EFFECTS OF TEACHER CHARACTERISTICS ON ACADEMIC PERFORMANCE OF STUDENTS WITH HEARING IMPAIREMENT AT KAREN TECHNICAL TRAINING INSTITUTE FOR THE DEAF, NAIROBI COUNTY, KENYA

BY

IMBWAGA NIXON

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DECLARATION

I declare that this thesis is my original work and has not been presented for a degree in any other University.

Signed.......................................…………… Date …………................................

Nixon Imbwaga

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

Signed …………….............................. Date …………...............................

Dr. Lilian Milimu,

School of Education,

Maasai Mara University.

Signed …………….............................. Date …………...............................

Prof. Paul Maithya,

School of Education,

Maasai Mara University.

DEDICATION

This research proposal is dedicated to lovely wife Maureen Nthenya, children Prudence Makokha, Israel Shivayanga and Ariella Lung'azo who are the driving force behind my hard work.

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ABSTRACT

Professional training greatly influences the development of human resource capacities that in turn boost sustainable economic growth and development. Provision of quality education has been given emphasis in legislations and acts of parliaments. The purpose of this study was to establish effects of teacher characteristics on academic performance of hearing-impaired students at Karen Technical Training Institute for the Deaf with an aim of finding ways of improving the academic performance of the institution. It aimed to determine the effect of trained teachers in special needs education and instructional strategies used on academic performance of hearing impaired students at Karen Technical Training Institute for the Deaf. The study also correlated teachers' perceptions on hearing impaired learners and their academic performance at the same institution at the time determining the effect of using Kenyan Sign Language for academic instructions on academic performance of hearing impaired students at this institute for the Deaf. The study was supported by the social learning theory by Albert Bandura. Descriptive research design was used to sample 30% of the targeted population thus 15 teachers and 113 students from a population size of 61 teachers and 450 students. Stratified and random sampling was used to get the number of respondents for the teachers as one stratum and for the students as the other. Simple random sampling was used to get the individual respondents from the two strata. Two sets of questionnaires were used for collecting data; one for the teachers while the other for the students. The questionnaires were validated and their reliability tested after pilot testing. Validity was achieved by discussing the items in the tools with the supervisors. Reliability, on the other hand, was achieved by checking internal consistence using Spearman-Brown prophecy formula. Raw data that was systematically organized, coded and analyzed through descriptive as well as inferential statistics. The results were thereafter presented through frequency tables. The study investigated the effect of independent variable on dependent variable using Multinomial Logistic Regression. It used the KNEC system to categorization put students into three levels namely Good, Fair and Fail. The results showed that an increase in teacher training in SNE increases the odds of students getting categorized as Good by 2.49. This implied that an increase in teachers training in SNE is associated with a positive increase in learners academic performance. An increase in instructional strategies increases the odds of students getting categorized as Good by 1.519. This implied that an increase in instructional strategies is associated with a positive increase in learners academic performance. An improvement on teacher perceptions increases the odds of students getting categorized as Good by 1.519. Additionally, the results indicated that using KSL increases the odds of students getting categorized as Good by 3.049. The results implied that the use of KSL was also positively associated with increase in academic performance. From this analysis, the researcher thus failed to accept the null hypothesis. The study recommended that teachers should be trained to have more confidence when it comes to the use of KSL so as to make them effective in their teaching, there is the need for improvement of sitting arrangement in classes by ensuring that they adopt horse-shoe shaped arrangement. In terms of perceptions of the teachers, teachers need to have higher academic and positive behavioral expectations of students with HI than of their hearing peers. This creates a learning environment that is positive to the learners. Teachers should embrace the use of KSL for academic instructions as it makes it easy for students with HI to understand academic content.

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ABBREVIATIONS AND ACRONYMS

CRNM	Course Requirements Not Met
HI	Hearing Impaired
IEP	Individual Education Plan
KNEC	Kenya National Examination Council
KSDC	Kenya Society for the Deaf Children
KSL	Kenya Sign Language
KTTID	Karen Technical Training Institute for the Deaf
SNE	Special Needs Education
TVET	Technical Vocational and Entrepreneur Training
UNESCO	United Nations Education, Scientific and Cultural Organization

CHAPTER ONE

INTRODUCTION

1.0 Introduction

The chapter provides sufficient contextual information of the research and the effects of teacher characteristics on academic performance of students with HI at KTTID. The essence of this chapter is to provide the statement of the problem, the purpose of the study and objectives, research questions, its hypotheses and significance and the scope. It also provides and the limitations of the study and lastly the assumptions to the study and finally operational definition of terms.

1.1 Background of the Study

Education greatly influences the development of human resource capacities which in turn influences sustainable economic growth and development. Education also positively influences human capabilities and improves productivity in labour and national growth through the imparted knowledge and skills. As an effect of education people can contribute to the society and carry out their roles better in various facets of life. Furthermore, education is a significant tool in achieving independence in equitable sharing of opportunities (Muganda & Mwangi, 2002).

Malawi has one hundred and forty-eight trained teachers who serve the deaf at both primary and secondary schools serving many deaf children in these schools (Ministry of Education, 2013). However, it is hard to capture the actual number of deaf children in these schools because a majority of them are not always in school. Special Education Directorate states that to reduce the ratio of teacher to deaf pupil a massive effort must be

input. It suggests that Malawi needs to produce over five hundred trained teachers in special education per year. As the country moves towards inclusion of more deaf students in the general education setup there is need for alterations in teacher training for both general and special teachers (Spencer & Marschark, 2010) Teachers have been noted to struggle in constructing an inclusive lesson plan that suits the needs of all students including those with disabilities. Whereas most teachers have been trained in teaching regular learners in schools, most of them have inadequate knowledge and skills in SNE curriculum adaptation (Powers, 2011). Learners with different abilities require specialized programmes and unique time frame for learning. These are kind of learners who need more time to grasp concepts as compared to regular learners in the same schools. It has therefore posed a challenge to regular trained teachers to effectively manage these learners in the same class as the policy of inclusivity is implemented.

The delivery of education, in Kenya, especially for children has been given much emphasis. Considering the child of primary school age, the right to education is provided for expressively in the Kenyan Children Act (2001). The act states that suitable educational services should be provided to all children. The right of every learner to quality and relevant education is a commitment that the Kenyan government is fully undertaking. The education system that is being implemented is aimed at contributing and enhancing equity, economic growth and expansion of employment opportunities. This is clearly specified in Sessional Paper No.1 of 2005 which is a policy Framework for Education, Training and Research. The sessional paper contains much to do with reaching out to children with special needs. These children with special needs must

access suitable educational interventions. The sessional paper puts emphasis on education that is aimed at meeting the challenges of Kenyan children, while taking cognizant of the fact that there are diverse cultural and linguistic needs for the various Kenyan communities. (Republic of Kenya, 2005).

To ensure that the objectives of this research are achieved, there is need for technical training institutes to be given the obligatory consideration. This will consequently stir industrial transformation; which is to be realized by the year 2030. According to the 2003/2005 national development plan there is imbalance in the labour force. It states that the current ratio of technologists to craftsmen to artisan is 1: 3: 12. In contrast the optimal ratio of the same should be 1: 5: 30. This disturbing imbalance in labour force has undesirable bearing on development_ which is fundamental in industrialization (G.O.K, 2002).

Since the changes in technology are here with us, there is need for teaching institutions to change their ways of teaching (Virgona, Waterhouse, Sefton & Sanguinetti, 2003). Technical Vocational and Entrepreneur Training (TVET) has a big role of delivering skills necessary to improve levels and improve productivity, raise income levels and boost access to employment chances which has been widely recognized (Bennell, 2001). It was noted from the Bonn resolution of October 2004 that TVET is the "master key" for mitigation of poverty, promotion of peace and preservation of the environment. All these are geared to improving the value of human life and stimulate viable development.

Considering that the TVET sub-sector is crucial for the growth of industry required for human capacities and Kenya attainment of the vision 2030, high quality training services must be provided by the sector to improve productivity and competitiveness hence the need to enhance skills of graduates of the TVET systems through provision of quality training services. In this respect the Government of Kenya has launched several policy documents that feature education prominently. Education is essential in realizing national development. The accomplishment of education can be assured for students through access to relevant, quality education and training chances to all Kenyan children (Republic of Kenya, 2005).

In Kenya, Kenya Sign Language (KSL) is encouraged for as a national language of teaching hand in hand with English language to enable educational activities of students with hearing impairments (Ndurumo, 2009). Notwithstanding the energies applied to uplift the academic standards of students with hearing impairments, academic performance is still miserable (Bunyasi, 2010). Findings over the years have pointed to the fact that Kenyan deaf students have reliably lagged behind their hearing colleagues in their academic performance (Ndurumo, 1993; Okombo, 1994 and Adoyo, 1995).

Adoyo (2004) says that there is aggregate discontent with poor academic performance in Kenyan schools for the deaf. This poor performance arises from the application of unsuitable teaching methods, lack of obligation by teachers and communication challenges. These problems run across the curriculum (Ogutu, 1996). Adoyo (2004) adds that the reason for this is that teachers are failing to deliver the curriculum material in an

appropriate language to deaf students. Kenya Sign Language is the language that a majority of deaf students in Kenya prefer for communication.

When students are admitted in institutions, they are expected to go through the education system and acquire knowledge, skills and perceptions . Proof of the success of the system can be seen in posting of good grades by the students in their academic performance. It has been the concern of the researcher that the academic performance of students at KTTID is not good enough in consideration of KNEC examinations. The Performance Indexes for the institute for the past few years point to the fact that academic performance has been poor. The Performance Index July 2017 KNEC Examination was 32.95%. (Kenya National Examination Council, 2017). That for November 2017 KNEC Examination was 65.59%. In the year 2018 the Performance Indexes were 53.17% for the July Examination and 65% for the November Examination. (Kenya National Examination Council, 2018). This information from the Registrar's Office at the institute is detailed as in the Appendix vii.

KTTID is located in Karen Estate, along Karen Road, near Karen Blixen Museum. It is a public institution which opened its doors to students in 1990. This was an initiative of The Kenya Society for the Deaf Children (KSDC). It was later handed over to the Ministry of Education, Science and Technology. The Ministry designated it as a National Technical Training Institute for the hearing impaired (HI) Youths. It started with twenty-four students and six teachers. It was the first (pioneer) institute for the HI and still is the only one in Kenya. It serves the whole of East Africa region. It admits students from

many countries including Uganda, Ethiopia, Tanzania, Rwanda, Somalia and Mozambique. It is the Highest Vocational Institution for Deaf Youth to train in Technical Courses. KSDC did not have much money and relied mostly on well-wishers. This led to the infrastructure put up being small.

The institute operates under the Ministry of Education, Science and Technology and is run by a Board of Governors appointed by the Government. It is however a Semi-Autonomous institution. Enrolment of the students has moved from 24 in 1990 to 450 in 2018.To date over three thousand youths have gone through the institute. The teaching staff are fronted to the institute by is done by the Public Service Commission which has posted sixty-one (61) qualified trainers from Local Universities, Kenya School of Technical Vocational and Educational Training (KSTVET) and some from Kenya Institute of Special Education (KISE). The medium of instruction is sign language and most teachers learn the language on arrival at the institute. There are no teacher training colleges that offer TVET courses in Kenya Sign Language. Currently the institute is practicing inclusive education whereby regular students are admitted in the institute in addition to those who have hearing impairments.

1.2 Statement of the Problem

It can be stated clearly that technical skills are a prerequisite for Kenya's industrialization and thus achievement of vision 2030. The technical skills are accessible in technical training institutes. Aspects of teacher training, that is, preparedness, acquired skill and perceptions seem to be a challenge. It is hypothesized that teachers of technology may

not be providing adequate and quality services to students in special needs education set ups. Quite a number of regular education teachers feel less prepared and afraid to work with students with disabilities in regular classes. They display frustrations, anger and display negative perceptions towards special needs learners because they believe these learners lower academic standards. Perhaps this can be blamed on their inadequacy in SNE training. The use of sign language as a specialization skill seems to be a challenge too. Both teachers and students seem not to have command of the language and lack motivation to use it in and outside class setting.

KTTID is an institution that carters for mainly students with HI. In handling students with special needs is it required that special needs education practices be applied so that the students can benefit from the education system. The teaching by use of special needs education (SNE) techniques is also proving to be a challenge simply because little expertise knowledge has been invested in this field. It is also the concern of the researcher that students who fall under the categories of severe to profound hearing loss seem to perform poorly in academics as compared to those with mild hearing loss or those with no hearing loss.

The academic performance of students with hearing impairments enrolled in special education programs is low and has not improved significantly over time. Many people in Kenya, including the government, are worried about the future of the country's educational system because of this worrying pattern. Academically, most of the special schools for students with LWHI lag behind the national average standards. Academic

failure prevents many students from graduating and it compromises their ability to find gainful employment, making it more challenging for them to become financially self-sufficient.

Because of teachers' central role in education, understanding how individual teacher characteristics affect students' progress is essential. Some of these factors are teachers' absences, levels of education, years of experience, and the knowledge and skill with which they teach.

The goal of this research was to identify which instructor characteristics most positively impacted on the academic performance of students with hearing impairments at the Karen Technical Training Institute for the Deaf.

1.3 Purpose of the Study

The purpose of the study was to establish the effects of teacher characteristics on academic performance of students with HI at KTTID with an aim of finding ways to improving the academic performance of the institution.

