# BARRIERS FACED BY STUDENTS WITH HEARING IMPAIRMENT IN INCLUSIVE LEARNING ENVIRONMENT, A CASE OF THE UNIVERSITY OF NAIROBI

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# DECLARATION

This project paper is my original work and has not been submitted for examination in any other university for award of a degree.

Signature_____ Date_____

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**N69/71281/2014**

This project paper has been submitted for examination with my approval as the university supervisor.

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## DEDICATION

To my dear husband Mr. Mwaura Karega and our darling daughter Wambui for believing in me and supporting me. To my mother and sister, for constantly encouraging me to aim for the skies.

# ACKNOWLEDGEMENTS

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## LIST OF ABBREVIATIONS AND ACRONYMS

**dB**          Decibels

**EFA**          Education For All

**GoK**          Government of Kenya

**HI**          Hearing Impaired

**IDEA**          Individuals with Disabilities Education Act (IDEA)

**IDI**          In-depth Interview

**KSL**          Kenya Sign Language

**KIE**          Kenya Institute of Education

**KNBS**          Kenya National Bureau of Statistics

**MOEST**          Ministry of Education, Science and Technology

**PWDs**          Persons with Disabilities

**SWDs**          Students with Disabilities

**SAHI**          South African Hearing Institute

**UN**          United Nations

**UNESCO**          United Nations Educational, Scientific and Cultural Organisation

**UNCRPD**          United Nations Convention on the Rights of Persons with Disabilities

**UNCRC**          United Nations Convention on the Rights of the Child

**UoN**          University of Nairobi

**WHO**          World Health Organisation

# ABSTRACT

This was a cross- sectional descriptive study on the barriers faced by hearing impaired students at the University of Nairobi. The study examined the institutional and social barriers faced by the hearing impaired students in an inclusive learning environment. The study participants comprised of 10 hearing impaired students at the university and data was obtained through semi-structured interviews and key informant interviews. The study was guided by a conceptual framework which explained the relationship between institutional and social barriers affecting the hearing impaired students and the learning outcomes achieved when the barriers were present and when the barriers had been eliminated. Data analysis was done through grounded approach in line with specific objectives.

The findings reveal that significant barriers for hearing impaired students exist and they included  lecturing as a mode of instruction used by lecturers and the framing of examination questions; level of education of the sign language interpreter, knowledge of content taught and a good grasp of signs by the interpreter ; inadequate classroom space and furniture, absence of overhead projectors during lectures, inadequate signage especially in workshops, poor lighting and noisy classroom environment and challenges in socially integrating with the hearing leading to loneliness and isolation.

The study concludes that hearing impaired students are a special population within the university fraternity who require accommodations especially in the class that would ease their learning experience, such accommodations would include the use of overhead projectors and diagrams, avoiding movements and rushed speech while lecturing, ensuring the student seats at the front row in class and  providing opportunities for class participation, encouraging turn taking during class discussions and allowing extra time during examinations. In addition, there is need for the whole fraternity to shift the negative attitudes and perceptions from that of perceiving hearing impaired students as having a defect, individuals who cannot independently make decisions or have ideas or as a group that needs pity, into seeing them as a minority group of persons who are capable of performing as their hearing peers.

The study recommends that the university provide basic sign language training for teaching and non- teaching staff to help ease communication, and because Kenya Sign Language is recognized as an official language in Kenya, it should be introduced as a common course for all students, these steps will help ease communication as well as diffuse the negative attitudes and perceptions that surround deafness. All student clubs, professional associations and groups should endeavor to accommodate students with disabilities and ensure that 5% of these students hold leadership positions. The University of Nairobi disability policy should be implemented fully especially by ensuring that the disability support desks are decentralized to all the colleges, that examination questions for hearing impaired students are modified into simple English and avoiding superfluous words. Financial resources should also be provided for those requiring hearing aids and sign language training for those students who acquire deafness while at the university.

# CHAPTER ONE:BACKGROUND TO THE STUDY

## 1.1    Introduction

Hearing impairment (HI) is considered a hidden disability because it is not visible unlike other types of disabilities such as visual impairment or physical impairment which are clearly identifiable. HI or deafness according to (IDEA, 2004) is a condition where an individual is impaired in processing linguistic information through hearing. The severity of a hearing impairment is measured by the amount of sound that can be heard using one's better ear and this is measured using decibels (dB). It is categorized into four, that is, mild hearing impairment where the minimum sound that can be heard is between 25 and 40 dB, moderate hearing impairment where the minimum sound that can be heard is between 40 and 70 dB, severe hearing impairment where the minimum sound that can be heard is between 70 and 95 dB and profound hearing impairment where the minimum sound heard is 95 dB and over (WHO, 2012). Hearing loss can be caused by a number of factors including; heredity (genetics), aging, loud sound exposure, diseases and infections, trauma (accidents), or ototoxic drugs (drugs and chemicals that are poisonous to auditory structures (Van and Dobie, 2004).

According to WHO (2012), there are 120 million people worldwide with hearing impairment, and 78 million of those affected are in developing countries. In Sub Saharan Africa more than 1.2 million children aged between 5 and 14 years suffer from moderate to severe hearing loss in both ears and is considered to be mainly due to ear infections, lack of hygiene and lack of treatment (SAHI, 2011). In Kenya, the KNBS (2010) census

estimated that out of 38.7 million, 800,000 have HI. The numbers of children with HI keep increasing and thus the need to create educational opportunities for them by making schools and institutions accessible to them (Adoyo, 2015).

Education as a human right has been and continues to be one of the things that most nations strive to provide for their citizens. In the post-colonial period, the Kenyan Government took education full throttle as a way to satisfy the immediate needs of the country which was to have a skilled human resource. However, in this effort, education for children with disabilities was not looked into until the late 1950s when two special needs units were opened in Aga Khan Schools in Mombasa and Nairobi (Oketch, 2009).In 1968, the government published Sessional Paper No. 5 on Special Education which laid out public policy framework for children with disabilities. A special education management structure was set up comprising of a special education unit at the Ministry of Education headquarters, an inspectorate (special unit) and a special education curriculum development unit at KIE to cater for children with disabilities. The objective of the special education programme is to assist persons with disabilities to develop towards realization of full participation of disabled persons in social life and development and equality (MOEST, 2003).

According to GoK (1988), the first rehabilitation centre for handicapped children was opened in 1971 with the aims of correction, rehabilitation and prevention of impairments. After the development plan of 1984/1989, the government felt the need for integration and involvement of parents in the education of children with disabilities (KIE, 1985). The

implementation and practice of special education programmes today is guided by the policies pronounced in the Sessional Paper No. 6 (GoK, 1988) and the Special Needs Education Policy of 2010 (GoK, 2010). The key policies in this sessional paper include integration of children with disabilities into regular formal schools in order to enhance their participation in formal education, early identification and assessment of children with disabilities and sensitization of parents and communities about the needs of children with disabilities to enroll in special education programmes.

Further, The Kenyan government is also guided by the Persons with Disabilities Act 2003 (GoK, 2003) which is undergoing repealing so as to be in sync with the Constitution of Kenya (GoK, 2010) as well as being a signatory to various international conventions and declarations such as UNCRC (1948), World Conference on EFA (1990), World Conference on Special Needs Education (1994), Dakar Forum for Action (2000), and UNCRPD (UN, 2006).

In an effort to achieve a broad vision of Education For All (EFA), inclusion has been adopted to address the spectrum of needs of learners, including those with hearing impairment, The Salamanca Statement on the principles, policy and practice in special needs education has also provided valuable reference points for inclusive education as it provides a framework for thinking about how to move the policy into practice (Adoyo, 2007).

Including hearing impaired students in mainstream schools has been an extremely complex, controversial and contentious issue across the globe (Stinton and Antia, 1999). The idea of inclusivity has been challenged by Kaupinnen (1994) that including a HI child in a regular system increases his handicap. Liu et al. (1996) also points out that HI students in inclusive settings experience a number of problems such as the rapid rate at which tasks in the classroom are discussed, abrupt and quick turn taking in the discussions, rapid change of the conversational theme or topic and the high numbers of speakers involved in a group discussion. All these may create difficulties in the control of the communication in class.

In a social context, HI students often do not feel as much a part of the "university family" as their hearing peers (Foster et al., 1999), inadequate levels of access to interpreting services and a lack of awareness of deaf students' needs among academic staff (Komesaroff, 2005) also pose a challenge. Some students may not seek support services simply because they are unaware of the difficulties they could face in postsecondary education institutions, where teaching and learning conditions are very different from those in secondary schools (McLean, 1999).

Nonetheless, Ndurumo (1986) explains that, academic education is important in the education of the hearing impaired. This is because it assists in preparing these children to compete with hearing peers. He asserts that special education cannot be divorced from regular education and it is important in preparing children with hearing impairment for the competitive world of work and survival.

