iv) Question and answer [ ]
   v) Class discussions [ ]
   vi) Group work [ ]
   vii) Pair discussion [ ]
   viii) Peer teaching [ ]
13. Please indicate how you feel about training HI students in your department. By showing the extent of agreement using the following words.

Agree A  
Neutral N  
Disagree D

<table>
<thead>
<tr>
<th>HODs' feelings</th>
<th>A</th>
<th>N</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Would students with HI train together with hearing students?</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>b. Would students with HI use the same teaching – learning facilities as the hearing students?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Do students with HI require special services to enhance their training?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Would your department readily assist students with HI to train at KTTC?</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>e. Would quality of training decline if HI students are taught together with hearing students?</td>
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<td></td>
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</tr>
<tr>
<td>f. Would serious problems arise if a programme to include students with HI for training was implemented at KTTC?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Do you feel that student HI are problematic and should remain in the deaf institutions?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. Would students with HI give the department unnecessary burden which you are not ready to carry?</td>
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</tr>
</tbody>
</table>

14. Please make recommendations concerning implementation of inclusive education at KTTC.
Appendix D

Interview Guide for the principal (IGP).

The purpose of this interview guide is to solicit information about the institution and your attitude towards having students with HI for training at KTTC. The information given will be treated with total confidentiality and will only be used for research purposes. Thank you for taking you time to respond to the questions.

1. In which year was the institution established?
2. What is the criterion for admitting students at KTTC?
3. What is the total enrolment? Do you have any students with disabilities among these?
4. Do you have adequate teaching staff for the regular students?
   (ii) Are they all qualified in terms of teacher training?
5. Does the institution have enough teaching-learning facilities required for technical training?
6. Do you ever have your students assessed for any hearing problems? Is it necessary to have such an assessment done?
7. Records show that some HI students were admitted for training in this institution some years back.
   (i) Were they able to cope with the course they were admitted for?
   (ii) Did they have any special problems?
   (iii) What mechanisms did the institution put in place to assist these students?
   (iv) Are you still training students with HI?
8. (i) Do you have any of your teachers trained in special needs education? If yes in which area?
   (ii) Does any teacher have any basic sign language?
9 (i) What is your opinion regarding introduction of inclusive education at KTTC.
   (ii) Is the institution prepared for such a programme?
   (iii) What is your opinion about exposing your teacher to special needs training especially sign language?
   (iv) Do you feel inclusion of students with HI would bring necessary bother to the institution?
(v) Would they use the same learning facilities as the hearing students?
(vi) Do you feel they would require specialized services?
(vii) If specialized service is required does the institution have them? Please comment.

10. What recommendations would you make concerning implementation of inclusive education at KTTC?
APPENDIX E

Interview guide for Old Students with HI (IGOS)

The purpose of this interview guide is to seek information about your training experience at KTTC. The information given will be treated with total confidence and will only be used for research purposes. Thank you for taking your time to respond to the questions.

1. What is the level of your hearing loss? (mild, moderate profound)
2. What is your present occupation?
3. In which year did you complete your training course at KTTC?
4. What course/trade did you specialize in and what certificate did you receive?
5. Briefly explain your experience at KTTC as far as training was concerned
   (i) Do you feel you required special facilities/services to cater for your needs? Which ones?
   (ii) Were the classrooms modified to suit persons with HI?
   (iii) Were the teaching-learning strategies used by lectures helpful to you?
   (iv) Which modes of communication were used by teachers? Did they affect your learning?
   (v) Were there support services available to assist you as a deaf student? (e.g. interpreter services note taker, electronic devices such as computers projectors or hearing devices)
   (vi) During your teaching practice did you encounter major problems? Please explain
6. What was the general attitude of the administrators, teachers and students towards you as a person with HI and towards your training with hearing students?
7. According to you can inclusive programme work at KTTC?
8. What problems did you encounter during your training at KTTC?
9. What recommendations would you make concerning implementation of inclusive education at KTTC?
APPENDIX F
Observation Checklist (OC)

The purpose of this observation checklist is to find out the availability, suitability and adequacy of physical facilities, equipment and support services.

<table>
<thead>
<tr>
<th>a) Physical Facilities</th>
<th>Available</th>
<th>Suitable</th>
<th>Adequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Permanent classrooms</td>
<td>............</td>
<td>............</td>
<td>............</td>
</tr>
<tr>
<td>(ii) Workshops</td>
<td>............</td>
<td>............</td>
<td>............</td>
</tr>
<tr>
<td>(iii) Computer labs</td>
<td>............</td>
<td>............</td>
<td>............</td>
</tr>
<tr>
<td>(iv) Home science block</td>
<td>............</td>
<td>............</td>
<td>............</td>
</tr>
<tr>
<td>(v) Resource room</td>
<td>............</td>
<td>............</td>
<td>............</td>
</tr>
<tr>
<td>(vi) Library</td>
<td>............</td>
<td>............</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>b) Equipments And Resources</th>
<th>Available</th>
<th>Suitable</th>
<th>Adequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) PowerPoint computers</td>
<td>............</td>
<td>............</td>
<td>............</td>
</tr>
<tr>
<td>(ii) Overhead projectors</td>
<td>............</td>
<td>............</td>
<td>............</td>
</tr>
<tr>
<td>(iii) Textbooks</td>
<td>............</td>
<td>............</td>
<td>............</td>
</tr>
<tr>
<td>(iv) Cookers, sewing machines</td>
<td>............</td>
<td>............</td>
<td>............</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>c) Support Services</th>
<th>Available</th>
<th>Suitable</th>
<th>Adequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Interpreter services employed for the college</td>
<td>............</td>
<td>............</td>
<td>............</td>
</tr>
<tr>
<td>(ii) Note takers</td>
<td>............</td>
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<td>............</td>
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<tr>
<td>(iii) Staff trained in handling students with HI</td>
<td>............</td>
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<td>............</td>
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<tr>
<td>(iv) Staff conversant with sign language</td>
<td>............</td>
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<td>............</td>
</tr>
<tr>
<td>(v) Teacher aid</td>
<td>............</td>
<td>............</td>
<td>............</td>
</tr>
<tr>
<td>(vi) Hearing devices</td>
<td>............</td>
<td>............</td>
<td>............</td>
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<tr>
<td>(vii) Assistive listening devices</td>
<td>............</td>
<td>............</td>
<td>............</td>
</tr>
<tr>
<td>(viii) Special resource room</td>
<td>............</td>
<td>............</td>
<td>............</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>d) Any other relevant observations</th>
<th>Available</th>
<th>Suitable</th>
<th>Adequate</th>
</tr>
</thead>
</table>

NB:
Suitable here is used to mean relevant to the needs of students with HI

Adequate – enough for the students available.
Appendix G
Lesson Observation Schedule (LOS)

The purpose of this lesson observation is to observe the actual lesson going on, teaching techniques, modes of communication and physical state of classrooms.

<table>
<thead>
<tr>
<th>a) Physical state of classrooms</th>
<th>PRESENT</th>
<th>ABSENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Non crowded classrooms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) Enough lighting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) Noise proof rooms</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>b) Modes of Communication</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) Manual (signs and gestures)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) Written</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>c) Teaching techniques</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Lecture method</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) Question and answer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) Group discussions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iv) pair group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(v) Use of overhead projectors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(vi) Use of computer (power points)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(vii) Use of teaching aids</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(v) Demonstration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(viii) Project work</td>
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</tbody>
</table>

| d) Any other relevant observations                   |         |        |