1.4 Objectives of the Study

The following research objectives guided the study;

i. To establish the effect of trained teachers in special needs education on academic performance of their students with hearing impairments at Karen Technical Training Institute for the Deaf.

ii. To establish the effect of instructional strategies on academic performance of students with hearing impairments at Karen Technical Training Institute for the Deaf.

iii.   To correlate the teachers' perceptions on hearing impaired learners and their academic performance at Karen Technical Training Institute for the Deaf.

iv.   To determine the effect of using Kenyan Sign Language for academic instructions on academic performance of students with hearing impairments at Karen Technical Training Institute for the Deaf.

1.5 Research Questions

The following research questions guided the study;

i.   What is the effect of trained teachers in special needs education on academic performance of students with hearing impairments at Karen Technical Training Institute for the Deaf?

ii.   What is the effect of instructional strategies on academic performance of students with hearing impairments at Karen Technical Training Institute for the Deaf?

iii.   To what extent do the teachers' perceptions affect the academic performance of learners' with hearing impairment at Karen Technical Training Institute for the Deaf?

iv.   What is the effect of using Kenyan Sign Language for academic instructions on academic performance of students with hearing impairments at Karen Technical Training Institute for the Deaf?

1.6 Hypothesis of the Study

Ho_1: Teacher characteristics have no statistical significant effect on the academic performance of students with hearing impairment at KTTID. The study conceptualize teacher training as gains from knowledge, skills and attitudes for instructional strategies and use of KSL.

1.7 Significance of the Study

The findings of the study may have both theoretical and practical implications for the future of the education of the students with hearing impairments in the county and country at large. The study is expected to contribute to the creation of knowledge about the effects of teacher characteristics on academic performance of students in technical training institutions. The completed study may be very useful to the management of technical institutions in Kenya. Information may be collected from different respondents, where all the categories may be represented, and the respondents may be able to give suggestions and applicable modalities that can enhance ideas concerning improvement of academic performance in technical institutions. The findings may be very helpful in highlighting the best approaches that can be adopted on matters related to improving SNE education. Therefore the management may lay strategies geared towards the recommendations. This study is also important to the government in that it may enable it to come up with policies that could improve technical education as a whole. This may also enable the government establish whether it is getting value for its money in funding technical institutions.

1.8 Scope of the Study

This study was carried out to establish effects of teacher characteristics on academic performance of students with hearing impairments at Karen Technical Training Institute for the Deaf. This was with reference to academic performance at KTTID. The study focused on the main four teacher characteristics and academic performance of students

with hearing impairments at KTTID. They were; teacher education in special needs education, instructional strategies, teacher perceptions towards students with hearing impairments and use of Kenya Sign Language for academic instructions at KTTID. The study was conducted at KTTID which is a public educational institution located in the suburbs of Karen within Nairobi County, Kenya.

1.9 Limitations and Delimitations of the Study

One of the limiting factors of the study is on the language barrier. On this we found out that some of the students, who were part of the respondents, had challenges comprehending questions because their major language of communication is Sign Language. Sign Language has a different syntax to that of English and this may give rise to misunderstanding of the tools which are written in English. The researcher elicited the services of trained research assistants who have a good understanding of Kenyan Sign Language and English. This was for the sole purpose of the assistants helping to interpret for the students who experienced difficulties in understanding the items in the questionnaires.

1.10 Assumptions of the Study

According to Maithya, Ogola, Khamadi and Kadenyi (2013) assumptions are circumstances outside the research that may affect success of the research and to which the researcher has little or no control. Assumptions are things that are out of the research may not have control over. However, if these assumptions disappear the study would become irrelevant. As the research went on a number of assumptions were made. One of

the assumptions was that most of the respondents were willing to participate in the research and that they provided reliable information. It was also assumed that there were teacher training colleges and that teachers attended these colleges to get skills; including skills in special needs education. It was also assumed that special needs education practices are being practically implemented at KTTID. It was also assumed that teachers show or express their perceptions towards students with hearing impairments. It was also assumed that Sign Language is taught to teachers in colleges and is relevant in handling students with hearing impairments. In addition it is used on a daily basis as the official mode of communication at KTTID.

1.11 Operation Definitions of Central Terms

Academic Performance   This is the achievement in the subjects examined by KNEC. This is shown through the grading system by KNEC.

Perceptions   This denotes the thoughts or feelings that one has towards someone or something. It is expressed by one evaluating something with some amount of favour or disfavour. It is reflected in a person's behaviour.

Good Grades   These are the grades of 1, 2 and 3 as per the KNEC grading system

Fair Grades   These are the grades of 4, 5 and 6 as per the KNEC grading system

Fail Grades   These are the grades of 7, 8 and 9 as per the KNEC grading system

Hearing Impairments   Refers to a partial or total inability to hear sound arising from damage to one or more parts of the ear.

Individual Education Plan   Refers to a strategy established to carter for the personal needs of a learner.

Kenya Sign Language   Refers to a Sign Language used for communication by the deaf community within Kenya. It is used as a language of instructions at KTTID.

Modification   Refers to an alteration in the academic content. It also involves the alteration of the expected outcome from the

student. For instance, by making an assignment less difficult such that the student is doing work s that is a bit different from the rest of the students.

Performance Index	The ratio of candidates who passed an examination (who got grades 1, 2, 3, 4, 5 or 6) to the total number of candidates who sat the examination; expressed as a percentage.
Regular Students	Refers to students other than those with hearing impairments.
Regular students	Refers to students who do not have impairments.
Special Needs Education	Refers to the application of specialized or altered curriculum, intervention measures, teaching approaches, and provision of special services to assist students with HI to achieve at a level comparable to that of other students without HI.
Teacher Characteristics	Refers to teacher education in special needs education, instructional strategies, teachers' perceptions towards students with HI and use of Kenya Sign Language by teachers for academic instructions.
Teacher Training	Denotes the acquisition of specialized skills by teachers to allow them teach effectively.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Literature review is the procedure of identifying, evaluating, synthesizing and presenting relevant information from other sources like publications, journals and magazines. This chapter comprises the review of previous related studies: teacher training in special needs education, instructional strategies for the hearing impaired, perceptions of teachers towards students with hearing impairments and use of Kenya Sign Language for academic instructions. The chapter also includes theoretical framework, conceptual framework and the summary. There is a lot of related and relevant information already documented in a lot of these secondary sources.

2.1 Teacher Training in Special Needs Education

In order to establish the effect of instructional strategies on academic performance of students with hearing impairments at Karen Technical Training Institute for the Deaf, the research evaluates the correlation between the level of education of a teacher and the success of the students they teach. There is a correlation between the amount of education that teachers have and the academic success of their students. According to the findings of research conducted by Rishaelly, (2019), teachers who have previous expertise in the industry tend to be more successful in the classroom (Rishaelly, 2017).

The same effect was discovered by Sambu (2018), who discovered that students who had their arithmetic and Chinese classes taught by interns did much lower than those students

whose classes were taught by graduate students. Nonetheless, Ngobeni et al., (2020) found that the educational background of a teacher accounted for anywhere from forty percent to sixty percent of the variance in student performance. They stumbled across this finding while conducting research into the relationship between the credentials of teachers and the levels of student accomplishment. According to the findings of Mumbu, (2020) research, the academic performance of students was most significantly impacted by the availability of trained instructors. According to Gabriel Lengoiboni, who worked at the Teachers Service Commission (TSC) at the time and was its secretary, some teachers had become semi-illiterate as a result of the constitutional mandate that they take competency lessons but had not done so (Mumbu, 2020).

In addition, Munyao,(2019) discovered that in-service training considerably enhanced the teaching effectiveness of instructors when compared to teachers who had not engaged in training. This was the case for teachers who had never participated in training. It should come as no surprise that educational institutions cannot hope to be successful if they do not take into account the credentials of their teaching staff. A qualified teacher is one who is well-versed in the subject matter that is being taught, possesses the mental and emotional adaptability to accommodate the needs of their students, and possesses the skills and expertise necessary to modify teaching methods to accommodate students with sensory impairments, such as hearing loss.

A necessary requirement for the provision of quality educational services for students with HI is to have a suitable number of competent teachers to provide services. Teachers'

abilities and perceptions, which are shaped by training in college, can be of major influence to education. The training of teachers at all levels is often not adequate. Where there is training it often tends to be fragmented, uncoordinated and inadequate. If teachers do not have positive perceptions towards students with special needs, it is unlikely that these children will receive satisfactory education. The number of successful students with special needs can be attributed to teachers' perceptions towards the students (Weisel and Tu-Kaspa, 2002). Not only do general education teachers' perceptions influence the success of students with special needs, but "research is available which implies that teachers' perceptions can have a detrimental effect on handicap students' psychological and educational adjustment to the regular classroom" (Johnson, 2001).

Teachers' perceptions can be made obvious to all students by way of their actions and interactions with students in the classroom. Classically, teachers seem to give more positive feedback to bright students and also seem to have higher expectations for these students as well. On the flip side students who are considered poor tend to have less contact with the general education teacher altogether. The little contact they may have is usually not positive (Johnson, 2001). A few of studies have scrutinized the impact of special education programs on the achievement of students with disabilities. Hanushek, Kain, O'Brien and Rivkin (2005) investigated the effects of participation in special education programs using state-wide individual-level data from Texas. The studies find that special education has a positive impact on the achievement of students with disabilities.

2.2 Instructional Strategies for Students with HI

In order to establish the effect of instructional strategies on academic performance of students with hearing impairments at Karen Technical Training Institute for the Deaf, the research evaluates the teachers' pedagogical knowledge. In order to enable an educational process that is centered on delivering the outcomes that are intended, educators need to be well-versed in a wide variety of pedagogical methods, pedagogical practices, and pedagogical mindsets. According to Birabil, (2020), pedagogy includes not only the principles and goals of education in general but also the management of the classroom, the progress of lessons, and the assessment of students as they progress through their coursework. In other words, pedagogy is more than just the principles and goals of education.

According to Kituyi (2020), educators receive training that enables them to capitalize on their topic expertise while generating relevant lesson plans and conducting fair evaluations of the progress of their students. Students who have hearing loss need to have faith in their own capabilities and know that they are able to complete the assignments that have been set to them in order for their academic performance to improve. This is something that can only be accomplished via the application of adequate preparation, supervision, and assistance throughout the entirety of the process of learning. According to Allexander (2019), the objective of education is to assist students in becoming literate as well as in acquiring the information, perceptions, and behaviors that will be necessary for them to become contributing members of society.

Despite initial difficulties with acceptance and integration, a student who has a hearing impairment may have the opportunity to participate socially and economically as an important member of society if the teacher has the pedagogical expertise and the ability to effectively apply that expertise to achieve the goal that was set for the student. According to Fallon, Zhang, and Kim (2021), teachers need additional training in order to effectively handle the conduct of pupils who have disabilities. Instructors must be ready handle challenging student behaviors in the classroom and have the ability to adapt lessons to accommodate kids with a variety of different learning styles. One technique that might be used to accomplish this objective is to design personalized lesson plans that are tailored to the requirements of each individual learner. Because of this, it is possible that students who have hearing loss will have a better chance of achieving academic success. It is possible for the teacher's pedagogical understanding to have an influence on the outcomes of the teaching process and learning process. This understanding, in turn, is dependent on the multiple methods, skills, and information that are utilized by the educator within the settings of the classroom.

There are quite a number of strategies that can be applied in the teaching of students with HI to ensure that they benefit maximally from the content being presented to them. Some of the general strategies include the teacher to face the class while speaking. This is by ensuring that both the students and the interpreter (if present) can see whoever is teaching while he or she is teaching. In addition, the teacher should refrain from lecturing or giving out procedural information at the same time handing out papers or other instructional materials. Not maintaining eye contact, while communicating in sign

language, with the student also implies that there is loss of information for the student. Moreover, horse shoe-shape seating arrangements should be preferred at all times. This sitting arrangement offers students who are deaf or hard of hearing an advantage for seeing all class participants. This is a significant change to the normal classroom sitting arrangement whereby desks are arranged in rows. In case desks are arranged in rows, the plan should be such that the front seats are left open to be occupied by students who are deaf or hard of hearing in addition to their interpreters. Also, the teacher should always break information or content into small steps while giving instructions on new tasks.

To add to, when suitable, ask for a hearing volunteer to join forces with a student who is deaf or hard of hearing in-class assignments and allow time for explanation of directions and critical information. In addition, comments and questions made by other students during class discussion should be repeated and acknowledge students who are speaking or signing. This makes the other students focus on them for maximum attention. Visual aids and materials are to be used during instruction for the ultimate benefit for students with a hearing loss. This is because vision is their primary means of receiving information. While the student maintains eye contact with the interpreter (if any), it is important to remember to maintain eye contact with the student also. Lastly, face the class while speaking. As institutions try to utilize interpreters in bridging the gaps generated by linguistic seclusion, they need to always sort for services of qualified interpreters (Russell, 2010)

The practices of inclusion which are individualized accommodations and modifications are put into place to help students at risk and students with special needs, the HI included,

to have success in their Individual Education Programme (IEP) or academic program. Typically, accommodations are listed in the student's IEP. Suggestions for accommodations for a variety of disabilities include ability grouping. In ability grouping the teacher can have few peers that can support the student experiencing weaknesses. In addition, the teacher should provide photocopied notes. This is a way of discouraging these students from copying notes from the board or chart paper, thus maintaining eye contact while using sign language. To add to, keep lessons concrete, by use of visual and concrete materials as much as possible and use assistive technology when available. Accommodation is very important in an inclusive school setting.