**1.2 Problem Statement**

Studies on hearing impairment have tended to focus on inability to communicate as the only barrier experienced by the hearing impaired persons (Gudyanga, *2014).* Studies by Kahingi(2008) and Munyua(2009) have focused on factors affecting teaching and learning for hearing impaired students in deaf schools, leaving out the experiences and challenges in an inclusive learning setting faced by those with hearing impairment. Further, a study by Yabbi (2014) among students with hearing impairment only focused on the socio-economic and cultural challenges to their performance in school. From the foregoing, experiences of students with hearing impairment at higher education institutions have not been documented hence, the interest of this study. This study sought to provide answers to the following research questions:

i. What are the institutional barriers to learning faced by hearing impaired students at the University of Nairobi?

ii. What are the social barriers to learning faced by hearing impaired students at the University of Nairobi?

**1.3 Study Objectives**

**1.3.1 Overall Objective**

To explore the barriers faced by students with hearing impairment in inclusive learning environment at the University of Nairobi.

**1.3.2 Specific Objectives**

1. To find out the institutional barriers faced by students with hearing impaired at the University of Nairobi.

2. To find out the social barriers faced by students with hearing impaired at the University of Nairobi.

**1.4 Assumptions of the study**

1. The lecture mode of instruction negatively affects the learning outcomes of hearing impaired students at University of Nairobi.

2. Discrimination by peers, faculty and administration staff affects learning outcomes for hearing impaired students at University of Nairobi.

**1.5 Justification of the study**

The findings in this study aid the University of Nairobi management to provide directed assistance to specific disabilities by developing disability support desks in all colleges and a disability information management system. The support desks will assist in collecting data from the colleges and feed into the system which in turn will assist in identifying the nature of disability and assistance required. The findings also aid the management in developing institutional programs like sign language training and disability mainstreaming training to create awareness on disability issues in the University.

Moreover, the study findings provides awareness for lecturers on the ways to modify teaching to suit the hearing impaired student and the need to understand deafness so they are able to accommodate them in their classrooms. In addition, these findings contribute to the academic fields of gender studies and special needs studies, specifically on students with hearing impairment at institutions of higher learning. The study has made recommendations on areas that require further research. In this sense, this research has provided leads for other related studies in the future.

**1.6 Scope and limitations of the study**

The study only documented the barriers faced by students with hearing impairment in an inclusive learning environment at the University of Nairobi. It specifically looked into the institutional based barriers and social based barriers faced by HI students in an inclusive education. The study focused on the barriers facing hearing impaired students only, thus challenges affecting those with albinism, visual and physical disabilities were beyond this scope.

The study was qualitative in nature and did not document the quantitative trends and patterns of barriers faced by HI students in inclusive education however; triangulation of data collection methods was employed to ensure adequate information to answer to the study objective was realized. In addition, due to the unique nature of the study participants, the researcher doubled as a sign language interpreter during the study phase.

**1.7 Definition of terms**

**Barriers:** Institutional or social elements that stand in the way of an individual being able to learn effectively.

**Disability**: A physical or mental condition that limits a person's movements, senses, or activities.

**Hearing Impaired:** All levels of hearing losses ranging from mild to profound.

**Hard of Hearing:** A hearing loss where there may be some hearing that an auditory device, such as a hearing aid or assistive listening devices provide adequate assistance to process speech.

**Hearing Aid:** A device that amplifies sound for the wearer to make speech more intelligible.

**Inclusion**: The process of adjusting an institution so that all the individuals with hearing impairment are fully accommodated.

**Inclusive Education:** The educational practice of educating students with hearing impairment in classroom together with students without disabilities.

**Instruction:** A systematic presentation of facts, ideas, skills, and techniques to students.

**Sign Language:** A system of making signs for letters, words, and group of words using fingered signs and body gestures.

**Sign language interpreter**: A trained professional who facilitates communication and conveys all auditory and signed information so that both hearing and deaf individuals may fully interact.

**Sign Exact English**: Signing words and groups of words in the same format as spoken English.

## CHAPTER TWO:LITERATURE REVIEW

## 2.1 Introduction

This section reviews literature on barriers faced by students with hearing impairment in inclusive education at the University of Nairobi. The review is carried out using the following sub-topics: inclusive education, institutional based barriers and social barriers. The section concludes with a conceptual framework that will guide the study.

## 2.2 Inclusive Education

According to UNESCO (2005), inclusive education refers to the diversity of needs of all learners through increased curriculum content, approaches, structures and strategies, with a common vision which covers all children of the appropriate age range and a conviction that it is the responsibility of the regular system to educate all children. It is a process of reforming schools and attitudes, which ensures that every child receives quality and appropriate education within the regular schools. In this way, inclusion is more complex than mere physical placement of children with special needs in the regular classroom. Inclusion means fully including students with diverse abilities (both gifted and disabled) in all aspects of schooling that other students are able to access and enjoy. It involves regular institutions and classrooms genuinely adapting to and changing to meet the needs of all students (Loreman and Deppler, 2001:13).

It is based on the idea of social justice that advocates equal access to all educational opportunities for all students regardless of the presence of a disability. In recent years, much debate has taken place concerning the viability of inclusion as a realistic educational option for all students, and this debate continues as the research base on inclusion continues to grow and inform arguments (Loreman, 2003). Lipsky and Gartner (2006:762) describe inclusive education as placing students with disabilities of all ranges and types in general education classrooms with appropriate services, positive attitude and supports provided primarily in that context.

This trend has been supported by the United Nations policies which affirm the rights of children: UNCRC (UN, 1989), the United Nations Standard Rules for the Equalisation of Opportunities for Persons with Disabilities (UN, 1993) and the Salamanca Statement (UNESCO , 1994). Educational policies in developing countries have also responded to the social justice agenda in different ways. In Kenya, for instance, The Kenya Constitution, 2010 (GoK, 2010), the Persons with Disabilities Act, 2003 (GoK, 2003), Special Needs Education Policy, 2009 (GoK, 2009) and the Basic Education Act, 2013 (GoK, 2013) all work in attainment of inclusive education for the disabled child.

Inclusive education is a notion born in the evolution of society's changing views of the disabled. As educational systems began to accept students with disabilities, best placement concepts were debated (Friend et al., 1989). The history of special education, according to Smith et al.,(1998) has evolved in three distinct phases, from relative isolation/segregation, to integration and mainstreaming, and finally to our current phase

of inclusion. The segregated approach which placed learners with disabilities in special learning institutions for the purpose of meeting their educational needs was seen as a way of discrimination. Then integration and mainstreaming arose as some of the ideal solutions to exclusion. These approaches did not produce the expected wide-scale improvement as the academic achievement gap between the regular students and those with disabilities in the integration and mainstreaming setups continued to widen (Adoyo and Odeny, 2015).

In efforts to meet obligations towards the international and national policies for inclusion, persons with disabilities are now appointed in decision making organs and their voices are heard. Due to learners' diversities in regular classrooms, the ministry of education through the Kenya Institute of Curriculum Development and the Kenyan National Examination Council has been able to differentiate the curriculum and the national examinations, respectively, to take care of the needs of every individual learner with disability (Adoyo and Odeny, 2015).

Students with disabilities who are included in regular institutions tend to become adults who spend more time in leisure activities outside home, with others who are non disabled and spend more time in community work than their counterparts in segregated institutions (Alper and Ryndak, 1992).In addition, Davern and Schnorr (1990) state that another benefit of inclusive education is that it assists with the development of general knowledge for SWDs. According to Tufekcioglu (2000), one benefit of inclusive education for HI students is to have a constant input of spoken language through interaction with hearing

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peers to acquire the language of a hearing society. The HI student will have access to a richer and wider curriculum to prepare for a competing world of work.

## 2.3 Institutional based barriers

Although the goal of inclusive education is to promote the academic and social integration of students, regardless of hearing status, hearing impaired students in public institutions often face social isolation and difficulties in academic participation (Stinson and Antia, 1999).

Classroom participation and a sense of academic integration are acknowledged as important for the academic success of all postsecondary students (Tinto, 1993), but are often lacking for hearing impaired students (Stinson and Walter, 1997).

### 2.3.1 Mode of instruction

In a study of the history of Deaf education, Marschark and Spencer, (2010), found out that valuable techniques for instruction such as providing meta cognitive skills to enhance reading or using writing as a process to assist learning the curriculum were methods that were promoted by teachers of Deaf children a century ago but are not applied extensively in classrooms today. Participation by hearing impaired students in higher education classrooms may relate to the approach employed to communicate course content. Inclusion was found to have failed in part because instructors were unable to meet the demands of modifying and delivering an appropriate mode of teaching students with hearing impairment (Fox and Ysseldyke, 1997).

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Instructors may speak extremely fast, move through material very rapidly, and maybe insensitive to the needs of hearing impaired students trying to follow the lecture through an interpreter (Foster and Elliott, 1986).An instructor needs an understanding of deafness in order to modify the delivery of lessons appropriately and maintain natural speech patterns. The basic knowledge of hearing loss will make an instructor more comfortable working with a hearing impaired student, they will be able to make appropriate adaptations and accommodations in teaching strategies, activities and curriculum to meet the needs of students (Underwood, 2003).