Modification involves alteration to a number of educational components in a curriculum. The components may be knowledge, the technique of instruction, and student's learning outcomes. It is done through applying changes to materials and programs (Comfort, 1990; King-Sears, 2001; MacMackin & Elaine, 1997). Koga & Hall (2004) define curriculum modification as modified contents, instructions, and/or learning outcomes so as to meet the diverse student needs. In other words, curriculum modification is to do with instructional alteration or content alteration in addition to other wide range of educational alterations. The way that we interpret curriculum as a whole influences our understanding of curriculum modification. Modification is an important aspect of special needs education.

2.3 Teachers Perceptions towards Students with Hearing Impairments

Teachers worldwide are considered as the basic tools in education and curriculum implementations at all levels of education. The value of any nation's education is determined by the values of the teachers and their perceptions in relation to the profession. Perceptions of teachers are considered as one of the factors that affect the academic performance of the primary school going children in various ways. The same applies to other levels of education including at tertiary level.

Studies carried out have revealed that teacher expectations, which is influenced by perceptions, concerning the abilities of deaf students influence the way they perform in inclusive class setups. For example, when teachers lower expectations or fail to encourage full participation in the classroom, this can lead to a feeling of helplessness and dependency (Antia, Stinson & Gaustad, 2002). Furthermore, a number of studies have pointed to the fact that teachers often have lower academic and behavioural prospects of deaf and hard of hearing students than of their hearing peers (Gaustan, 1999; Sari, 2007; Thumann-Prezioso, 2005). Further studies have shown that as teachers increase their knowledge about the needs of deaf students, their perceptions and expectations are usually more positive; consequently better outcomes for the students (Jarvis & Iantaffi, 2006; Sari, 2007). From the above we can infer the need of having Deaf Awareness as a part of teacher education programs during training.

Experiences that people go through in life shape one's perceptions; teachers are not an exception. From social psychology we learn that perceptions are shaped as explained in

three major learning theories. The theories are: operant conditioning, classical conditioning and observational learning. Ivan Pavlov, who is the proponent of classical conditioning, defines classical conditioning as the procedure for modifying behaviour in which repeated pairing of conditioned stimulus with an unconditioned stimulus leads to the development of a conditioned response. (Ntim, 2010, Lineros & Hinojosa, 2012).

In classical conditioning a neutral stimuli, that initially elicited no response, is made to naturally provoke a response. For example, children become fans of the same football clubs as their fathers through observation having initially not had any interest in the club. They believe over time that those particular football clubs are the best and develop the same passion, as their fathers, for the clubs. People form perceptions according to how they are conditioned or how their experiences condition them. B. F. Skinner, who is the proponent of operant conditioning theory, defines operant conditioning as a form of learning in which a response is made in anticipation of a stimulus. In this theory he emphasizes the role of both reinforcement and punishment. In this theory, reinforcement increases the likelihood that behaviour will be recur (Ntim, 2010). Behaviours that are followed by positive consequences are reinforced and are more likely to recur than those behaviours and perceptions that are followed by negative consequences (Morris & Maisto, 2001). For example, if a mother smiles at her child whenever the child picks something up for her, the child begins to realize that it is good to be helpful and he is likely to repeat the behaviour. This is an application of a positive consequence to behaviour. The converse is true when there is application of negative consequences.

Albert Bandura, who is the proponent of observational learning theory, states that a behaviour is acquired by watching another person or model that performs the behaviour (Yara, 2009).In this regard people also learn perceptions through observation of people around them, especially if they are people they admire, respect or hold in high esteem. Children therefore observe the perceptions of parents and teachers and learn a lot from them.

Mobilization and awareness programmes need to be carried out with the aim of eradicating taboos and beliefs associated with disabilities (Republic of Kenya, 2005). Awareness among the teachers and pupils should also be improved so as children with disabilities can be viewed as normal human beings (UNESCO, 2010). Teachers need to turn their perceptions so as to accommodate students who were traditionally locked out of school due to their disabilities and thus denied the right to education and involvement in all aspects of human activities and promote human right (UNESCO, 2010).

2.4 Use of Kenya Sign Language for Academic Instructions

Phonology, syntax, morphology, semantics, and pragmatics are the components of language that make up the building blocks of communication (Luckner et al., 2021). According to Luckner et al., (2021) communication can be defined as the process of encoding and decoding messages that are passed from one person to another in order to activate meaning in the mind of the receiving party. Both verbal and nonverbal exchanges of information are viable modes of communication. In addition to this, communication includes all of the different ways in which one mind can influence another. Any form of

expression, from spoken words to visual depictions of concepts to musical compositions and everything in between is included under the umbrella term "communication." According to Ellis and Beattie, communication takes place when one organism encodes information into a signal, which is then transmitted to another organism that is able to decode the signal and respond in an appropriate manner (2019). Without a relationship of any kind between the educator and the person being educated, education would be impossible. There is a significant contribution made to the process of communication by educators who maintain consistent contact with their classes. As a direct consequence of this, teachers are in constant two-way communication with their students through the use of message exchange. As a consequence of this, communication is an extremely important skill to have in the classroom. Without unobstructed channels of communication, there is no possibility of education.

Kathare, (2020) makes the observation that the majority of educators are aware of the significance of words; nevertheless, many of them fail to see how much children may learn from nonverbal cues including facial expressions, body language, spatial awareness, and temporal awareness. MED et al., (2017) indicates that a decree was published encouraging deaf-specific schools to forsake the use of Sign Language in favor of total communication. The order also said that using complete communication was preferable. Since 1999, there has been a substantial movement away from whole communication and toward Sign Language as the primary form of communication for people who are deaf or hard of hearing. MED, (2017) further suggests that communication is "the act of transmitting and receiving information or ideas through the use of spoken, written, or

nonverbal clues." Prinz, (2020) describe communication as "the act of giving or receiving information."Prinz, (2020) also indicates that communication is defined as the act of receiving and sharing information with the intention of improving one's own life as well as the lives of those around him.

The majority of the time, there are two different people involved in the situation: the sender and the recipient. We are able to exert some control over our environment thanks to our capacity for communication. Effective communication skills are necessary for making connections with other people and getting involved in one's local community. There are many different modes of communication, just two of which are spoken and written language. Both the encoding and decoding of messages are necessary steps.

According to the findings of a study conducted by Mwanyuma, (2019) on the factors influencing academic performance of learners with hearing impairments in special schools in selected counties in Kenya, problems with communication and language present a significant barrier to the achievement of academic standards for students who have hearing loss. According to the findings of the survey, the majority of teachers lacked both knowledge and skills in the areas of format and sign language instruction. As a direct consequence of this, they were unable to provide assistance to deaf youngsters in the process of enhancing their academic standing (Mwanyuma, 2019). Study findings lend credence to the research conducted by Mwanyuma, (2019) which focused on the challenges of providing a high-quality education to Kenya's Deaf community.

The authors of this research took a fresh look at the concept that insufficient communication presents the primary challenge for deaf education. American Peace Corps volunteers Shiekh and Norma worked in Kenyan schools to educate students who were deaf or hard of hearing 2020. They noted that due to challenges with communication, a large number of Kenyan instructors are unable to teach their Deaf students in an appropriate manner. A great number of educators lack even the most fundamental sign language skills and lack training on how to communicate effectively with their deaf students..

American Sign Language, spoken language, and complete communication (which integrate simultaneous sign and oral language) were the three most common and widely used ways of communication and teaching. According to Richards, (2018) the most important aspect of educating students who have hearing loss is providing those with functional hearing with every opportunity to improve their listening and oral skills, as well as providing those with functional hearing with every opportunity to speak for themselves and actively participate in decision-making regarding their own lives and goals.

In addition, providing those with functional hearing with every opportunity to improve their listening and oral skills is the most important aspect of educating students who have hearing loss. When working with students who have hearing loss, this is the most important consideration. It is of the utmost importance to provide students with the resources they require to make the most of the hearing they still possess.

Hearing aids are commonly provided to youngsters at the earliest feasible age in order to assist in the development of their language and to help them become more sensitive to the sounds of their surroundings (Richards, 2018). It's possible that medical professionals and the families of children who have hearing loss will have very strong ideas on which method of communication is ideal for the student. Yet, it appears that Ghana does not have a specific guideline that governs the kind of communication that should be used in the classroom teaching of students who have hearing loss.

It is up to individuals' perspectives on what constitutes fairness and their preferences towards education to decide whether oral education or sign language should be supported and utilized. When interacting with their pupils, educators might choose any one of a number of different ways, as pointed out by Kumedzro (2017). According to Kumedzo (2017), the needs of a specific group of hearing-impaired people should lead the selection of a style of communication that serves not only to promote conversation but also to facilitate language learning. This is because the style of communication should serve to promote conversation and facilitate language learning. He makes this remark because, in his opinion, one of the primary objectives of communication with deaf individuals is to be the promotion of language learning.

When considering modes of communication for a group of individuals who have hearing loss, there is a lot of data to suggest that the needs of the individual should be taken into consideration. This is because hearing loss can affect people in a variety of ways.

Oralism, often known as oral communication, is one of the methods that Tucker and Powell identify as being used by humans to communicate with one another (2021). Oral communication, more commonly referred to as speech, requires a person to have the capacity to clearly articulate sounds or words in order to convey meaning. Deaf and hard of hearing individuals rely on a combination of lip reading (watching the speaker's lips and face) and residual hearing to have meaningful conversations with hearing people. Lip reading helps deaf and hard of hearing people understand what hearing people are saying (through hearing aids). Oral communication necessitates the generation of speech sounds in addition to the upkeep of a conversational style between a minimum of two individuals.

Reading someone's lips and analyzing their voice can be done in conjunction with this. Oral Communication is a method of instruction for people who are deaf or hard of hearing that emphasizes the use of spoken words and speech reading rather than sign language or finger-spelling. Oral Communication was developed for people who were born without the ability to hear or who had hearing loss as a child. Children with hearing loss of any severity have the right, according to the auditory-verbal philosophy that was advocated for by Kirkham, (2021) to learn how to listen and communicate through spoken language in the context of their regular communities of living and learning. This is true even if the hearing loss is mild. This is due to the fact that proponents of the auditory-verbal method contend that it is a fundamental right of every child to work on improving their listening and speaking abilities.

This is supported by research carried out by the British Association of Teachers of the Deaf in 2018, which found that the vast majority of deaf people might acquire adequate hearing with the help of competent auditory rehabilitation procedures. This was found to be the case. It is anticipated that children will acquire language in a manner that is roughly analogous to that of hearing youngsters. In situations when it was necessary for individuals to communicate, "they and their forebears have built a signed language," (Weber, 2020). Manualism is the practice of speaking with one another via the use of a standardized set of hand motions. Sign Language is another name for manualism. Sign Language is typically used to refer to the language used by the deaf people, which consist of both manual signs and finger spelling. This is due to the fact that Sign Language is a symbol-based language. This is the situation due to the fact that American Sign Language is a symbol-based language.

The Languages used in a classroom theatrically affects students' chance and ability to learn, therefore, it is important to understand the essential role that language plays in enabling access to schooling and academic accomplishment. When curriculum content is offered in an unacquainted language, a large amount of time must be spent first teaching students to understand the unacquainted language and students who cannot comprehend the language in the classroom are unable to exhibit what they know, ask questions and participate.

A study by Lewis (2009) show that KSL is used in thirty-two out of seventy-one institutions for students with HI in Kenya. This clearly shows a positive shift towards the

use of Kenyan Sign Language: a language that has been recognized as an official language for communication in Kenya by the Kenyan Constitution (2010). There is a necessity for further research on KSL. He recommends for studies on actions to enhance the use of KSL in teaching to improve performance of students with HI. Bunyasi (2010) adds that teachers' skills in KSL are inadequate and that there is lack or inadequate resources in classes for students with HI.

According to Kenya National Association for the Deaf (KNAD) Kenyan Sign Language (KSL) is a visual language comprising of specific gestures (signs), hand-shapes and facial expressions. The signs are said to follow grammatical rules. Kenyan Sign Language is the official language of the Deaf community in Kenya. KSL is also used in educational setting for communication. The education of students with special needs in Kenya has been embraced by the Kenya government. This is as reflected in several policy documents; among them are: the Children's Act 2001, the declaration of Free Primary Education in January 2003, the provisions of the Disabilities Act 2003 and the Sessional Paper No. 1 of 2005 on the Policy Framework for Education, Training and Research which guarantee the education and employment of all persons without discrimination. The teaching/learning of Kenyan Sign Language must be addressed.

This is so because even though deaf children may acquire sign language in the natural setting provided by the school community, the degree of competence they require for educational purposes, and for complex discourse in their adult life after school, cannot be achieved from only interacting with a language whether spoken or signed. The relevant

question to tackle is: how competent are the teachers are in the use of Kenyan Sign Language, to teach the language and also to use it in curriculum delivery? Adoyo (1995, 2000, 2001), for example, reported that there is a lack of teachers who are competence in Kenyan Sign Language.

There are many reasons for this lack of competent teachers. For example, Okombo (1994) reports lack of Kenyan Sign Language experts as a possible problem in the teachers training institutions. Secondly, there is lack of interest in this area of Sign Language. This, he refers to as an attitude problem. Even though teachers relate daily with deaf children who are native Kenyan Sign Language signers and who can provide them with a perfect setting for signing, there are still low perceptions toward this indigenous language as a medium of instruction. This is divergent to the conclusions in other parts of the world which are reporting significant academic improvement through the use of their respective Sign languages.

2.5 Theoretical Framework

Different learning theories come in handy to assist educational psychologists to understand, predict, and control human behaviour. For instance, educational psychologists have worked out mathematical models of learning that predict the probability of a person's making a correct response; these mathematical theories are used to design computerized instruction in reading, mathematics, and second-language learning.

The research was based on the social learning theory propounded by Albert Bandura for this research. The theory involved two settings where in each setting a pre-school child is

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placed in a room in which the experimenter and a model interacted with toys in a room in front of the child. In one setting the model interacted with the toys in a non-aggressive manner, completely ignoring the presence of a 'Bobo' doll (a punch bag doll that was made to look like a clown). In another setting the model became very aggressive with the doll, knocking it and yelling at it, throwing, it in the air and hitting it with a hammer. When each child in these separate settings was left alone in the room and had an opportunity to play with the toy, the child who was exposed to the aggressive model beat up the 'Bobo' doll in exact imitation of the model while the child who saw the model ignore the doll did not act aggressively towards the doll. Simply the aggressive actions had been learned from purely by observing the model with no reinforcement needed.

The researcher chose this theory because it touches on most of the variables under consideration. Elements of learning are attention, memory, imitation and motivation. Academic achievement is an outcome of interaction between the learner and academic resources which include the teachers and other resource materials like books. If teachers have to influence a student's resultant behaviour they must have mastered their skills learned in college and ready to apply them well. For example through training a teacher understands that a caring teacher is more likely to be modeled than that who is hash and cruel. Through training a teacher will also judge and assess students' behaviour objectively but not base it on the opinion of others.

2.6 Conceptual Framework

A conceptual framework is a brief description of an occurrence under study accompanied by a graphic depiction of the main variables of the study. It establishes a perception through which the researcher views the problem. The academic performance in Karen Technical Training Institute for the Deaf (KTTID) is directly influenced by the quality of teacher training in special needs education, the instructional strategies for the teaching students with HI, perceptions of teachers towards students with hearing impairments and use of Kenya Sign Language for academic instructions at the institute. If there is inadequate training in special needs education then the consequence is that the academic achievement of students will be low. If there is limited or no well-organized special needs education programmes or practices at KTTID then academic performance is likely to drop.

In addition, if there is little use of Kenya Sign Language for academic instructions and many students have severe to profound hearing loss the academic performance is likely to below par. However, class attendance by students at the institute, teaching/learning facilities and motivation of both teachers and students may affect academic achievement either way. In this study the three intervening variables: class attendance, motivation and learning resources were kept in check such that they did not affect greatly the findings. This information is represented in a conceptual framework.

Figure 2: Conceptual Framework on Effects of Teacher Characteristics on Academic Performance of Students with HI at KTTID

Independent Variables   Dependent Variable:

Teacher Characteristics		Intervening Variables		Academic Performance
• Teachers trained in special needs educ. • Instructional strategies • Teacher perceptions • Use of Kenya Sign Language		• Students' Class Attendances • Motivations • Learning resources		• Grades • % Age Marks • Mean scores
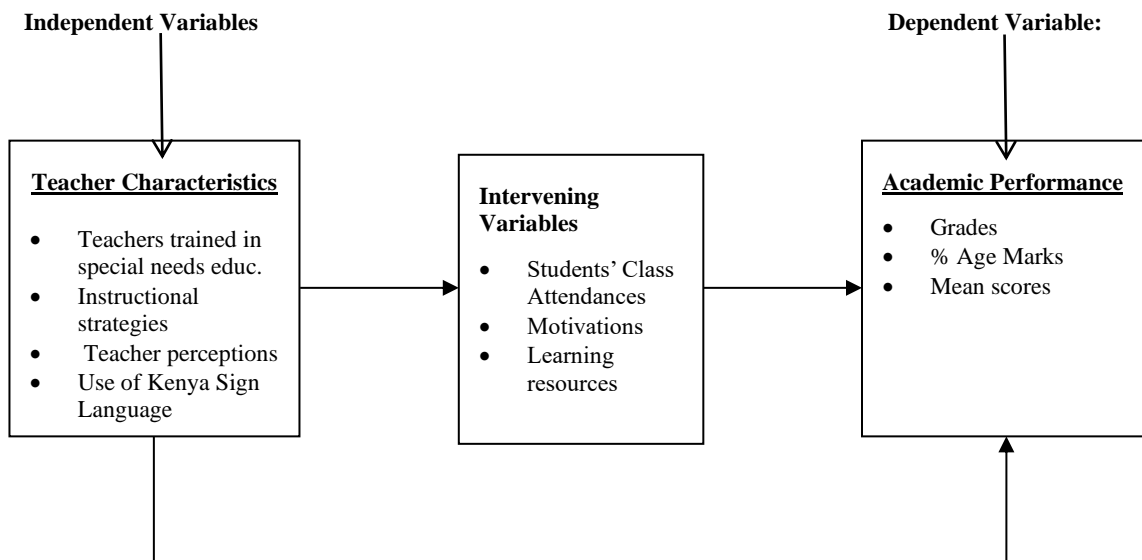
Source: Researcher (2024)

2.7 Summary

There has been nothing much done in research to establish what is ailing the academic achievement at KTTID. However, other pieces of research have been carried out about the general education and on special education as a whole. In addition, there are no pieces of research done concerning instructional strategies for the hearing impaired applied at KTTID. In summary this research is aimed at zooming into how teacher training in SNE, instructional strategies for the hearing impaired, perceptions of teachers towards students with HI and use of Kenya Sign Language for academic instructions influences academic performance at KTTID.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.0 Introduction

This chapter explains the methodology the researcher used when gathering data. It has the research design, target population, sampling procedures and size, description of data collection instruments, validity and reliability of the instruments. In addition, it has pilot testing, data collection procedures and data analysis techniques.

3.1 Research Design

According to Orodho (2003) survey research design, which was be adopted, is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals. The survey is the most often used method for gathering information about people's perceptions, opinions, habits or any of the variety of education or social issues. The research carried out used questionnaires as tools to collect data.

3.2 Target Population

Population refers to the entire group of individuals having common observable characteristics. The target population in a research is the total numbers of individuals in a group that the researcher is intended to work on. Target population is the total number that can be worked on in a research (Saleemi, 1997). According to Sampson (2012), the population is the group of individuals to which the findings, discussion of the findings and consequences of research is generalized. The purpose of stating the target population is to show the size of the larger group that the researcher informatively and meaningfully

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analyzed at the end of the study. The target population in this study was the sixty-one teachers of KTTID and the two hundred and thirteen students in the institute. The target population comprises of 61 teachers and 450 students totaling to 511 respondents.

3.3 Sampling Procedures and Sample Size

Stratified and Random sampling techniques were used to get the required sample. According to Oso and Onen (2005) the stratified and random sampling technique aims at ensuring proportionate representation with a view of accounting for the differences in sub-group characteristics. Gay (2009) recommends that when the target population is less than one thousand members, a minimum sample of 20% is considered satisfactory for education research. In line with Gay's recommendation a sample of 25% was chosen from each stratum in the target population to provide adequate information that could represent the entire contribution of the target population. The institute has a population size of 61 teachers and 450 students. The sample size was 15 teachers and 113 students which is 25% of the respective strata of the population. Simple random sampling was applied to select the individual respondents in every stratum as shown in table…..

Table 3.1: Sampling Technique and Sample Size

Category	Target population	%	Sample size
Teachers	61	25	15
Students	450	25	113
Total	**511**		**128**

Source: Field data, (2024)

3.4 Description of Data Collection Instruments

The instruments used in collection of data were questionnaires. A questionnaire is a series of written questions a researcher supplies to subjects, requesting their response. Usually, the questionnaire is self-administered. The reason for the researcher picking on the questionnaires is because questionnaires are more objective and are relatively quick to collect information. In addition, information can be gathered from a large portion of a group. Orodho (2005) adds that questionnaires give room for anonymity which enhances honest responses and they are also suitable for a sample that is literate.

The questionnaires for this study were prepared in line with the research objectives where all the four objectives were covered. The teachers' questionnaires had four general questions and seventeen questions on the four objectives while the students' questionnaires had four general questions and eighteen questions on the four objectives. They contained close ended questions. Two sets of questionnaires were used; one for the 15 sampled teachers and the other for the 113 sampled students.

3.5 Pilot Testing

Piloting is normally carried out to establish the reliability and validity of the instrument. Simply it is the pre-testing of the instruments to ascertain whether the instruments meet the set reliability and validity thresholds set before they are accepted for use. In this case questionnaires were used for collecting data. For this case pilot study was carried out before the actual study with a target of fifteen respondents drawn from the various strata; thirteen for class eight pupils and two for teachers. This was done at PCEA Kambui

School for the Deaf. The school is located in Kiambu County and has admission criteria similar to that at KTTID. Pupils also sit internal exams and finally external exams administered by Kenya National Examination Council. After piloting minor corrections were made on the instruments where it had been deemed necessary.

3.5.0 Validity of Research Instruments

According to Orodho (2004) validity is the extent to which the empirical measure or several measures of the concept precisely measures the concept. Validity therefore is concerned with establishing whether the instruments content is measuring what it is supposed to measure. As per Kothari (2010) content validity is the extent to which a measuring instrument adequately covers of the topic being studied. This type of validity makes sure that the instruments cover the subject matter being studied as envisioned by the researcher. The researcher discussed the questionnaire items with other researchers and professionals in the area of technical examinations for students with special needs. The researcher also got expert advice by discussing various aspects of the questionnaire with his supervisors. This was meant to establish extent of coverage of content and eliminate ambiguity. Simple language was also used in framing the items.

3.5.1 Reliability of Research Instruments

Reliability is the performance of a measuring tool in terms of consistency, such that it can deliver accurate results and that it must deliver similar results consistently after repeated trials (Leedy 2000). Split half method was employed to determine the reliability of the research instruments. The method involved splitting the items in the instruments into two

halves (odd ones and even ones). The scores on the odd numbered items were correlated with the scores on the even numbered items. The Spearman-Brown prophecy formula was used to calculate the reliability coefficient of these piloted instruments. A reliability coefficient of 0.72 was obtained; which was above the 0.69 threshold recommended in the Spearman-Brown formula. The instruments were therefore said to be reliable and adopted for use.

Spearman-Brown Prophecy Formula

Reliability of scores on total test = $\frac{2 \text{ x reliability for } \frac{1}{2} \text{ test}}{1 + \text{reliability for } \frac{1}{2} \text{ test}}$

3.6 Data Collection Procedures

To enable the researcher to proceed with the study, a letter of introduction was obtained from Maasai Mara University. The researcher then presented it to the National Council of Science and Technology in the Ministry of Education, Science and Technology in order to obtain a research permit. The researcher was given the permit which he used to seek permission from the Langata Sub-County Education Officer who gave the researcher an introduction letter for the Principal KTTID. The researcher then proceeded to the institution to carry out the research. The questionnaires were typed, photocopied and distributed to the respondents. Questionnaires were administered to a sample group that had already been determined and after responding to the items therein, the questionnaires were collected and handed over to the researcher. The researcher elicited services of research assistants who are conversant with both English and Kenya Sign Language.

3.7 Data Analysis Techniques

The data was collected and appropriate measures applied to analyze the data. The data collected was first coded then edited to get relevant data for the study. The edited data was coded for easy classification in order to facilitate tabulation. The tabulated data was descriptively analyzed through frequency tables. This study was more of exploratory in nature and method of data analysis was thus mainly descriptive involving the use of tables, bar graphs and pie-charts. while inferential statistics was analyzed through Multinomial Logistic Regression Model

3.8 Ethical Consideration

The researcher was caution during the administering the data collection instruments to the respondents. This was as a way to ensure the rights and privacy of the respondents were respected. An explanation on the purpose of the study was given to the respondents, before the administration of the instruments, in the language they understood better; either English or Kenya Sign Language. They were also informed on what they stood to gain from the research. The researcher sought the consent of the respondents before they are given the questionnaires. To ensure confidentiality, the questionnaires had numerical codes instead of names and no respondent was forced or coerced into filling them. The study findings were presented without any manipulation of data in favour of the researcher's expectation.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.0 Introduction

This chapter is composed of data which was obtained; the various analyses and interpretation of the findings on effects of teacher characteristics on academic performance of hearing-impaired students at Karen Technical Training Institute for the deaf.

4.1 Response Rate

The total number of questionnaires issued was 128. 15 questionnaires were issued to the teachers and 113 questionnaires were issued to the students. Table 4.1 shows the summary of the results.

Table 4.1: Response Rate

Response	Frequency	Percentage
Returned	110	86%
Not returned	18	14%
Total	**128**	**100.00%**

Source: Field data, (2024)

The number of questionnaires that were administered to teachers were 15 and the number of questionnaires returned were 15 which was 100% response rate. The number of questionnaires that were administered to students were 113 but 95 questionnaires were returned. Overall, a total of 110 questionnaires were fully filled and returned. This is equivalent to 86% rate. According to Mugenda and Mugenda (2003), a response rate of

more than 50% is considered good and more than 70% is considered as excellent. The high response rate was attributed to consistent follow up and engaging a research assistant.

4.2 Bio-Data Information

Descriptive statistics were carried out to establish the characteristics of the responses. The findings were presented in figures and tabular forms.

4.2.0 Gender Distribution of Teachers

Teachers were asked to indicate their gender. Figure 4.1 shows the summary of the results.
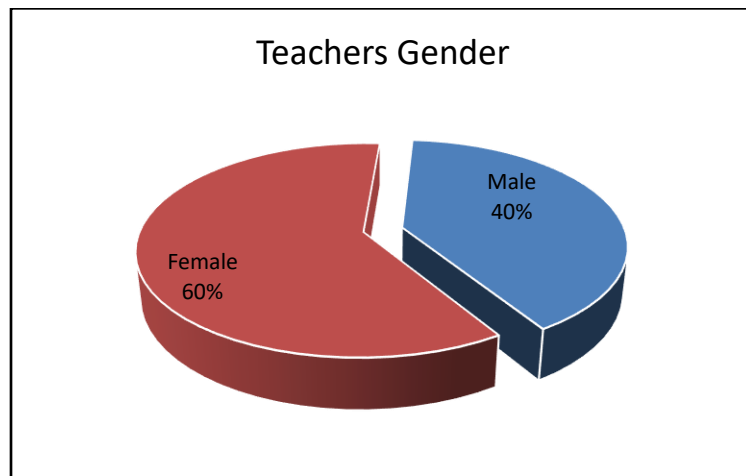
Figure 4.1: Teachers' Gender

From figure 4.1, the gender of the teachers at KTTID was fairly uneven with more female teachers at 60 percent in comparison to Male teachers at 40%. However, the distribution of gender was in line with the requirement of one third rule of gender equality.