Classroom participation refers to the student's ability to participate in classroom activities and discussion. It is important for students to participate as it has been found to be a good predictor of course grades (Saur et al., 1983). Students who have difficulty communicating in the classroom may choose not to participate in classroom activities, which may in turn affect their learning and their academic success (Long et al., 1991). This requires that the hearing impaired student have access to all lecturer and student communication and also that discussions and other activities are structured in a manner that allows the student to participate (Stinson and Antia, 1999).Some of the barriers to classroom participation include the rapid rate of instruction and discussion, rapid turn taking, rapid change of topics, the high number of speakers involved in the discussion, and the use of space(physical arrangements in the classroom) (Stinson et al., 1996).

While teaching in classrooms, instructors must keep their faces visible especially for hearing impaired students. A preferable sitting place for them would be in the front. However, left or right side of the room can be selected according to the better ear of the student. (Lockwood 2001). Instructors need to learn the effective ways of communicating with hearing impaired students as well as have guidance about the classroom acoustics and hearing devices used by the deaf students (Lanfer, 2006).

A hearing impaired student misses out if an instructor gives instruction while writing on the board, therefore an over-head projector can be a good alternate solution as the instructor can face the class all the time he is talking whilst still providing visual support (Waayer-Engles,1996).A study by Hyde and Power, (2003) revealed that most instructors were reluctant to invest time in training and professional development in how best to accommodate deaf students, citing the small percentage of these students in their classes.

A study with hearing impaired university students revealed that students valued instructors who are knowledgeable about the course content and who use visual materials, communicate expectations and assignments clearly, lecture at a good pace, make sure students understand, challenge students' thinking, and emphasize important information in the class (Lang et al., 1993).

## 2.3.2 Sign Language Interpreters

One of the most salient characteristics of learning by hearing impaired students in mainstream classrooms is the students' dependence on a third party to provide access to

information. Information is received by the student through interpreting and/or real-time captioning during class sessions, or through notes (note taking or printouts) outside of class (Stinson et al., 1999).

Despite the importance of sign language interpreting for many deaf students, there is surprisingly little research concerning its effectiveness in the classroom. There is therefore a dire need to evaluate the relationship of interpreting to learning (Marschark et al., 2005).

Content knowledge by instructors, however, appears to be highly valued by hearing impaired students, but perceptions of the importance of the interpreters' familiarity with content material have also not been investigated (Lang et al., 2002).Familiarity with the content may lead to more appropriate sign selections and fewer misinterpretations of an instructor's lecture emphases (Seal, 1998).

Students who use interpreters may find that the lag time between the spoken and signed message prevents them from answering questions (Stinson et al., 1996). Interpreters in classes may inadvertently isolate the hearing impaired student from classmates by being too helpful and answering questions on their behalf, thereby preventing them from active participation in class discussions (Giangreco et al., 1997).

As mainstream academic placement has become the primary means of educating hearing impaired students, a serious shortage of qualified sign language interpreters has developed and those who are available are either unqualified or under qualified (Jones et al., 1997).The problem facing the interpreting profession in Kenya and Africa is that institutions offering formal training are almost non-existent. Furthermore, examining and accrediting bodies, and associations of certified interpreters are non-existent. Kenya's Persons with Disabilities Act 2003 (GoK, 2003*)*, which lumps interpreter services together with assistive devices, has yet to vigorously enforce the provision of interpreting services (Ndurumo, 2005). Schick et al. (1999) in a study in public schools in the U.S found that less than half of the interpreters they evaluated performed at a level considered minimally acceptable for educational interpreting. They concluded that many hearing impaired students are denied access to classroom communication because of the poor skills of their interpreters.

### 2.3.3 Resources and Infrastructure

The need for additional funds to be provided to institutions for the purpose of educating students with hearing impairments has long been recognized by researchers (O'Shea and O'Shea, 1998).

The ways in which our institutions are organized and classrooms structured are often not conducive to effective learning for the majority of students (Kennedy and Fisher, 2001). The classroom environment is a very crucial aspect for a hearing impaired student. If there is noise within or outside the classroom, it will impact on their ability to use

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residual hearing through hearing aids, and the student will not be able to understand and interact in the classroom effectively (Sundeen, 2007). Teaching and learning in an acoustic friendly environment will be very effective to speed up the learning of a hearing impaired student and promote his or her participation in the classroom. In addition, the sitting location and lighting is also very important for interaction in a regular classroom. Some students with hearing impairment may need a good visibility and facial cues for lip-reading. Lip reading involves observing a person's face and mouth to understand what words are being said (Asif, 2008).

Ainscow (1995) suggests the ideal physical environment for students with hearing impairment. The classrooms should be away from noise and controlled for acoustics that affect hearing aids. There is need to add carpets, window treatments, or acoustical wall/ceiling coverings to absorb sound and reduce noise from furniture scrapping on hard surfaces by attaching rubber shoes to the legs of students' desks and chairs. The classrooms should also be well lit to enable the students to lip read and to read the signing. Provisions for written or captioned school    announcements should also be availed (Stinson and Whitmire, 2000).

Students who are hard of hearing utilize a variety of assistive technologies that provide them with improved accessibility in numerous environments. Most devices either provide amplified sound like the hearing aids or alternate ways to access information through vision and/or vibration (Northern and Downs, 2002).Technology such as computers, televised announcements, sound field amplification systems, and interactive white boards

can have positive impacts for hearing impaired students. A successful inclusion occurs when an individual is given all of the supports needed, whether it is physical (assistive technology like hearing-aids) or human (a trained assistant); and when the level of the disability matches appropriately the environment into which the individual is placed (WATI, 2009).

## 2.4 Social Barriers

Hearing impairment is considered a disability, therefore the people who are deaf carry with them the stigma of lacking a typical human characteristic (Linton, 1998).The concept of stigma can be negative, because it separates the individual from the norm (Brewster, 1995). It has been argued by Foster and Brown(1988)  that when people with disabilities identify with other people who have disabilities they do not regard themselves as stigmatized, but as members of a select group, and this has an overall effect on social integration with the hearing persons.

Social integration can be defined as the ability to interact with, make friends with, and be accepted by peers. Students need to be able to participate in social activities and develop close and emotionally secure relationships with peers (Stinson and Antia, 1999).

### 2.4.1   Social Integration with Peers

A study of public schools in Australia that focused on the social status of hearing impaired students compared with hearing students discovered that a large number of hearing impaired students were rejected by their hearing peers as compared to only a

small number of hearing students who, like the deaf students, also became social misfits (Cappelli, 1995).Hearing impaired students may experience feelings of loneliness because they cannot easily participate in social activities with peers due to communication difficulties. They may also begin to identify themselves as helpless individuals and avoid participating in school activities (Scheetz and Lee, 1993). Many students report that although they participate in social activities with hearing peers, their relationships are short-term and casual and that they feel emotionally secure only with other friends who are hearing impaired, although some are emotionally secure with hearing classmates (Stinson et al., 1996).In informal settings like the canteen, others mentioned the difficulties of socializing in such noisy environments and that interpreters were not available for "social or impromptu meetings (Hyde and Power, 2003).

The biggest problem and root cause of the increase in isolation and anxiety is communication difficulties fostered by the mainstreamed setting. A study of mainstreamed students showed that rather than being actively disliked, hearing impaired students were neglected by the hearing students in terms of socialization (Martin and Bat-Chava, 2003).The experiences of the hearing impaired graduates of inclusive institutions seem to indicate that during their attendance in these schools they encountered feeling of marginalization and isolation because they could not communicate easily with their classmates (Angelides and Aravi ,2007).

## 2.4.2 Social Integration with Faculty and Administration Staff

In a University setting, administrators and faculty members play key roles in creating a supportive environment for students with disabilities; many intend to interact with students with hearing impairment but tend to create these barriers unintentionally (Wilson and Getzel, 2001).

Students with HI are evaluated more negatively by teachers and hearing peers on dimensions such as intelligence, achievement, and personality through a phenomenon known as the hearing aid effect. Hearing aid effect is described as a negative psychosocial association with hearing aid wearers (Blood et al., 1978).

Polat (2011) points out that resources and improved infrastructure are not the only adjustments for inclusion and that dealing with attitudinal barriers among school educators and in the wider community is a key aspect of making inclusive education take place. The meaningful participation of students with disabilities in an institution and the community is influenced by the cultural attitudes and values of its citizens. If a society expresses disregard and prejudice towards people with disabilities, then discriminatory practices will continue to be propagated. Furthermore, research reveals that hearing impaired students withdraw from postsecondary programs because they have difficulty choosing a major that matches their interests and abilities (Scherer & Walter, 1988).