4.2.1 Teachers Level of Education

The level of education was sought to investigate whether the teachers at KTTID were competent in performing their teaching duties. Figure 4.2 shows the summary of the results.
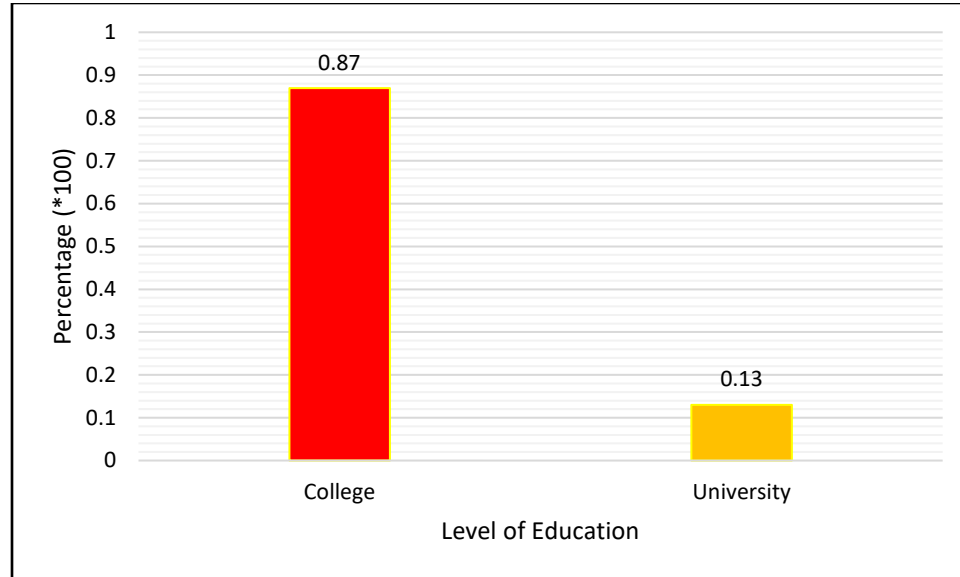
Figure 4.2: Teachers Level of Education

From the figure 4.2, majority (87%) of the teachers at KTTID had college level of education. Only 13 per cent of the teachers at KTTID had university level of education and no teacher had primary or secondary level of education. This shows that the teachers at KTTID were well competent and trained in handling students with hearing problems.

4.2.2 Age Group of the Teachers

Teachers were asked to indicate their age groups. Figure 4.3 shows the summary of the results.
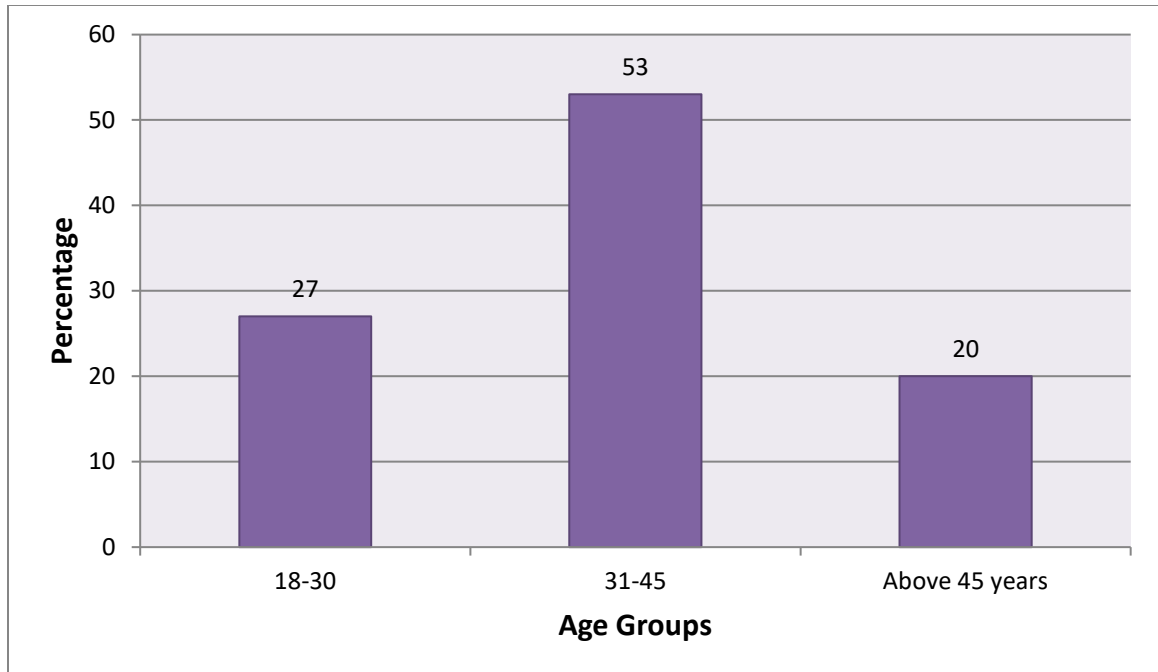
Figure 4.3: Age of the Teachers

According to Figure 4.3 majority of the respondents (53%) fell in the bracket age of 31-45 years while the lowest which was above 45 years had 20 percent. 27 percent of respondents fell in the age bracket of 18-30 years. This clearly shows that the bulk of the teachers fall in the most productive age bracket of 31- 45 years where teachers are very innovative and interact with the environment more.

4.2.3 Duration of Work at KTTID.

Teachers were asked for how long they have been working at KTTID. Figure 4.4 shows the summary of the results.
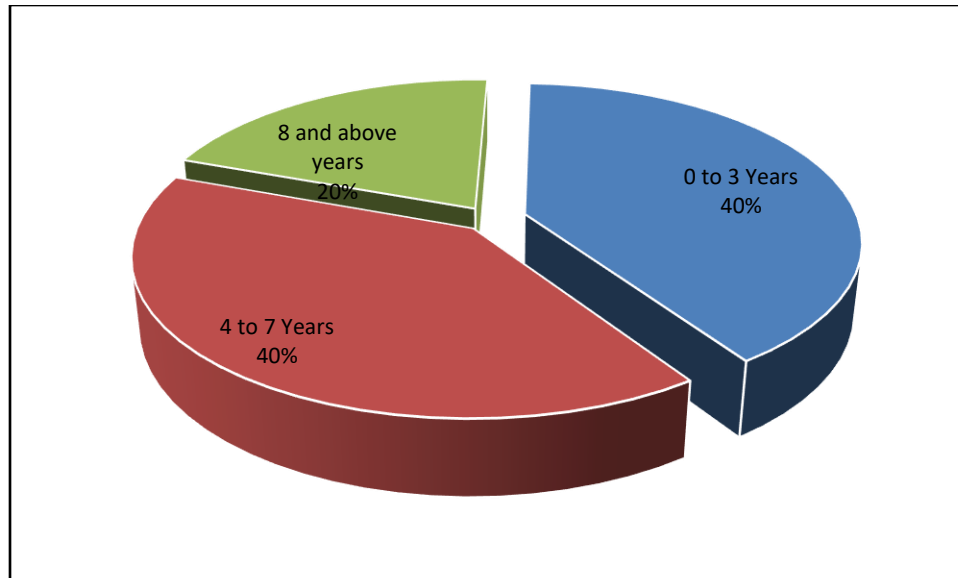
Figure 4.4: How Long Teachers Have Been at KTTID.

From figure 4.4, the respondents answered that majority (40%) have been at KTTID for 4 to 7 years which was also a similar proportion to those who have been there for less than 3 years. Only 8% of the respondents indicated that they have been there for 8 and above years. This information reveals that teachers have been in the institution for a good number of years hence they have the right capacity and experience to train the deaf.

4.2.4 Gender Distribution of Student

The students were asked to indicate the gender. Figure 4.5 shows the gender distribution of the students.
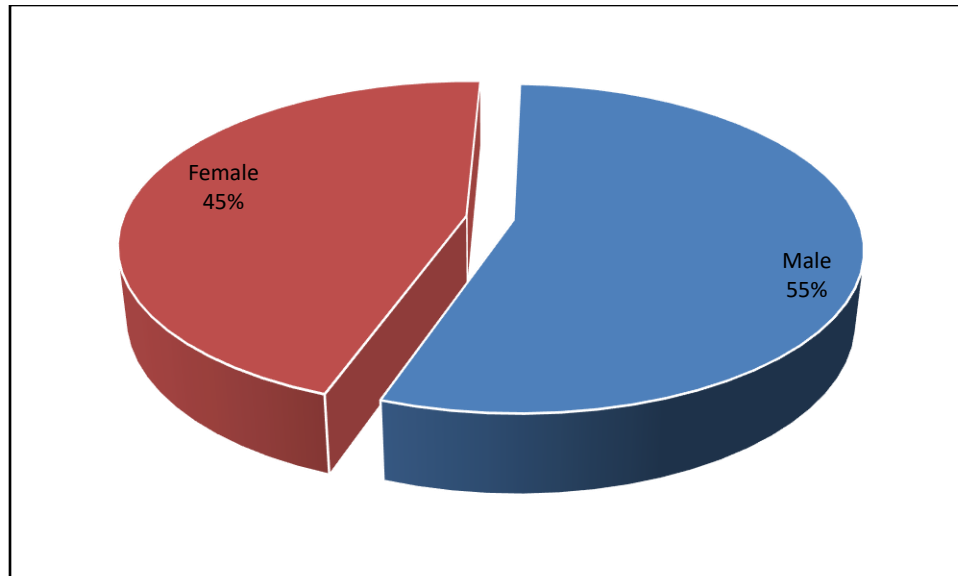
Figure 4.5: Gender Distribution of Students

From the figure 4.5, the gender of the students at KTTID was fairly even with more male students at 55 percent as compared to female students at 45%. This distribution shows that both genders have equal exposure to deafness.

4.2.5 Hearing Levels

The students were asked to indicate their hearing levels. Figure 4.6 shows the summary of results.
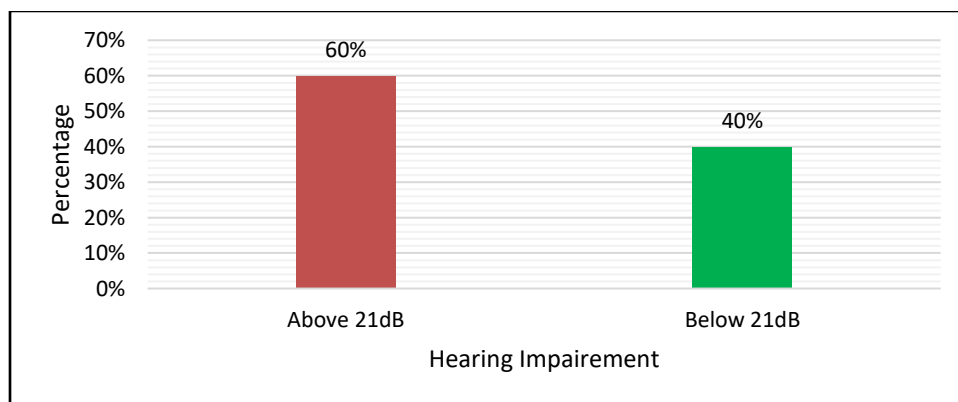
Figure 4.6: Hearing Levels

From the Figure 4.6, majority (60%) of the students are hearing impaired (above 21dB) while 40 per cent of the students are hearing (below 21 dB).

4.2.6 Performance of Students

The students were asked to indicate their average grade in the last term's internal exam as indicated in the KNEC system. The term referred to here is Term III, 2022 as per the calendar of Events of the Institute. Figure 4.7 shows the summary of the results on distribution of students' performance.
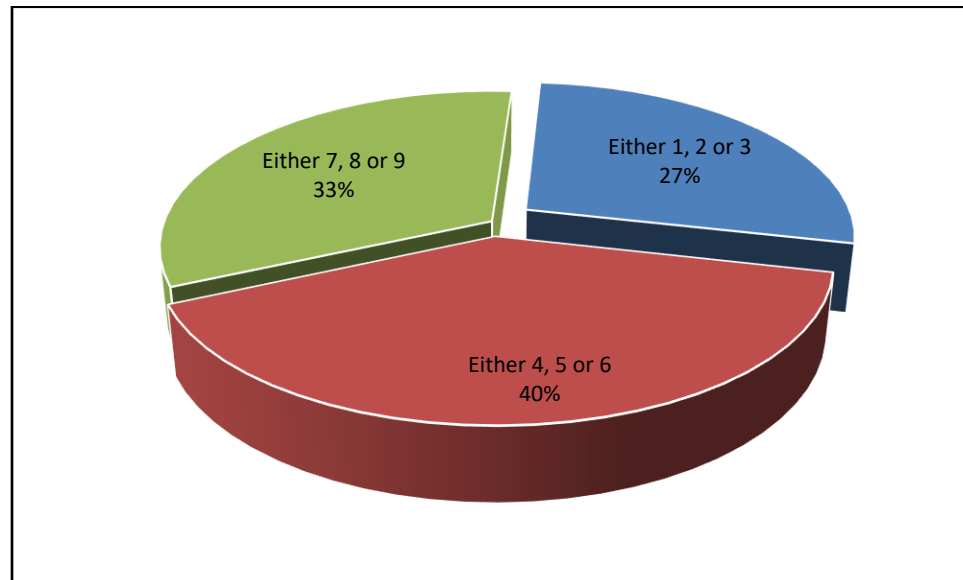
Figure 4.7: Performance of Students

From figure 4.7, majority (40%) of the students had average performance of Fair. 33 per cent of the students performed in between 7 and 9 and 27% of the students performed below 3. The results reveal that the performance has been fairly distributed but skewed to better performance.

4.3 Descriptive Statistics of Teacher Characteristics

4.3.0 Teacher Training in SNE

The teachers were asked on teacher training in SNE statements. The statements were designed to investigate whether teachers are trained in SNE. Table 4.2 shows the summary of the results.

Table 4.2: Training in SNE

	SA	**A**	**N**	**D**	**SD**	**Mean**	**Std.D**
Most of the teachers at the institute are trained in SNE	6.70%	80.00%	13.30%	0.00%	0.00%	2.07	0.46
Most of the teachers at the institute are confident handling students with HI	13.30%	40.00%	26.70%	20.00%	0.00%	2.53	0.99
Most of the teachers at the institute have good perceptions towards students with HI	40.00%	20.00%	20.00%	6.70%	13.30%	2.33	1.45
Most of the teachers at the institute provide positive feedback to students	20.00%	46.70%	20.00%	6.70%	6.70%	2.33	1.11
Teachers trained in Special Needs Education generally post good grades	33.30%	33.30%	13.30%	13.30%	6.70%	2.27	1.28

Source (Survey Data, 2024).

As per the results in Table 4.2, majority (80%) of the respondents concurred that they are trained in SNE. The mean of 2.07 and standard deviation of 0.46 reveal that the responses did not vary very much. The results also revealed that 53.3 percent of the respondents concurred that most of the teachers at the institute are confident handling students with

HI. The mean of 2.07 and standard deviation of 0.46 reveal that the responses did not vary very much.

The results also revealed that the respondents concurred to the statement that the teachers at the institute have positive perceptions towards students with HI as revealed by the mean of 2.33 and a standard deviation of 1.45. Majority (66.7%) of the respondents agreed that most of the teachers at the institute provide positive feedback to students. Additionally, the results also revealed that the respondents were in agreement to the statement that teachers trained in Special Needs Education generally post good grades as revealed by the mean of 2.27 and standard deviation of 1.28. The results are consistent with that of Hanushek, et al., (2005) who investigated the effects of participation in special education programs using state-wide individual-level data from Texas. They discover that special education improves the achievement of students with disabilities.

To find out the effect of trained teachers in special needs education on their students with hearing impairments at Karen Technical Training Institute for the Deaf, the researcher used a simple regression analysis.

4.3.1 Instructional Strategies

The respondents were asked to indicate their agreement level on instructional strategies adopted by teachers at KTTID. Table 4.3 shows the summary of the results.

Table 4.3: Instructional Strategies of KTTID Teachers

	SA	A	N	D	SD	Mean	Std.
Teachers always face the class while speaking or/and using sign language	10.9%	47.3%	26.4%	14.5%	0.9%	2.12	0.76
While using an interpreter both the interpreter and teacher are always close and both face the students	21.8%	27.3%	22.7%	24.5%	3.6%	3.00	0.98
Teachers use a lot of visual aids and materials in class	32.7%	30.9%	25.5%	1.8%	9.1%	2.00	1.00
In most classes the sitting arrangement is horse-shoe shaped	23.6%	17.3%	22.7%	22.7%	13.6%	2.00	0.87
The curriculum used at this institute is adapted for the HI	23.6%	23.6%	26.4%	15.5%	10.9%	2.78	0.79
Teachers who apply SNE strategies in class post good grades	26.7%	46.7%	20.0%	0.0%	6.7%	2.00	0.54

Source: Survey Data (2024).

As per the results in Table 4.3, majority (58.2%) of the respondents concurred that Teachers always face the class while speaking or/and using sign language. The mean of 2.12 and standard deviation of 0.76 reveal that the responses did not vary very much. The results also revealed that 48.1 percent of the respondents agreed that while using an

interpreter both the interpreter and teacher are always close and both face the students. The mean of 3.00 and standard deviation of 0.98 reveal that the responses did not vary very much.

The results also showed that the respondents agreed to the statement that teachers use a lot of visual aids and materials in class as revealed by the mean of 2.00 and a standard deviation of 1.00. Majority (40.9%) of the respondents agreed that in most classes the sitting arrangement is horse-shoe shaped. Additionally, the results also revealed that the respondents were in agreement to the statement that curriculum used at this institute is adapted for the HI as revealed by the mean of 2.78 and standard deviation of 0.79. The respondents also agreed that teachers who apply SNE strategies in class post good grades as indicated by the mean of 2.00 and standard deviation of 0.54.

The results are in line with Koga & Hall (2004) who argued that curriculum modification as modified contents, instructions, and/or learning outcomes for diverse student needs. Therefore, it is particularly important to adopt the instructional strategies according to the needs of the students.

4.3.2 Teachers' Perceptions

The respondents were asked to rate the statements on perceptions of the teachers. Table 4.4 shows the summary of the results.

Table 4.4: Teachers' Perceptions

	SA	A	N	D	SD	Mean	Std
Most of the teachers expect less or do not encourage full participation of students with HI in the classroom	13.6%	68.2%	14.5%	2.7%	0.9%	2.1	0.67
Most of the teachers often have lower academic and behavioural expectations of students with HI than of their hearing peers	16.4%	30.0%	35.5%	17.3%	0.9%	2.6	1
Most of the teachers have adequate knowledge about the needs of students with HI	40.9%	13.6%	29.1%	4.5%	11.8%	2.3	1.4
Teachers adequately use reinforcement and punishment at the institute	22.7%	30.0%	34.5%	7.3%	5.5%	2.4	1.1
Most of the teachers have adequate experience of handling students with HI	34.5%	29.1%	20.0%	10.9%	5.5%	2.2	1.2
Most of the teachers are good role models to students with HI	20.0%	26.7%	20.0%	33.3%	0.0%	2.7	1.2

Source: Survey Data (2024).

Results in Table 4.4 reveal that majority (81.8%) of the respondents agreed that most of

the teachers expect less or do not encourage full participation of students with HI in the

classroom. The mean of 2.1 and standard deviation of 0.67 reveal that the responses did not vary very much. The results also revealed that 46.4 percent of the respondents agreed that most of the teachers often have lower academic and behavioural expectations of students with HI than of their hearing peers. The mean of 2.6 and standard deviation of 1 reveal that the responses did not vary very much.

The findings also showed that the respondents agreed of the teachers have adequate knowledge about the needs of students with HI as revealed by the mean of 2.3 and a standard deviation of 1.4. Majority (52.7%) of the respondents agreed that teachers adequately use reinforcement and punishment at the institute. Additionally, the results also revealed that the respondents were in agreement to the statement that teachers have adequate experience of handling students with HI as revealed by the mean of 2.2 and standard deviation of 1.2. The respondents also agreed that most of the teachers are good role models to students with HI as indicated by the mean of 2.7 and standard deviation of 1.2.

The results are in line with the literature in that when teachers lower expectations or fail to encourage full participation in the classroom, it can lead to feeling of helplessness and dependency (Antia, Stinson & Gaustad, 2002). Studies have also shown that teachers often have lower academic and behavioural expectations of deaf and hard of hearing students than of their hearing peers (Gaustan, 1999; Sari, 2007; Thumann-Prezioso, 2005). When teachers increase their knowledge about the needs of deaf students, their perceptions and expectations are usually more positive; consequently better outcomes for the students.

4.3.3 Use of Kenya Sign Language

The respondents were asked to rate the statement on use of KSL during training. Table 4.5 shows the summary of the results.

Table 4.5: Use of Kenya Sign Language

	SA	A	N	D	SD	Mean	Std.
KSL is the main language that is used for academic instructions at the institute	27.3%	60.0%	1.8%	9.1%	1.8%	1.4	0.8
Most of the teachers at the institute are proficient in KSL	22.7%	27.3%	26.4%	20.9%	2.7%	2.5	1.1
Use of KSL for communication is encouraged in class and outside class too	31.8%	16.4%	30.0%	8.2%	13.6%	2.6	1.4
Both teachers and students enjoy the use of KSL for communication	30.9%	23.6%	26.4%	13.6%	5.5%	2.4	1.2
Use of KSL for academic instructions makes it easy for students with HI to understand academic content	24.5%	19.1%	21.8%	19.1%	15.5%	2.8	1.1

Source: Survey Data (2024).

The findings in Table 4.5 reveal that majority (87.3%) of the respondents agreed that KSL is the main language that is used for academic instructions at the institute. The mean

of 1.4 and standard deviation of 0.8 reveal that the responses did not vary very much. The results also revealed that 50 percent of the respondents agreed that most of the teachers at the institute are proficient in KSL. The mean of 2.5 and standard deviation of 1.1 reveal that the responses did not vary very much.

The findings also showed that the respondents agreed that use of KSL for communication is encouraged in class and outside class too as revealed by the mean of 2.6 and a standard deviation of 1.4. Majority (54.6%) of the respondents agreed that teachers and students enjoy the use of KSL for communication. Additionally, the results also revealed that the respondents were in agreement to the statement that of use of KSL for academic instructions makes it easy for students with HI to understand academic content as revealed by the mean of 2.8 and standard deviation of 1.1.

The findings were inconsistent with the reviewed literature. The literature asserted that although teachers relate daily with deaf children who are native Kenyan Sign Language speakers and who can provide them with an ideal environment for signing, there are still low perceptions toward this indigenous language as a medium of instruction. However, the findings are in line with the results in other parts of the world which are reporting significant academic improvement through the use of their respective Sign languages.

4.4 Student's Descriptive Statistics

4.4.0 Effect of Teacher Training in SNE on Academic Performance of Students with HI

The respondents were asked to rate the statements on the effect of teacher training in SNE on academic performance of students with HI. Table 4.6 shows the summary of the results.

Table 4.6: Teacher Training in SNE and Academic Performance of Students with HI

Effect of teacher training in SNE on academic performance of students with HI	1	2	3	4	5	Man	Std.
Most of the teachers at the institute respond to students needs in class well	53.1	34.5	6.2	2.7	3.5	1.69	.96
Most of the teachers at the institute are confident handling students with HI	63.7	23.0	6.2	3.5	3.5	1.60	1.00
Most of the teachers at the institute don't discriminate against students with HI	41.6	43.4	1.8	7.1	6.2	1.92	1.13
Most of the teachers at the institute provide positive feedback to students	39.8	43.4	-	14.2	2.7	1.96	1.10
Most teachers always face the class while speaking or signing	50.4	37.2	0.9	5.3	6.2	1.79	1.12

Source: Survey Data (2024).

Table 4.6 reveals that a majority (53.1%) strongly agreed that most of the teachers at the institute respond to students needs in class well. It had a mean of 1.69 and Std. deviation

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of .96. 63.7% of the respondents strongly agreed that most of the teachers at the institute are confident handling students with HI. It had a mean of 1.60 and a Std. deviation of 1.00 meaning that there was no wider variation. 41.6% strongly agreed that Most of the teachers at the institute don't discriminate against students with HI with a mean of 1.92 and a Std. deviation of 1.13 indicating a small variation. 43.4% agreed that most of the teachers at the institute provide positive feedback to students with a mean of 1.96 and Std. deviation of 1.10 that showed a slight variation.

The findings of the study concur with the findings of Weisel and Tu-Kaspa (2002).The study indicated that a necessary prerequisite for the provision of quality educational services for students with HI is to have an appropriate number of qualified teachers available to serve them. Teachers' abilities and perceptions, which are shaped by training in college, can be of major influence to education. The training of teachers at all levels is often not adequate. Where there is training it often tends to be fragmented, uncoordinated and inadequate. If teachers do not have positive perceptions towards students with special needs, it is unlikely that these children will receive satisfactory education. The number of successful students with special needs can be attributed to teachers' perceptions towards the students

4.4.1 Effect of Instructional Strategies on Academic Performance of Students with HI

The respondents were asked to rate the statements on the effect of instructional strategies on academic performance of students with HI. Table 4.7 shows the summary of the results.

Table 4.7: Instructional Strategies and Academic Performance of Students with HI

Effect of instructional strategies on academic performance of students with HI	1	2	3	4	5	Man	Std.
While using an interpreter both interpreter and teacher are always close and both face the students	64.5	16.8	7.1	4.4	7.1	1.72	1.21
Teachers use a lot of visual aids and materials in class	61.1	18.6	7.1	7.1	6.2	1.78	1.22
In most classes the sitting arrangement is horse-shoe shaped	69.9	19.5	4.4	3.5	2.7	1.49	.94
At this institute students with HI are not expected to achieve exactly the same competency level, in all academic areas, as their peers without HI at the same class	64.6	17.7	11.5	4.4	1.8	1.61	.98
At this institute students with HI are not taught exactly the same content as their peers without HI at the same class	55.8	39.1	2.7	5.3	4.4	1.7	1.06

Source: Survey Data (2024).