Brelje (1999) identified the lack of quality primary and secondary educational opportunities as a major reason why many countries have few hearing impaired students in higher education institutions. Regardless of the country, the academic and social/personal characteristics of the hearing impaired students that present obstacles to their success in higher institutional programmes also have their roots in both inadequate early intervention (in infancy and childhood) and lack of preparation for higher education schooling (Marschark, Lang, &Albertini, 2002).

## 2.5 Conceptual Framework

The framework below (Fig.2.1) explains how institutional based barriers and social barriers affect learning outcomes of a student with hearing impairment. The institutional based barriers are in form of lecturers without an understanding of hearing impairment, when learners are not encouraged to participate, interpreters who do not understand course content, inadequate infrastructure and resources, ill-motivated lectures and learners without learning incentives. Social barriers would be in the form of discrimination and isolation from peers, lack of participation in integrated social forums, negative attitude from faculty and administration staff and lack of guidance on course choice. All the above barriers will lead to a low or poor learning outcome for the student.

High learning outcomes can, however, be achieved when lecturers have an understanding of what hearing impairment is and encourage the HI learner to actively participate. It is equally motivational when the sign language interpreter is conversant with the course content and has a good grasp of sign language. A motivated lecturer carries out

supervision of his teaching by finding out if the mode of delivery of instruction example teaching, use of visual aids, etc.is satisfactory to the HI student and supervision of learning of the student by constantly asking the HI student questions to evaluate level of understanding and also by giving incentives. In addition, adequate and available resources and infrastructure creates an environment that is conducive for the HI student to learn.

An environment that is socially accepting in terms of peers who consider the hearing impaired student as one of them and faculty and administration staff that treats the student without bias or discrimination will lead to a student with high learning outcomes.

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│ INDEPENDENT VARIABLES   │                              │    DEPENDENT     │
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│    hearing impairment is│                            │                      │
│  • Learners not encouraged │                         │                      │
│    to participate       │                            │                      │
│  • Lack of  understanding of │                        │  Learning outcomes for │
│    content by interpreter │                          │  hearing impaired students. │
│  • Inadequate infrastructure │                       │                      │
│    and resources        │                            │    High or Low       │
│  • Inadequate supervision of │                        │                      │
│    teaching/Learning    │                            │                      │
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│  • Lecturers who are not │                            │                      │
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│  • Learners not participating │
│    in integrated social │
│    forums               │
│  • Faculty and          │
│    administration staff with │
│    negative attitude    │
│  • Lack of guidance in  │
│    choice of course to match │
│    interests and ability │
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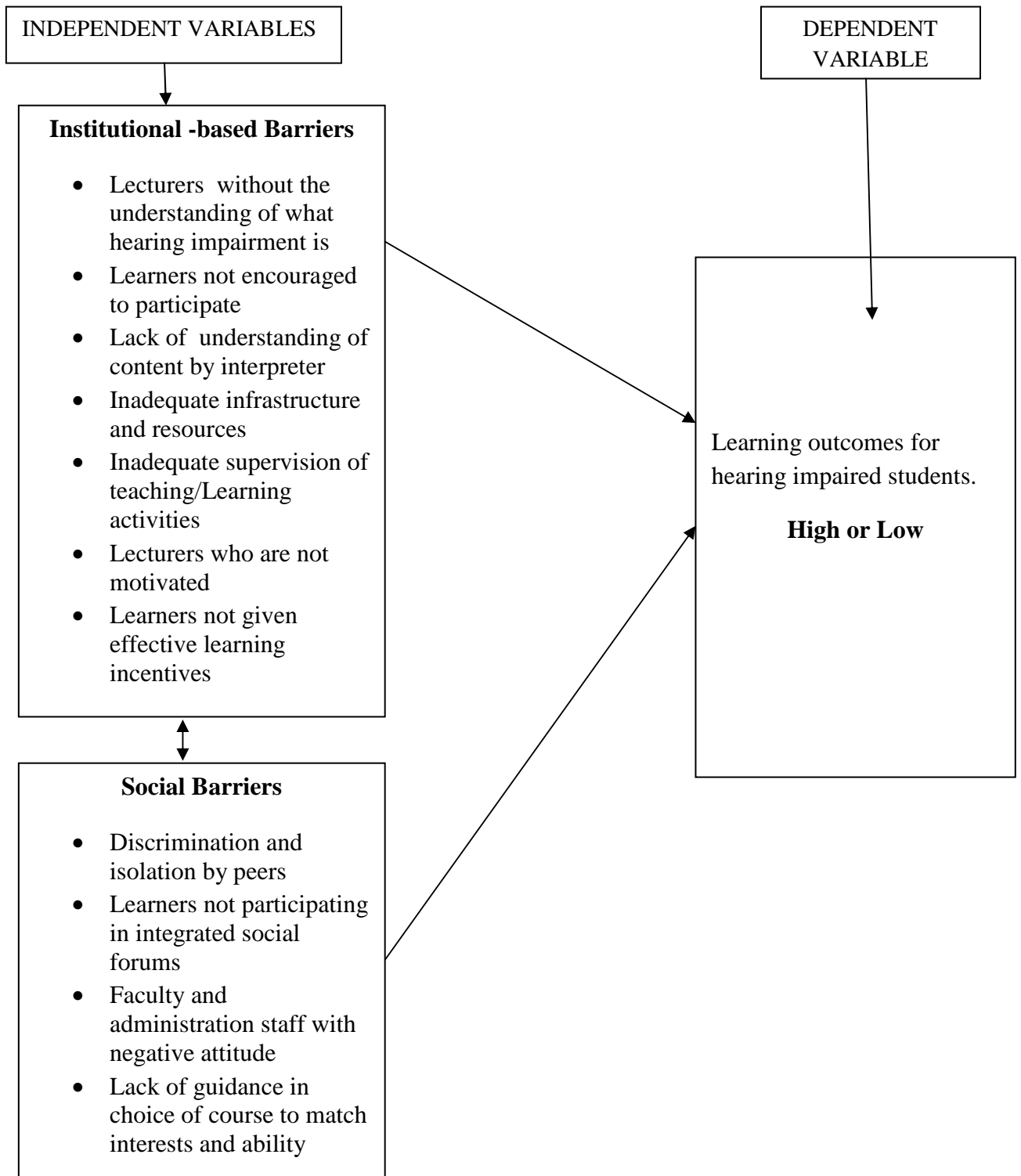
**Figure 2.1: Conceptual Framework**

**CHAPTER THREE:METHODOLOGY**

## 3.1 Introduction

This chapter presents the methodology of the study. It gives a description of the research site, the research design, study population, sample size and sampling procedure, data collection methods, and data processing and analysis. The chapter concludes with a discussion on ethical considerations that guided the study.

## 3.2 Research Site

The study was carried out at the University of Nairobi which is a public university in Kenya located within the Central Business District (CBD) of Nairobi County (Fig.3.1). The university has a population of approximately 70,000 students in all its campuses which are in Nairobi and satellite campuses in different counties within the country.

The University has approximately 70 students with disabilities spread across all campuses and undertaking both modules I and II. Out of the 70 students, the visually impaired are 32, physically challenged are 25, the hearing impaired are 10 while those with albinism are 3. The gender distribution for the hearing impaired students is 1 female and 9 male (www.uonbi/studentlife.ac.ke). Learning in the institution is inclusive in that students with the various disabilities are combined with their hearing peers. Due to this, the university has employed the services of sign language interpreters for the hearing impaired and guides for the visually impaired students.

**Figure 3.1: University of Nairobi**

## 3.3 Research Design

The study was a cross-sectional descriptive study using qualitative data collection method. Semi- structured interviews and key informant interviews were the main data collection methods. Study participants for the semi- structured interviews and key informants were purposively selected. The study participants were obtained from all campuses. The data collected was analysed in line with the study objectives.

The study began by conducting semi structured interviews with the informants on their academic and social experiences at the university. This was followed by key informant interviews which were conducted to bring in the expert opinions on the study objectives, provide clarity on issues raised by the hearing impaired students as well as offer recommendations.

The data collected was translated and transcribed. Thematic analysis followed in line with the specific study objectives. Verbatim quotes were used during data presentation to represent the voices of the informants.

## 3.4 Study Population and Unit of Analysis

The study population was the students with hearing impairment at the University of Nairobi. The unit of analysis was the individual student with hearing impairment.

**3.5 Sample Size and Sampling Procedure**

According to Dolores and Tongco (2007) purposive sampling is a method that a researcher uses to reach a targeted sample with specific characteristics. This study was conducted with 10 students purposively on the basis of their hearing impairment. Key informants were purposively selected from the University of Nairobi, the Dean of Students whose office has the mandate to cater to the welfare of students with disabilities, a lecturer/technologist from College of Architecture and Engineering, a lecturer with hearing impairment and an official from the Kenya Institute of Special Needs Education.

**3.6 Data Collection Methods**

**3.6.1 Semi- Structured Interviews**

These were conducted with 10 HI students from all campuses. The interviews were semi-structured to allow for further probing on the basis of information provided by the informants. The informants provided information based on their experiences at the UoN. These interviews sought to find out the barriers experienced with the use of sign language interpreters, the lecture mode of instruction used during lectures and the nature of examinations, and the social barriers experienced in inclusive learning. A semi-structured interview guide (Appendix 2) was used to collect data.