The findings of the study indicate that 64.5% strongly agreed that while using an interpreter both interpreter and teacher are always close and both face the students. It had a mean of 1.72 and Std. deviation of 1.21 indicating that there was no much variation. 61.1% noted strongly agreed that teachers use a lot of visual aids and materials in class. It had a mean of 1.78 and Std. deviation of 1.22. 69.9% strongly agreed that in most classes

the sitting arrangement is horse-shoe shaped with a mean of 1.49 and Std. deviation of 94. 64.6% of the students strongly agreed with the statement that at the institute students with HI are not expected to achieve exactly the same competency level, in all academic areas, as their peers without HI at the same class. The agreement was based on a mean of 1.61 and a standard deviation of .98 showing a small variation. 55.85 of the students strongly agreed that at the institute students with HI are not taught exactly the same content as their peers without HI at the same class. The agreement was based on a mean of 1.7 and Std. deviation of 1.06 showing slight variation.

The findings of the study concur with the assertions that have been made by Russell (2010). Russell noted that there are quite a number of strategies that can be applied in the teaching of students with HI to ensure that they benefit maximally from the content being presented to them. Some of the general strategies include the teacher to face the class while speaking. This is by ensuring that the student and the interpreter (if present) can see him/her while he/she lectures. In addition, the teacher should avoid lecturing or giving out procedural information while handing out papers or other instructional materials. Losing eye contact with the student may also mean the loss of information for the student. Moreover, horse shoe-shape seating arrangements offer students who are deaf or hard of hearing the best advantage for seeing all class participants. This is a significant change to the normal classroom sitting arrangement whereby desks are arranged in rows. In case desks are arranged in rows, the teacher should keep front seats open for students who are deaf or hard of hearing and their interpreters.

4.4.2 Perceptions of Teachers Towards Students with HI

The respondents were asked to rate the statements on perceptions of teachers towards students with HI. Table 4.8 shows the summary of the results.

Table 4.8: Perceptions of Teachers Towards Students with HI

perceptions of teachers towards students with HI	1	2	3	4	5	Man	Std.
Most teachers expect less or do not encourage full participation of students with HI in the classroom	41.6	43.4	7.1	3.5	4.4	1.85	1.00
Most teachers often have lower academic and behavioural expectations of students with HI than of hearing peers at the institute	50.4	33.6	.9	9.7	5.3	1.85	1.17
Most teachers have adequate knowledge about the needs of students with HI	44.2	26.5	15	3.5	10.6	2.09	1.30
Most of our teachers have adequate experience of handling students with HI	43.4	34.5	9.7	7.1	5.3	1.96	1.14
Learn a lot from my teachers as my role models	40.7	42.5	11.5	5.3	-	1.81	.84

Source: Survey Data (2024).

The study findings indicate that 43.4 of the students agreed that most teachers expect less or do not encourage full participation of students with HI in the classroom with a mean of 1.85 and Std. deviation of 1.00. 50.4% strongly agreed that most teachers often have lower academic and behavioural expectations of students with HI than of hearing peers at

the institute with a mean of 1.85 and std. deviation of 1.17. 44.2% indicated strongly agreed that most teachers have adequate knowledge about the needs of students with HI with a mean of 2.09 and a std. deviation of 1.30. 43.4% strongly agreed that most of our teachers have adequate experience of handling students with HI with a mean of 1.96 and a Std. deviation of 1.14. 40.7% of the students indicated that they learn a lot from my teachers as my role models with a mean of 1.81 and a std. deviation of .84.

Studies carried out have shown that teacher expectations, which is influenced by perceptions, about the abilities of deaf students influence the level at which students perform in an inclusive class setup. For example, when teachers lower expectation or fail to encourage full participation in the classroom, this can result in feeling of helplessness and dependency (Antia, Stinson & Gaustad, 2002). In addition, a number of studies have shown that teachers often have lower academic and behavioural expectations of deaf and hard of hearing students than of their hearing peers (Gaustan, 1999; Sari, 2007; Thumann-Prezioso, 2005).

4.4.3 Kenya Sign Language and Performance of Students with HI

The respondents were asked to rate the statements on the use of Kenya Sign Language for academic instructions influence on academic performance of students with HI. Table 4.9 shows the summary of the results.

Table 4.9: Use of Kenya Sign Language for Academic Instructions

Use of Kenya Sign Language for academic instructions influences academic performance of students with HI	1	2	3	4	5	Man	Std.
KSL is the language of academic instructions at this institute	44.2	29.2	5.3	8.8	12.4	1.71	1.11
Students with HI prefer the use of KSL for communication in and out of class	39.8	27.4	1.8	31.0	-	2.1	1.3
Most of our teachers are proficient in KSL	51.3	23.9	8.8	12.4	3.5	2.2	1.2
Use of KSL for communication is encouraged in class and outside class too	44.6	26.8	.9	18.8	8.9	1.9	1.2
Both teachers and students enjoy the use of KSL for communication	36.3	35.4	3.5.	17.7	7.1	2.2	1.3

Source: Survey Data (2024).

The findings of the study indicate that 44.2% of the students strongly agreed that KSL is the language of academic instructions at this institute with men of 1.71 and a std. deviation of 1.3. 39.8% of the students indicated that students with HI prefer the use of KSL for communication in and out of class with a mean of 2.1 and a std. deviation of 1.3. 51.3% strongly agreed that most of our teachers are proficient in KSL with a mean of 2.3 and std. deviation of 1.2. 44.6% strongly agreed that use of KSL for communication is encouraged in class and outside class too with a mean of 1.9 and std. deviation of 1.2. 36.3% of the students strongly agreed that both teachers and students enjoy the use of KSL for communication with a mean of 2.3 and standard deviation of 1.3.

A study by Lewis (2009) show that KSL is used in thirty-two out of seventy-one institutions for students with HI in Kenya. This clearly shows a positive move towards the use of Kenyan Sign Language: a language that has been recognized as an official language for communication in Kenya by the Kenyan Constitution (2010). There is need

for further research on KSL. He recommends for studies on actions to enhance the use of KSL in teaching to improve performance of students with HI. Bunyasi (2010) adds that teachers' skills in KSL are inadequate and that there is lack or insufficient resources in classes for students with HI.

4.4.4 Effect of Teacher Characteristics on Academic Performance of Students with HI

The study sought to investigate the effect of teacher characteristics (teacher training, instructional strategies, and perceptions of teachers and use of KSL) on the dependent variable which was the academic performance of students with HI at KTTID. The study used the KNEC system to categorize the performance of students into three levels Good, Fair and Fail. The categorical dependent variable allowed the use of multinomial logistic regression. Performance category Good Grades was used as the reference group. Table 4.10 shows the multinomial logistic regression results.

Table 4.10 Multinomial Logistic Regression

Performance	a	B	Std. Error	Wald	Df	Sig.	Exp(B)
Either 4, 5 or 6	Intercept	-10.787	2.928	13.571	1	0.000	
(Fair Grades)	TT	0.912	0.754	1.209	1	0.006	2.49
	TS	1.217	1.15	1.051	1	0.290	0.296
	ATT	3.421	1.111	3.089	1	0.002	0.603
	KSL	2.074	1.254	1.654	1	0.018	7.958
Either 7, 8 or 9	Intercept	-17.045	3.588	22.572	1	0.000	
(Fail)	TT	0.932	0.884	1.051	1	0.020	2.54
	TS	1.06	1.243	0.852	1	0.394	0.346
	ATT	5.085	1.341	3.791	1	0.000	1.519
	KSL	2.569	1.433	1.793	1	0.023	3.049

The reference category is: Good Grades.

Table 4.6 reveals the relationship between teacher characteristics and academic performance of students at KTTID. From the results an increase in teacher training in SNE increases the odds of students getting categorized as Fair Grades rather than Good Grades by 2.49. The results also reveal that an increase in teachers training in SNE 0.912 (Sig.=0.06) times likely to result to academic performance category of Fair Grades rather than Good Grades. Additionally, an increase in teacher training in SNE increases the odds of students getting categorized as Fail rather than Good Grades by 2.54. The results also reveal that an increase in teachers training in SNE is 0.932(Sig. =0.02) times likely to result to academic performance category of Fail rather than Good Grades. The results

imply that an increase in teachers training in SNE is associated with increase in academic performance.

The results also revealed that improvement in instructional strategies increases the odds of students getting categorized as Fair Grades rather than Good Grades by 0.296. The results also indicate that improvement of instructional strategies by one unit is1.217 (Sig. =0.290) times likely to result to academic performance category of Fair Grades rather than Good Grades. However, this relationship is insignificant. Additionally, an improvement in training strategies increases the odds of students getting categorized as Fail rather than Good Grades by 0.346. The results also reveal that improvement of instructional strategies in one unit is 1.06 (Sig.=0.394) times likely to result to academic performance category of rather than Good Grades. The results imply that improvement in instructional strategies is associated with increase in academic performance. However, this relationship is insignificant as revealed by the p-values of the coefficients. From this analysis, researcher therefore failed to accept the null hypothesis.

The table also revealed that an improvement in teachers' perceptions increases the odds of students getting categorized as Fair Grades rather than Good Grades by 0.603. The results also indicate that improvement of teacher's perceptions by one unit is 3.421 (Sig. =0.002) times likely to result to academic performance category of Fair Grades rather than Good Grades. Additionally, an improvement on teacher perceptions increases the odds of students getting categorized as Fail rather than Good Grades by 1.519. The results also reveal that improvement of teaching perceptions in one unit is 5.085

(Sig.=0.000) times likely to result to academic performance category of rather than Good Grades. The results imply that improvement in instructional strategies is associated with increase in academic performance.

Additionally, the results indicated that using KSL increases the odds of students getting categorized as Fair Grades rather than Good Grades by 3.049. The results also indicate that use of KSL is 2.569 (Sig. =0.023) times likely to result to academic performance category of Fair Grades rather than Good. Additionally, use of KSL increases the odds of students getting categorized as Fail rather than Good Grades by 7.958. The results also reveal that use of KSL is 2.074 (Sig. =0.013) times likely to result to academic performance category of Fail rather than Good Grades. The results imply that use of KSL is associated with increase in academic performance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter covers the summary and conclusion of the study in line with the study specific objectives. The chapter also gives recommendations to theory, policy and practice.

5.1 Summary of the Study

The study sought to investigate the effect of teacher characteristics on academic performance of students with HI at KTTID with an aim of finding ways to improving the academic performance of the institution. The study adopted survey research design. This was preferred because it is the best method of collecting information. Questionnaires were used to collect the data which was analyzed descriptively and by use of multinomial logistic regression to examine the association between the independent and dependent variables.

The descriptive results showed that the bulk of the respondents agreed to the statements regarding teacher training in SNE. Additionally, multinomial results revealed that an increase in teachers training in SNE 0.912 (Sig. =0.06) times likely to result to academic performance category of Fair Grades rather than Good Grades. The results also reveal that an increase in teachers training in SNE is 0.932 (Sig. =0.02) times likely to result to academic performance category of Fail rather than Good Grades.

Regarding instructional strategies, majority of the respondents agreed to the statement on instructional strategies. This was supported by multinomial logistics results which indicated that improvement of instructional strategies by one unit is 1.217 (Sig. =0.290) times likely to result to academic performance category of Fair Grades rather than Good Grades. However, this relationship is insignificant. The results also reveal that improvement of instructional strategies in one unit is 1.06 (Sig. =0.394) times likely to result to academic performance category of Fail rather than Good Grades.

Further the results showed that the perceptions of the teachers were not as shown by the statements to which a bulk of the respondents agreed to. The multinomial results revealed that improvement of teacher's perceptions by one unit is 3.421 (Sig. =0.002) times likely to result to academic performance category of Fair Grades rather than Good Grades. The results also reveal that improvement of teaching perceptions in one unit is 5.085 (Sig. =0.000) times likely to result to academic performance category of Fail rather than Good Grades.

The results also revealed that a bulk of the respondents agreed that teachers at KTTID use KSL. Multinomial logistics results showed that use of KSL is 2.569 (Sig. =0.023) times likely to result to academic performance category of Fair Grades rather than Good Grades. The results also reveal that use of KSL is 2.074 (Sig. =0.013) times likely to result to academic performance category of Fail rather than Good Grades. The results imply that use of KSL is associated with increase in academic performance.

5.2 Conclusion

Regarding teachers being trained in SNE, effective instructional strategies, good perceptions of the teachers and use of KSL being employed at KTTID and with the agreement levels being high on these teaching characteristics, the expectations are that students should perform better than average. However, multinomial logistic regression results revealed that improvement in teacher training in SNE is more likely result to better academic performance of the students. Additionally, an improvement in perceptions of the teachers is more likely to result to better academic performance while use of KSL is associated with high likelihood of better academic performance of students at KTTID.

Regarding instructional strategies, majority of the respondents agreed to the statement on instructional strategies. This was supported by multinomial logistics results which indicated that there is an improvement of instructional strategies that is likely to result into academic performance of the students. For instance, from the study, it is noted that there is effective use of visual aids and materials in class by the teacher and thus indicating how effective the strategies of teachings are within the institution. Other instructional strategies that are used by the teachers include facing the students, the sitting arrangement is horse-shoe shaped and the curriculum that is used is based on the HI.

Further the results showed that perceptions of the teachers were not as shown by the statements to which majority of the respondents agreed to. Any improvement of teacher's perceptions is likely to result to academic performance. Additionally, the study concludes

that improvement of teaching perceptions is likely to result to academic performance by the learners. For instance, the strongest aspect of perceptions that is concluded from the study is that most of the teachers have adequate knowledge about the needs of students with HI. Other aspect of teachers' perceptions that common in the institution is the adequate application of reinforcement and punishments and also experience of the teachers makes them have positive perceptions towards teaching.