**3.6.2 Key informant interviews**

These were conducted with four experts selected on the basis of their experience in serving hearing impaired students. The key informants provided information on barriers experienced in accessing resources and infrastructure for students with HI, barriers that

affect social integration of hearing impaired students with faculty and administrative staff, existing policies on hearing impairment and the challenges thereof and provided suggestions to improve service delivery to students with HI.

## 3.7 Data Processing and Analysis

Data analysis is the process of bringing order, structure and meaning to the mass of collected data (Marshall and Rossman, 1990). Data analysis attempts to make sense of the collected data.

The data collected from semi-structured interviews and key informant interviews was translated, transcribed and coded for analysis. Translation and transcribing was done alongside data collection to ensure information collected was significant to the study as well as allow for adjustment of the interview guides to obtain more information from the students. The transcripts were coded to ensure confidentiality of the information provided.

Thematic analysis was done in line with the study objectives. The themes emanated from the research questions and were pre- set before data collection began. Other themes emerged while the study was being conducted. To ensure validity, the themes were thereafter sub divided into thematic groups to enable analysis of the themes in connection with the study research questions. The themes involved institutional barriers such as mode of instruction, sign language interpreters and resources and social integration barriers.

Verbatim was used in data presentation where direct quotations from the informants were used to amplify the voices of the informants.

## 3.8 Ethical Considerations

The researcher ensured ethical considerations were put in place before embarking on fieldwork by obtaining a research permit NACOSTI/P/16/74053/13302 from the National Commission for Science and Technology Innovation (NACOSTI). A consent form was obtained from the Institute of Anthropology Gender and African Studies of the University of Nairobi to obtain approval from the participants.

During fieldwork, the researcher explained to the participants that their participation was to be voluntary and that they were free to withdraw whenever they deemed fit. Informed consent was obtained from the participants using the consent form (Appendix 1). Participants were assured that their privacy was protected by strict standards of anonymity where coding was used. The participants were assured that any information they shared was confidential.

# CHAPTER FOUR

# BARRIERS FACED BY STUDENTS WITH HEARING IMPAIRMENT

## 4.1 Introduction

This chapter presents findings of the study to establish the barriers faced by hearing impaired students in inclusive learning environments. Presentation will be carried out along the following sub-thematic areas: Mode of instruction, Sign language interpreters, resources and infrastructure, social integration with peers and social integration with faculty and administration staff.

## 4.2 Demographic Characteristics of the Respondents

### 4.2.1 Age

In the study, age of the students with hearing impairment was deemed important in understanding the relationship between their age and the barriers experienced. The findings indicated that the respondents' ages ranged between 20 – 40 years with 60% being between ages 20-25 and 40% ranged between ages 26- 40 as summarized in figure 4.1.

**Table 4.1 Respondents Age**

| Age Category | % of HI students |
|---|---|
| 20-25 | 60% |
| 26-40 | 40% |

It was evident that the younger students experienced more barriers unlike the older students as indicated by the responses below,

> *"I had just completed High School when I joined the University. In high school we used Kenya sign language only, but once I got to the university, the interpreters would use Signed Exact English which gave me a bit of a hard time because it was more English than Kenya sign language"( SSI # 8 with a 20 year old HI student).*
>
> *"My work engagements have always required me to work with an interpreter, therefore having one in class made my life much easier (SSI# 9 with a 40 year old HI student).*

The same is true as indicated by a key informant concerning the challenges the younger HI students face.

> *"Younger hearing impaired students who have just joined the university fresh from high school often have a difficult time adjusting to university life. Most report feeling lonely as they are not able to interact with their hearing peers" (KI#3with the Dean of Students).*

It is evident from the findings that the younger students experienced more challenges on how to handle life at the University unlike the older students. A study by Kersting (1997) concurs with the findings and showed that Deaf first-year college students tend to have more social difficulties in developing social bonds with peers. For a first year student, to assimilate new information and knowledge, they have to overcome the shortcomings of

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their previous school experience, such as language deficiencies, inadequate study conditions, a lack of logic skills, problems with reading comprehension and difficulty in producing text (Santos, 2002).

**4.2.2 Level of deafness.**

Understanding the different levels of deafness was important to the study as it highlighted the challenges each level experienced in terms of modifications and accommodations required. The levels are mild, moderate and profound. Age 3 is commonly used to distinguish pre-lingual and post- lingual deafness as it is considered the age when children acquire speech .Individuals with the profound level majority of the time acquired it pre-lingual with those at the moderate and mild levels acquiring deafness post- lingual.

The findings indicated that 60% of the HI students had profound level of deafness, 30% had moderate level of deafness and 10% had mild deafness. Those who acquired deafness pre-lingual were 60% of the participants as summarized in figure 4.2.

**Table 4.2 Level of deafness of the Respondent**

| Level of deafness | Nature of acquiring deafness | % of HI students |
|---|---|---|
| Mild Level | Post- lingual | 10% |
| Moderate Level | Pre or post - lingual | 30% |
| Profound Level | Pre- lingual | 60% |

This shows that the students who had profound levels experienced challenges majorly with the lecture mode of instruction, the sign language interpreters and had a difficult time socially integrating with their hearing peers. Those with moderate and mild levels experienced challenges with working with interpreters, the infrastructure especially class environment which was noisy because they used hearing aids as well as poor lighting which made lip-reading difficult as was shown in one of the interviews This is evidenced as expressed by the in depth interview participants.

> *"I have profound deafness (since birth) and have attended deaf- only schools, but at the University I have had to learn to cope with the environment which is different. I was used to my teacher using sign language which is not the case at the University, I must have an interpreter" (SSI #1with a 21year old HI student).*

Students who become deaf after they had acquired language experience reduced problems in academic performance.

### 4.2.3 Schools attended

The study deemed it important to know the school attended by the HI students as it will show the extent to which these students are able to comprehend and communicate as well as their ability to interact with their hearing peers. A HI student can attend either a Deaf-only school; where all students have hearing impairment and communication is in sign language, or a mainstream school where the HI student is in class with his hearing peers but uses the assistance of interpreters, note-takers and/or hearing aids. The findings

indicated that 60% of the participants attended Deaf- only schools with 40% attending mainstream schools as summarized in figure 4.3.

**Table 4.3 Schools attended by respondents**

| School Attended | % of HI students |
|---|---|
| Mainstream School | 40% |
| Deaf- only school | 60% |

The findings indicated that the major challenge they experienced was the lecture mode of teaching where English was the language of communication. Social interaction also posed a challenge for this group; however, it was much easier for their peers who attended mainstream schools because they had prior experience interacting with the hearing as evidenced in the interviews below:

> *"My schooling experience since primary has been in Deaf- only schools. At home my parents and siblings know sign language, so my experience at the University was at first confusing because nobody used sign language. I kept failing my CATs because my English was not good. One lecturer asked me whether I ever went to nursery school" (SSI# 7 with a 22 year old HI student).*

These findings concur with a research study by Kluwin and Moores (1985) who studied adolescents in a mainstream school and deaf- only school and concluded that mainstream schooling (and other factors) was linked with higher achievement for deaf students.

**4.2.4 Course of study**

The course of study of the HI students sought to find out if the mode of instruction being used during lectures allowed them to interact with the course fully and whether the assigned sign language interpreter was conversant with the course content. The course of study in this case referred to the Science- based courses and the Arts – based courses and from the findings 30% of the students were taking science-based courses, that is Engineering and Chemistry with 70% taking arts- based courses as summarized in figure 4.4.

**Table 4.4 Course of study for the respondents**

| Course of study | % of HI students |
| --- | --- |
| Science – related courses | 30% |
| Art – related courses | 70% |

The science-based courses at the University level are highly technical with the jargon and formulae which become a challenge when working with interpreters. The art courses on the other hand are relatively manageable with interpreters as very few involve use of formulae but require the interpreter to be well versed with the content and language. During discussions one of the participants gave the following remarks:

*"I am taking BSc. Chemistry but anytime we go to the labs the technicians see me as a potential risk due to my hearing loss. The nature of my course also makes it difficult for me to work with interpreters; I therefore end up losing a lot in terms of content taught"(SSI #2 with a 21year old HI student).*

Based on the findings, Borgna et al. (2011) concurs that deaf college students learn significantly less science content taught under a variety of conditions relative to hearing peers. It also concurs with a study by Komesaroff (2005) that there is difficulty in obtaining qualified interpreters who are able to manage in technical classroom environments.

## 4.3 Institutional barriers faced by hearing impaired students

### 4.3.1 Mode of Instruction

Mode of instruction refers to the way the lecturer packages and delivers course content during a class lesson. Modes of instruction could be in different forms including lecturing, using classroom aids, computer instruction, web-enhanced learning or online instruction. At the University, the mode that is most frequently used is the lecturing method. Examinations are also within the mode of instruction as they are the determining factor as to whether the content delivered has been understood and can be applied.

### 4.3.1.1 Lecturing

Lecturing is the standard mode of instruction at the University of Nairobi and it involves the lecturer teaching through speech, for a HI student this mode is very limiting as explained in the semi-structured interviews below:

> *"It is different and more complex than how it was in high school. There all*
>
> *teachers were conversant with Kenya Sign Language being as it was an all deaf*
>
> *school. I am able to lip- read but the lecturer keeps moving in class it therefore*
>
> *becomes impossible, this forces me to use sign language interpreters. I use the*

*interpreter for classes and often miss out on group work because many group*

*discussions are in the evening or on weekends and they do not work at these*

*times" (SSI #1 with a 21year old HI student).*

*"It is sometimes difficult to follow, especially those lecturers who skim through*

*topics giving basics and overviews only or linking topics without informing the*

*class. Some do not give course outlines so most of the times I do not know when*

*one topic ends and another begins" (SSI #7 with a 22 year old HI student).*

In addition to lecture classes, students have assigned readings from text books and other

sources, and instructors assume their students can read and process these materials

independently. Many HI students however, enter the university without this assumed

level of reading proficiency. As a consequence, they may not be able to meet their

instructor's expectations in extracting information independently from their readings as

explained by a respondent.

*"A lot is left unsaid in class and I am expected to fill in the gaps through reading*

*which sometimes is difficult especially if I did not understand basic concepts. I*

*end up failing CATs" (SSI #1 with a 21year old HI student).*

Learning becomes even more challenging for HI students undertaking science- related

courses as they require both theory and practical learning as indicated in a discussion by a

key informant from the Engineering workshop.

*"Laboratory and workshop work is especially challenging for the HI students*

*because ideally the practical activity happens concurrently with the explanation,*

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*and because this cannot happen for the HI student, they are forced to focus on the practical and read later about what it was about"( KI#1 with a technologist).*

The voices indicated that the lecture method of teaching to a class that had HI students affected their learning outcomes albeit negatively, especially for the students who were in deaf- only schools. These findings concur with Fox and Ysseldyke (1997) that inclusion fails because lecturers are unable to meet the demands of modifying and delivering an appropriate mode of teaching students with Hi. In addition, issues such as rapid rate of instruction and discussion, rapid turn taking and rapid change of topics by lecturers were insensitive to the needs of the HI student trying to follow the lecture.

Dotter (2008) explains that having sign language as the first language for the hearing impaired any spoken or written language becomes their second, because there is very little instruction on structure and grammar for sign language. In that case for many hearing impaired people, it is difficult to grasp linguistic information on a second language.

The students pointed out that use of projectors and diagrams in class would assist with comprehension and this concurs with Iding (2000) who suggests that the use of dynamic visual displays to accompany instructors' verbal descriptions is especially helpful for learning about scientific principles or processes that must be visualized in order to be understood.

In conclusion an officer from Kenya Institute of Special Education agreed with the sentiments raised by the participants in a key informant interview below:

*"Hearing impaired students in an inclusive classroom are often left behind when it comes to learning. Not many teachers are aware of how to handle a class that has a hearing impaired student in terms of teaching, so most of the times teaching continues normally ignoring the challenges the student may be experiencing. Teachers who work in special needs schools are taught on strategies for teaching hearing impaired students but this is not the case with lecturers as majority have not specialized in special needs. It would therefore be an imperative action for the university to consider training lecturers as part of pedagogy on how to teach students with various disabilities" (KI#2 with a Special Needs Officer).*

### 4.3.1.2 Examinations

Hearing impairment can be a negative factor in hindering students' understanding of examination questions. English is used as the medium of instruction in examination papers and the findings have indicated that English is a second language for the HI student therefore answering examination questions becomes a challenge as illustrated in the quotes below.

*"I am not very good in English because I use sign language to communicate, therefore during CATs and examinations I have a challenge understanding the questions and putting down what is expected"( SSI #1with a 21year old HI student).*

*"You can find some examinations are in form of phrases and I am expected to know what it means then answer. Honestly, 100% of the time I have no idea!"(SSI #7 with a 22year old HI student).*

*"Final examinations go for 2 hours and most of the times I am never able to answer the required number of questions because a lot of time is taken as I try to decipher what the question requires. I wish lecturers could understand this and give a bit of extra time" (SSI #4 with a 22year old HI student).*

The HI students require special consideration especially during examinations and this is a requirement by the university disability policy as indicated by a key informant from the Dean of Students.

*"The University disability policy suggests that there should be modifications on examination papers for the hearing impaired so that it is done in simple, understandable English, this has not been done. If implemented, it would show improved performance academically" (KI#3 with the Dean of Students).*

It is evident from the study findings that majority of HI students found difficulties in answering examination questions because they failed to understand the instructions and tasks. Abdullah (2001) agrees with the informant that written English for the HI have problems which include wrong syntax structure, inaccurate use of words semantically, unnecessary use of affixes and unnecessary omission of words. These problems are caused by the interference from the sign language that is regarded as their first language.

A study by Powers (2003) has shown that HI students' academic achievement is still below average. This is caused by their poor language proficiency.

The findings also indicated that the participants would prefer if they were allocated extra time during examination period. Orkwis (1999) stated that inclusive education essentially means learning that creates an equal opportunity for everyone in any area, in this case, providing extra time during examinations. Phillips (1994) concurs with the suggestion that if extra time would be allocated it would allow a fair assessment for students with HI. In particular, it creates an opportunity for the students to perform without any disturbances from their impairment.

Apart from the language, the hearing impaired students also face other problems related to language. Among others are low motivation, lack of confidence in oneself and inferiority complex as a result of the impairment (Kluwin & Stinson, 1993), these weaknesses are identified as parts of the factors that lead to the low performances of the HI students in examinations.

### 4.3.2 Sign Language Interpreters

A sign language interpreter acts as a bridge between the lecturer and the HI student for purposes of delivering information. The findings show that sign language interpreters play a very important role when it comes to learning for the HI students; this is in terms of competence and professionalism.

**4.3.2.1 Competence and Level of education**

The findings indicated that most (60%) of the participants felt the competence of the interpreters was up to par although could be improved especially on assisting the HI learn vocabulary, while the 40% indicated the need for the interpreters to preferably have a bachelor's degree.

> *"I am an engineering student and it is extremely difficult for me to work with an interpreter as my course has a lot of terminology and mathematical formulae which do not have signs and explores concepts that may be difficult for the interpreter to communicate across. I solely depend on reading" (SSI #3with a 24year old HI student).*

> *"I find it difficult to work with interpreters due to their content knowledge which I feel is not appropriate enough for my course. I have a hearing aid and I try to maximize its use and also do a lot of reading" (SSI #2 with a 21year old HI student).*

> *"I would prefer if interpreters in the University have at least a bachelor's degree. This way they can relate to some terms, also the fact that they have been to the University means they can share expectations and general information on campus life" (SSI #8 with a 20 year old HI student).*

Similar expectations for the interpreters were voiced even by the older students as indicated in the semi- structured interview.

> *"I had a challenging time during my MA classes. My interpreter was a form four leaver and did not have enough exposure in interpreting in a university setting.*

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*He would miss out interpreting words that he did not understand thus having hanging sentences which did not make sense'' (SSI # 5 with a 34year old HI student).*

The study findings above indicated that participants who had interpreters in class found them competent enough but felt the interpreters needed to expose the students to vocabulary which ordinarily is not in sign language. It was also a general feeling that lectures would be richer if the interpreter had basic content knowledge because familiarity with the content may lead to more appropriate sign selection and few misinterpretations of a lecturer's emphasis. These findings are comparable with Locker (1990); Bremner and Housden (1996) who reported that deaf students felt that subject-specific knowledge would be an advantage to educational interpreters, and they should be encouraged to specialize in interpreting for subjects they have studied.

The type of course taken by the HI student was also an indicator on the type of training for the interpreter. As indicated in the findings, due to the nature of some courses (science- based) and what they entail, it becomes difficult for some students to be allocated for interpreters. This is supported in a study by Quinsland and Long (1989) which reported that Deaf college students learning science courses through a skilled interpreter scored approximately twice as high as those learning through an unskilled interpreter. This is also in concurrence with a study of HI University students by Graham, et al., (2012) which posited that students reported difficulty in following lectures when

interpreters did not have scientific training and struggled with the material being presented through interpreters.

Each HI student approaches their learning from an individualized way of language development, auditory abilities [the level of deafness] and educational experience, it is on this premise that understanding and comprehension of signed content differs from student to student. Furthermore, the lag time between the spoken and signed message often prevents the student from participating in class discussion.