Regarding the use of the KSL, it is concluded that a bulk of the teachers' respondents at KTTID use KSL. The use of KSL is likely to result to academic performance. Also, KSL is application is likely to result to academic performance. KSL is the main language that is applied in the institution when it comes to teaching. Teachers are also proficient when it comes to KSL. Teachers and learners love using KSL and there is a better understanding by the learners when it comes to the use of the KSL. Hence, in conclusion, the use of KSL is associated with increase in academic performance.

5.3 Recommendations

Putting the findings of the study into consideration, the following recommendations have been made;

a) Teachers should be trained to have more confidence when it comes to the use of KSL in order to make them effective in their teachings.

b) There is the need to ensure that there is the improvement of sitting arrangement in classes by ensuring that there is the adoption of the horse-shoe shaped method based on the advantage that it has.

c)   In terms of perceptions of the teachers, teachers need to have higher academic and behavioral expectations of students with HI than of their hearing peers in order to create a learning environment that is positive.

d)   Teachers should ensure that the use of KSL for academic instructions makes it easy for students with HI to understand academic content.

5.4 Suggestions for Further Research

The researcher has put forward the following areas to be considered for further research;

a)   There is need to investigate factors that affect the training of the teachers on the use of KSL.

b)   Assessment of effective instructional strategies should be done.

c)   Factors affecting the perceptions of the teachers in relation to using KSL should be investigated.

d)   Ways of making KSL easier to use among the learners should be investigated.

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APPENDIX I: QUESTIONNAIRE FOR TEACHERS

I am Nixon Imbwaga, a master's student at Maasai Mara University undertaking my educational research in the field of special education. Please feel free to give your honest responses. Answer the questions by selecting the appropriate answer. The information given will be treated with confidentiality and used for academic purposes only.

SECTION A: GENERAL INFORMATION

1.   Your gender

a.   Male   [ ]

b.   Female   [ ]

2.   Indicate the category of your age group

a.   18 - 30 years   [ ]

b.   31 - 45 years   [ ]

c.   Above 45 years   [ ]

3.   Select the highest level of education you have attained.

a.   Primary   [ ]

b.   Secondary   [ ]

c.   College   [ ]

d.   University   [ ]

4.   Select number of year(s) you have been a teacher at Karen Technical Training Institute for the Deaf?

a.   0 – 3 years   [ ]

b.   4 – 7 years   [ ]

c.   8 and above years   [ ]

SECTION B

Please put a tick in the appropriate box

1 – Strongly Agree, 2 – Agree 3 – Undecided 4 – Disagree   5   –   Strongly

Disagree

Item	1	2	3	4	5
Effect of teacher training in SNE on academic performance of students with HI					
1. Most of the teachers at the institute are trained in SNE					
2. Most of the teachers at the institute are confident handling students with HI					
3. Most of the teachers at the institute have positive perceptions towards students with HI					
4. Most of the teachers at the institute provide positive feedback to students					
5. Teachers trained in Special Needs Education generally post good grades					

Effect of instructional strategies on academic performance of students with HI					
6. Teachers always face the class while speaking or/and using sign language					
7. While using an interpreter both the interpreter and teacher are always close and both face the students					
8. Teachers use a lot of visual aids and materials in class					
9. In most classes the sitting arrangement is horse-shoe shaped					
10. The curriculum used at this institute is adapted for the HI					
11. Teachers who apply SNE strategies in class post good grades					
perceptions of teachers towards students with HI					
12. Most of the teachers expect less or do not encourage full participation of students with HI in the classroom					
13. Most of the teachers often have lower academic and behavioural expectations of students with HI than of their hearing peers					
14. Most of the teachers have adequate knowledge about the needs of students with HI					
15. Teachers adequately use reinforcement and punishment at the institute					
16. Most of the teachers have adequate experience of handling students with HI					
17. Most of the teachers are good role models to students with HI					
Use of Kenya Sign Language for academic instructions					

18. KSL is the main language that is used for academic instructions at the institute					
19. Most of the teachers at the institute are proficient in KSL					
20. Use of KSL for communication is encouraged in class and outside class too					
21. Both teachers and students enjoy the use of KSL for communication					
22. Use of KSL for academic instructions makes it easy for students with HI to understand academic content					

THANK YOU FOR YOUR COOPERATION

I am Nixon Imbwaga, a master's student at Maasai Mara Univesity undertaking my educational research in the field of special education. Please feel free to give your honest responses. Answer the questions by selecting the appropriate answer. The information given will be treated confidentially and used for academic purposes only.

SECTION A

1.   Your gender

Male   [ ]

Female   [ ]

2.   Select your status of hearing

Hearing (below 21 dB)   [ ]

Hearing Impaired (above 21 dB)   [ ]

3.   What was your average grade in the last term's internal exams?

Grade (As per KNEC grading system)		
Either 1, 2 or 3 (Good Grades)	Either 4, 5 or 6 (Fair)	Either 7, 8 or 9 (Fail)

SECTION B

Please put a tick the appropriate box

1 – Strongly Agree,   2 – Agree   3 – Undecided

4 – Disagree   5 – Strongly Disagree

85

Item	1	2	3	4	5
Effect of teacher training in SNE on academic performance of students with HI					
1. Most of the teachers at the institute respond to students needs in class well					
2. Most of the teachers at the institute are confident handling students with HI					
3. Most of the teachers at the institute don't discriminate against students with HI					
4. Most of the teachers at the institute provide positive feedback to students					
5. Most teachers always face the class while speaking or signing					
Effect of instructional strategies on academic performance of students with HI					
6. While using an interpreter both interpreter and teacher are always close and both face the students					
7. Teachers use a lot of visual aids and materials in class					
8. In most classes the sitting arrangement is horse-shoe shaped					
9. At this institute students with HI are not expected to achieve exactly the same competency level, in all academic areas, as their peers without HI at the same class					
10. At this institute students with HI are not taught exactly the same content as their peers without HI at the same class					

perceptions of teachers towards students with HI					
11. Most teachers expect less or do not encourage full participation of students with HI in the classroom					
12. Most teachers often have lower academic and behavioural expectations of students with HI than of hearing peers at the institute					
13. Most teachers have adequate knowledge about the needs of students with HI					
14. Most of our teachers have adequate experience of handling students with HI					
15. I learn a lot from my teachers as my role models					
Use of Kenya Sign Language for academic instructions influences academic performance of students with HI					
16. KSL is the language of academic instructions at this institute					
17. Students with HI prefer the use of KSL for communication in and out of class					
18. Most of our teachers are proficient in KSL					
19. Use of KSL for communication is encouraged in class and outside class too					
20. Both teachers and students enjoy the use of KSL for communication					

THANK YOU FOR YOUR COOPERATION

APPENDIX IV: RESEARCH AUTHORIZATION
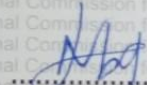
APPENDIX V: RESEARCH PERMIT

THIS IS TO CERTIFY THAT:
MR. NIXON IMBWAGA SHIVAYANGA
of MAASAI MARA UNIVERSITY,
24785-502 Nairobi,has been permitted
to conduct research in Nairobi County

on the topic: EFFECTS OF TEACHER
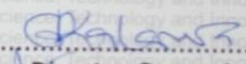CHARACTERISTICS ON ACADEMIC
PERFORMANCE OF LEARNERS WITH
HEARING IMPAIRMENTS AT KAREN
TECHNICAL TRAINING INSTITUTE FOR
THE DEAF, NAIROBI COUNTY, KENYA

for the period ending:
23rd July,2020

Permit No : NACOSTI/P/19/19756/31250
Date Of Issue : 25th July,2019
Fee Recieved :Ksh 1000

Applicant's
Signature

Director General
National Commission for Science,
Technology & Innovation

APPENDIX VI: KTTD ACADEMIC PERFOMANCE IN KNEC FOR THE

YEARS 2017 AND 2018

KAREN TECHNICAL TRAINING INSTITUTE FOR THE DEAF

KNEC JULY 2018 EXAMINATIONS RESULTS ANALYSIS

S/No.	DEPARTMENTS	NUMBER OF CANDIDATES			NUMBER OF CANDIDATES WHO PASSED		
		MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1	INFORMATION COMMUNICATION TECHNOLOGY	12	12	24	10	5	15
2	BUSINESS STUDIES	6	13	19	1	6	7
3	ELECTRICAL & ELECTRONICS ENGINEERING	22	2	24	4	0	4
4	INSTITUTIONAL MANAGEMENT	27	44	71	16	23	39
5	BUILDING CONSTRUCTION	22	5	27	15	3	18
6	GENERAL AGRICULTURE	4	12	16	3	11	14
7	CLOTHING TECHNOLOGY	4	15	19	3	8	11
8	AUTOMOTIVE ENGINEERING	5	0	5	1	0	1
	TOTAL	102	103	205	53	56	109

TOTAL CANDIDATURE = 205

GRADE STATUS	PASS		FAIL		TOTAL
	MALE	FEMALE	MALE	FEMALE	
DEAF	4	5	14	9	32
HEARING	50	52	43	28	173
TOTAL	54	57	57	37	205

PERFORMANCE INDEX OF THE INSTITUTION

PERFORMANCE INDEX = NUMBER OF CANDIDATES WHO PASSED ÷ TOTAL NUMBER

OF CANDIDATES = **53.17%**

KAREN TECHNICAL TRAINING INSTITUTE FOR THE DEAF
KNEC NOVEMBER 2018 EXAMINATIONS RESULTS ANALYSIS

S/No.	DEPARTMENTS	NUMBER OF CANDIDATES			NUMBER OF CANDIDATES WHO PASSED		
		MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1	INFORMATION COMMUNICATION TECHNOLOGY	1	0	1	0	0	0
2	BUSINESS STUDIES	4	18	22	2	8	10
3	ELECTRICAL & ELECTRONICS ENGINEERING	35	5	40	24	4	28
4	INSTITUTIONAL MANAGEMENT	15	45	60	10	30	40
5	BUILDING CONSTRUCTION	12	0	12	7	0	7
6	GENERAL AGRICULTURE	10	3	13	7	4	11
7	CLOTHING TECHNOLOGY	2	11	13	1	4	5
8	AUTOMOTIVE ENGINEERING	11	0	11	9	0	9
9	CARPENTRY & JOINERY	10	0	10	9	0	9
	TOTAL	100	82	182	69	50	119

TOTAL CANDIDATURE = 182

GRADE STATUS	PASS		FAIL		TOTAL
	MALE	FEMALE	MALE	FEMALE	
DEAF	52	21	10	6	89
HEARING	20	27	17	29	93
TOTAL	72	48	27	35	182

PERFORMANCE INDEX OF THE INSTITUTION

PERFORMANCE INDEX = NUMBER OF CANDIDATES WHO PASSED ÷ TOTAL NUMBER OF CANDIDATES = 65%

KAREN TECHNICAL TRAINING INSTITUTE FOR THE DEAF

NOVEMBER 2017 KNEC EXAMINATION RESULTS ANALYSIS

S/No.	DEPARTMENTS	NUMBER OF CANDIDATES			NUMBER OF CANDIDATES WHO PASSED		
		Male	Female	Total	Male	Female	Total
1	INFORMATION COMMUNICATION TECHNOLOGY	6	2	8	2	1	3
2	AUTOMOTIVE ENGINEERING	7	0	7	5	0	5
3	CARPENTRY & JOINERY	3	0	3	2	0	2
4	BUSINESS STUDIES	5	13	18	0	2	2
5	ELECTRICAL AND ELECTRONICS ENGINEERING	22	5	27	10	1	11
6	INSTITUTIONAL MANAGEMENT	21	39	60	21	37	58
7	BUILDING CONSTRUCTION	4	0	4	2	0	2
8	GENENERAL AGRICULTURE	6	3	9	5	3	8
9	CLOTHING TECHNOLOGY	1	17	18	1	9	10
	TOTAL	75	79	154	48	53	101

TOTAL CANDIDATURE = 154

	PASS		FAIL		TOTAL
	Male	Female	Male	Female	
DEAF	24	9	12	19	64
HEARING	21	43	18	8	90
TOTAL	45	52	30	27	154

PERFORMANCE INDEX OF THE INSTITUTION

Performance = Number of Candidates who passed (101) / Total Number of Candidates (154)

Index = 65.59%

KAREN TECHNICAL TRAINING INSTITUTE FOR THE DEAF

JULY 2017 KNEC EXAMINATION RESULTS ANALYSIS

S/No.	DEPARTMENTS	NUMBER OF CANDIDATES			NUMBER OF CANDIDATES WHO PASSED		
		Male	Female	Total	Male	Female	Total
1	INFORMATION COMMUNICATION TECHNOLOGY	05	02	07	01	01	02
2	CARPENTRY & JOINERY	02	00	02	00	00	00
3	BUSINESS STUDIES	03	07	10	00	02	03
4	ELECTRICAL AND ELECTRONICS ENGINEERING	14	01	15	01	00	00
5	INSTITUTIONAL MANAGEMENT	10	26	36	02	11	13
6	BUILDING CONSTRUCTION	10	00	10	04	00	04
7	GENENERAL AGRICULTURE	02	05	07	01	05	06
8	CLOTHING TECHNOLOGY	00	01	01	00	01	01
	TOTAL	46	42	88	09	20	29

TOTAL CANDIDATURE = 88

	PASS		FAIL		TOTAL
	Male	Female	Male	Female	
DEAF	1	1	9	4	15 (17.05%)
HEARING	8	21	30	14	73 (82.95%)
TOTAL	9	22	39	18	88 (100%)

PERFORMANCE INDEX OF THE INSTITUTION

Performance = Number of Candidates who passed (29) / Total Number of Candidates (88)
Index = 32.95%

93