### 4.3.2.2 Code of ethics and Professionalism

Educational interpretation like any other profession has a code of ethics and professionalism which must be adhered to. However, like in any other working relationship, the interpreter- student relationship experiences challenges as expressed in the interviews below:

> *"It is important for me that my interpreter keeps time, sometimes she would turn up an hour late or text me 30 minutes before start of class that they would not make it. It is annoying" (SSI #6 with a 33 year old HI student).*
>
> *"My interpreter would sometimes answer questions on my behalf, and I find that a breach of professionalism, it is not her place to answer but to relay the information I am giving or being asked" (SSI #7with a 22year old HI student).*

Working with an interpreter also affects the social life of the HI student as revealed in the interviews below.

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*"Sometimes we have social functions in campus and I'd like to attend, but am not sure whether that would be appropriate or not to have my interpreter come along"* (SSI #1with a 21year old HI student).

*"I do not like it when my interpreter avoids telling me things that have come up in a conversation that are shameful or abusive, I feel left out. You see others laughing and you do not know why"* (SSI #8 with a 20 year old HI student).

The participants revealed that challenges occur once a negative attitude or a breach of conduct is detected. It is evident that the interpreter is in control of the interpreted information and it gives them an advantage over the student. This is in agreement with (Ostrove and Olivia, 2010) who posit that in order for a working relationship to be successful between an interpreter and HI student, there has to be mutual respect and trust , and the interpreter must be aware of the advantage they hold by virtue of their hearing ability.

Hearing impaired students weigh interpreters by their attitude and they concluded that a negative attitude is exhibited once the interpreter never keeps time, when they do not communicate in case they will not attend class and  when the interpreter does not appreciate that the HI student can offer anything in the working relationship. Napier (2011) summarized the desired traits in an interpreter include professionalism, language skills, good attitude, knowledge and an ability to understand needs.

An interpreter treads a thin line on maintaining professionalism when it comes to engaging in the social life of the HI student. As indicated in the findings, they would like to be part of social forums in campus but this aspect would often pose a challenge, however, Humphrey and Alcorn, (2007) in their study reported that most Deaf persons felt that if interpreters do not socialize with the Deaf community they are considered "money hungry".

In addition to socializing with the Deaf community, the HI students indicated that they felt it was of paramount importance if the interpreters were conversant with the Deaf culture to enable the interpreters understand them [HI students] better thus improve their working relationship.

### 4.3.3 Resources and Infrastructure

Resources and infrastructure provision heavily rely on institutional disability policies. The study findings indicated that the available infrastructure was not accommodative of the HI students as evidenced in the discussions below:

> *"Due to the large number of students in some of my classes, sometimes my interpreter misses a seat and space to interpret from because we are so squeezed" (SSI #1 with a 21year old HI student).*
> *"Laboratory and workshop work pose a challenge for me because I only follow what the technician does without hearing out the instructions because I do not have an interpreter. On enough occasions I have grazed my hand". (SSI #4 with a 22year old HI student).*

> *"In one of my lecture rooms, I hardly see the interpreter clearly because the room is dimly lit, am forced to seat by the door and keep it open which distracts the whole class due to noise influence from outside." (SSI #10 with a 30 year old HI student).*

It is evident from the findings that lighting affected how a HI student interacted in class. Dim lighting was reported to cause difficulty when following an interpreter during a lecture. These findings are consistent with the views of Kaderavek and Pakulski (2002) that appropriate lighting is also necessary for those students who supplement audition with speech reading.

For users of hearing aids , it was important that the class environment had minimal noise to avoid interruptions with the transmitter , however from the findings, of the participants who use the haring device, 40 % had stopped using them due to  too much external noise influence which was equally amplified by the aid making the situation worse. The finding supported the views of Sundeen (2007) that noise interferes in the use of residual hearing, distorts the speech sounds and limits the understanding of deaf students in classrooms. Generally, a noisy learning environment affects a student's ability to focus; the same is true for a HI student, especially those using hearing aids, as evidenced from the findings. For students with hearing loss, the level of back-ground noise in a classroom, the signal-to-noise ratio, and reverberation time can be crucial factors in their ability to understand spoken language (Crandell & Smaldino, 2000)

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Seating position was also pointed out and they said that a front seating position allows them to easily lip-read, focus on the interpreter and reduced the amount of visual distractions of students walking in and out of class. (ADCET, 2015) concurs with this finding that students with a hearing loss should seat themselves toward the front of the lecture theatre where they will have an unobstructed line of vision. This is particularly important if the student is using an interpreter, lip-reading, relying on visual clues or using a hearing aid which has a limited range.

> *"The podium in some teaching halls is very high, and being hard-of- hearing, I sometimes depend on lip-reading, this becomes difficult because of the distance between the lecturer and me." (SSI # 2 with a 21 year old HI student).*

The findings show that HI students would have an easier time if the lecturer used instructional tools such as overhead projectors and diagrams. This would enable them follow the lecture slides and the interpreter simultaneously, it would also makes it easier for the students who were not accompanied to class by an interpreter. In instances of laboratory use, the findings indicated that HI students heavily relied on looking at what the technician was doing without having the procedure explained or signals to indicate a significant sound or on/off status of equipment.

In summary, understanding the importance of the environment can minimize the effects of a learning difficulty and enhance performance and self-esteem.

In response to the provision of resources and infrastructure, a key informant from the National Gender and Equality Commission explained that:

*"For hearing impaired students to be fully included in a mainstream classroom, the University should strive to apply recommendations from the Persons with Disabilities Bill 2015 as well as implement the recommendations in the University Disability Policy. This will require finances set aside to ensure good infrastructure like lighting in lecture rooms, provision of overhead projectors, and provision of hearing aids as well as increasing the human resource of sign language interpreters"* (KI #4 with a gender officer).

## 4.4 Social barriers

## 4.4.1 Social integration with peers

Social integration in this study referred to a student's ability to interact with, make friends and be accepted by peers. From the findings, HI students pointed out social interaction and peer acceptance, especially for those whose previous years have been in Deaf- only schools as evidenced in the interviews below:

*"It was a new world for me because my past interactions were with hearing impaired persons. Majority of my classmates would ask whether I now have to eat special meals and what caused it. It was very embarrassing"* (SSI # 8 with a 20 year old HI student).

*"I do not participate in any games. I had wanted to join football and volleyball but the captains said I couldn't. I shoot pool or go out clubbing with my Deaf friends. I am not comfortable with the others"* (SSI # 1 with a 21 year old HI student).

These findings speak to a study by Stintson and Walter (1997) which indicated that Deaf teenagers in mainstream settings prefer to relate to other Deaf students. At the University HI students must deal with expectations, standards and ways of functioning that are different from their previous schooling experience, and this sets off loneliness and isolation. Deaf students do not have as many close friendships with hearing peers, and if there are, these relationships are more sporadic (Wauters and Knoors, 2007).

The findings indicated that for 75% of the HI students, their participation in social functions was low for both the number of friends in class and the contact they had with other students outside class. A study by Reich et al (1977) in comparing a variety of mainstream settings found that being educated with normal hearing classmates exaggerated the student's differences instead of diminishing them.

Hearing students learn a lot more from their environment through listening to the T.V or radio, having discussions with other students and by listening in on passers-by or conversations in a restaurant etc, these help form opinions and necessary life skills; this is not the same for a HI student. This is in agreement with a study on social isolation experienced by Deaf College students by Foster (1988) which concluded that social mainstreaming may be more difficult to achieve than academic mainstreaming, because a student with a hearing loss is frequently on his/ her own when attempting to initiate or sustain relationships with hearing peers.

Lack of an understanding of Deaf culture was also pointed out where the HI students felt that their hearing peers did not understand it. Most HI persons are very straight forward in a conversation which to the hearing person is often misunderstood for rudeness as expressed by a participant in a semi-structured interview.

> *"I once told a classmate that her handwriting is horrible and I wondered how lecturers are able to read it, since then they haven't spoken to me. Everyone in class says am arrogant and insensitive. I was simply pointing out an obvious thing that her writing is bad" (SSI # 7 with a 22 year old HI student).*

Goss (2003) agrees with this finding on Deaf culture that indeed straight-forward talk is a habitual communication style reserved for interacting with other deaf communicators. It is not used with hearing people, because it might be misunderstood and seen as impolite. Directness in communication, then, is a marker of the Deaf culture.

However, the findings have also indicated that for those who have previously been in a mainstream school, their level of social integration is better as indicated in the interviews below:

> *"I enjoy swimming, playing basketball and skating. My roommates are really nice and they always have me whenever they are going for social events, but I suspect it is because I can lip-read very well and I can voice a little but not too clearly". (SSI # 2 with a 21 year old HI student).*

*"I lost my hearing when I had full grasp of language, I can therefore talk. I enjoy*

*a very healthy social life, even my girlfriend is hearing." (SSI # 6 with a 33 year*

*old HI student).*

It is evident that the lack of social integration does not cut across to all the HI students, and some have a very good relationship with their hearing peers, but these are dependent upon a student's previous interactions with the hearing as well as level of hearing loss. Holt (1994) concurs with this finding that students with mild to moderate hearing losses tend to use speech and lip- reading as the primary communication mode. Due to communication ease, they are more capable of participating in academic activities and interacting with hearing classmates directly than those with profound hearing loss.

**4.4.2 Social integration with faculty and administration staff**

The findings indicated mixed reactions when it came to the relationship between faculty and the HI students. Several participants reported difficulties building positive and effective relationships with the staff. There were a variety of reasons for this including the perceived attitudes, lack of knowledge about deafness by some staff, and difficulties with communication as indicated in the interviews below.

*" I would prefer to be in a room where we are only 2 because there will be*

*reduced distractions and I will be able to concentrate when reading but whenever*

*I make this request the halls officer would place me in a room of 4 and in the*

*rowdiest halls. One time one of my roommates stole my phone and laptop, on*

*reporting, I was told to be more careful with my belongings" (SSI # 1 with a 21*

*year old HI student).*

*"My course entails going for industry trips and workshop visits, whenever I tell*

*the technician that I must have an interpreter for such, he often says he has*

*arranged for one but there has not been one in any of these trips. It is frustrating*

*that he does not understand the importance of me having an interpreter for these*

*industry visits". (SSI # 3 with a 24 year old HI student).*

*"I once went to the faculty office to pick courses for that semester, rather than*

*the administrator showing me what options were there for me, he went along and*

*selected the courses for me citing that they would be the best for me. I was angry*

*because for me it felt that he thought I was incapable of doing course selection."*

*(SSI # 9 with a 40 year old HI student).*

*"English is not my first language, sign language is and therefore when I write*

*assignments, my English is not very clear. My lecturers would write very*

*demeaning statements on my paper, without seeking to understand why that is the*

*case" (SSI # 8 with a 20 year old HI student).*

These findings were indicative of the fact that some members of staff lacked the

knowledge and understanding about deafness. It showed that some staffs were too quick

to offer solutions even on instances where the student needed options for them to make a

decision that suited them or too quick to dismiss. These findings concur with results from

a study by Marks (1997) which indicated that attitudinal barriers and discriminatory

practices in inclusive settings can prevent the full participation of HI students as

effectively as separate facilities and programs. Similarly, many persons with disabilities believe that negative attitudes and stereotyped images held by nondisabled persons are the greatest barriers to their full participation in society (Gerdes and Mallinckrodt, 1994). Without appropriate knowledge, faculty staffs are ill-prepared to make decisions about how to effectively provide accommodations in their classrooms. These findings therefore suggest that faculty attitudes toward HI students can be improved through awareness trainings, potentially lessening the barriers encountered by these students at the University. English (1993) concludes that among deaf college students in mainstream settings it is found that students who reported more interaction with faculty did better academically.

# CHAPTER FIVE:CONCLUSION AND RECOMMENDATIONS

## 5.1 Summary

This study assessed barriers faced students with hearing impairment in inclusive learning environment at the University of Nairobi. It sought to look at the implication of inclusive learning and specifically establishing the various institutional barriers and social barriers they face while studying at the University.

### 5.1.1 Institutional based barriers

Hearing impaired students experience a myriad of barriers in their journey to obtaining higher education. The study established various barriers the HI students face especially in inclusive education settings. There have been barriers related to the lecturing method of teaching and examinations where speech, the expression of ideas and thought and time allocated during examinations for the students have been a challenge. Sign language interpreters seemed to have played a big role in the learning outcomes of the HI students at the university.

The hearing impaired students felt that the institution had not provided the adequate resources and infrastructure outlined in the institution's disability policy to wholesomely cater for accommodations which would ease their learning experience.

### 5.1.3 Social based barriers

The findings indicated that social integration was a crucial aspect in a HI student's life while at the university. Integration with peers, faculty and administration staff seemed to be strained due to factors such as communication barrier, perceived attitudes, and lack of information on deafness. The study also indicated that the level of deafness and nature of acquisition affected the way interactions with the hearing occurred.

### 5.2 Conclusion

Inclusive education is an avenue that has paved way for the hearing impaired to obtain higher education. However, barriers have made it significantly difficult for inclusive learning to take place seamlessly. Lack of lack of knowledge on deafness, negative attitudes and perceptions have perpetuated the barriers experienced by the hearing impaired students. The study has confirmed that factors such the lecturing mode of instruction, incompetent interpreters, inadequate infrastructure and social isolation and loneliness have prevented the hearing impaired students from attaining positive learning outcomes.

### 5.3 Recommendations

Based on the findings and in order to make the university more accessible and accommodative of students with hearing impairments, certain steps need to be taken. Some of the recommendations include:

- The University needs to allocate funds to provide basic sign language training for the teaching and non- teaching staff.  This will ease communication as well as

encourage lecturers to become more sensitive to the HI students and modify teaching methods and examination setting so as to accommodate them.

- There is need to increase human resource particularly sign language interpreters who have appropriate educational skills; at least a minimum of a bachelors degree as well as provide compensation commensurate to work done.

- Extra-curricular activities are a key part of the overall University experience and should be accessible. Making the University accessible will include ensuring interpreters are available at events and activities, thus, enabling meaningful interactions between HI and hearing students, outside formal lecture situations.

- There is need for further research on hearing impaired students and their academic experiences in institutions of higher learning. This will help in bringing out the gaps that are there and enable the education sector provide the required interventions.

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# APPENDICES

## Appendix 1: Written Consent Form

Good morning/afternoon, my name is Lynette Kigotho, an MA student in Gender and Development Studies at the University of Nairobi. I am carrying out a study on barriers faced by students with hearing impairment in inclusive learning environment at the University of Nairobi.

You have been purposively selected as an informant in this study by virtue of being a hearing impaired student at the University of Nairobi. The information obtained will purely be for the purpose of this research and will be treated with confidentiality and will be used for academic purposes only in fulfillment of my research project. Your participation is completely voluntary and your input will assist me to know the barriers that students with hearing impairment face in the University of Nairobi. There is no right or wrong answer in this study.

Do you have any concerns or questions about your participation in this exercise?

If yes, please tick the box

If no, kindly sign below as evidence of your informed consent.

Sign_____ Date _____

*Thank you for your cooperation.*

**Appendix 2: Semi-Structured Interview Guide**

**The following section asks you about the barriers you experience in your learning at the University of Nairobi.**

1. Mode of instruction

   - What has been your experience in how teaching is done at University in comparison to high school?

   - Are you able to take part in class discussions? How has it been for you?

   - How do you relate with your lecturers?

2. Sign Language Interpreters

   - What has been your experience with your sign language interpreter? Do you feel they relay the content being taught as it should be?

   - Other than interpreters, what other assistance would you require to enhance your learning experience?

3. Social – based barriers

   - What has been your experience been like interacting with other students within campus?

   - Which social activities do you take part in within campus?

   - How do administration staff and faculty treat/relate with you when you go seeking services within campus?

4. What would you recommend that the university do in order to reduce and/or eliminate the barriers experienced by hearing impaired students?

**Appendix 3: Key Informant Interview Guide**

1. **Dean of Students**

   - How are the learning needs for students with hearing impairment for catered by the university of Nairobi disability policy?

   - In which ways is the university integrating/upgrading its infrastructure to cater for the needs of students with hearing impairment?

   - In your opinion, which are some of the challenges experienced by staff in working with hearing impaired students?

   - Which recommendations would you give to reduce and/ or eliminate the barriers experienced by hearing impaired students?

2. **A lecturer / technologist with experience of teaching a HI student**

   - Are there any challenges that you face as lecturer in dealing with this group of students? How do you go about it?

   - Which resources and infrastructure would you think is required to enhance the learning experience of the hearing impaired students?

   - How does the presence of or lack of a sign language interpreter affect the learning outcomes for a hearing impaired student?

   - Which recommendations would you give to reduce and/ or eliminate the barriers experienced by hearing impaired students?

3. **National Gender and Equality Commission (NGEC) Official**

- What are some of the challenges experienced by hearing impaired students in institutions of higher learning?

- Which resources and infrastructure are required to enhance the learning experience of the hearing impaired students?

- Which recommendations would you give to reduce and/ or eliminate the barriers experienced by hearing impaired students?

4. **Kenya Institute of Special Education (KISE) Official**

- Which government policies are there concerning disability and specifically hearing impairment?

- What has been your experience in following up ministerial implementation of these policies in inclusive education settings?

- What are some of the challenges do this group of students face in inclusive learning settings?

- Which recommendations would you give to reduce and/ or eliminate the barriers experienced by hearing impaired students?

# Appendix 4: Research Permit

**NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION**

Telephone:+254-20-2213471,
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9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No.

Date:

**NACOSTI/P/16/74053/13302**

**31st August, 2016**

Lynette Wambui Kigotho
University of Nairobi
P.O. Box 30197-00100
**NAIROBI.**

## RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *"Barriers faced by students with hearing impairment in inclusive learning environment, a case of the University of Nairobi,"* I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **30th August, 2017.**

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

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

**BONIFACE WANYAMA**
**FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The Vice Chancellor
University of Nairobi.

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

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