THE INCLUSION OF STUDENTS WITH VISUAL IMPAIRMENT IN TERTIARY INSTITUTIONS: A CASE STUDY OF TEACHERS' TRAINING COLLEGE AT MACHAKOS, KENYA

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Submitted in accordance with the requirements for the degree of Doctor of Education in the subject INCLUSIVE EDUCATION

at the

UNIVERSITY OF SOUTH AFRICA

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THE INCLUSION OF STUDENTS WITH VISUAL IMPAIRMENT IN TERTIARY INSTITUTIONS: A CASE STUDY OF TEACHERS' TRAINING COLLEGE AT MACHAKOS, KENYA.

I declare that the above titled thesis is my original work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

I further declare that I submitted the thesis to originality checking software and it falls within the accepted requirements for originality.

I further declare that I have not previously submitted this work, or part of it, for examination at Unisa for another qualification or at any other higher education institution.

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SIGNATURE   DATE

This thesis is submitted with the approval of my supervisors;

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DEDICATION

This thesis is dedicated to my family members. Firstly, my children, Linet, Tom, Mercy, Fredrick and Everlyne. Secondly to my dear wife, Milka, with whom I have shared many challenges in life. Lastly to my son Fredrick Godinel Otieno Odhiambo whose special needs and disability condition has made me become more sensitive to needs of other people in the society.

ACKNOWLEDGEMENT

ABSTRACT

The study investigated the inclusion of students with visual impairments (VI) at tertiary institutions in Kenya. It mainly focused on the role played by inclusive education policy, educational resources, environmental modification as well as pedagogical strategies in the inclusion of students with VI. The study contributes to the existing body of knowledge by highlighting challenges encountered by both students with VI and their lecturers. The findings of the study are likely to play a significant role in improving the accommodation of students with VI in learning institutions. The study used symbolic interactionism theory and qualitative approaches that employed case study research design to collect data from participants drawn from a teacher's training college based in Machakos County, Kenya. The study relied on the use of an open-ended qualitative questionnaire, semi-structured interviews, a focus group interview and an infrastructural observation checklist to collect data from participants comprising 3 administrators, 7 lecturers, 15 students with visual impairment (VI), 5 students without VI and 2 support staff from the tertiary institution. Qualitative data collected from the participants was analysed by identifying words and phrases representing emerging themes. The study found that lecturers used a variety of methods to make the curriculum accessible to students with VI, such as preparation of hand-outs in Braille versions; use of large print; and preparation of tactile maps and diagrams. Also, it was found that the tertiary institution utilised various assistive devices and ICT resources to facilitate access to curriculum material for students with VI. However, the varied resources available for students with VI were overstretched by the existing number of students. However, on the bright side, the study found that there was a conducive social environment in the institution that supported students with VI. Finally, the researcher made recommendations regarding strategies that can be used to improve the inclusion of students with VI at tertiary institutions. For instance, it was recommended that the tertiary institution procure more assistive devices for students with VI especially the modern Braille writing devices such as orbit readers, note takers and embossing machines.

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ACRONYMS AND ABBREVIATIONS

ADL   Activities of Daily Living

CBC   Competency Based Curriculum

CCTV   Closed Circuit Television

CDC   Centre for Disease Control

CRPD   Convention on the Rights of Persons with Disabilities

DECTE   Diploma in Early Childhood Teacher Education

DPTE   Diploma in Primary Teacher Education

EARC   Educational Assessment and Resource Centre

FPE   Free Primary Education

GoK   Government of Kenya

JAWS   Job Access with Windows

KIEP   Integrated Education Program

KSB   Kenya Society for the Blind

KISE   Kenya Institute of Special Education

LRC   Learning Resource Centres

MOE   Ministry of Education

MOEST   Ministry of Education Science and Technology

NGEC   National Gender and Equality Commission

NVDA   Non-Visual Desktop Speech Access

VI   Visual impairment

CHAPTER ONE

ORIENTATION TO THE STUDY

1.1 INTRODUCTION AND BACKGROUND OF THE STUDY

This chapter begins with a description of the background of the study, rationale of the study and review of related literature from various scholars on the topic of the study. Then it provides a description of the statement of the problem, research questions, purpose of the study and the methodology used in the study. This is followed by a paragraph on the credibility and trustworthiness of the study and the research ethics. The chapter then delineates limitations and delimitations of the study, definitions of key concepts used in the study and explanation of the outlines of the subsequent chapter of the thesis. Conclusion of the chapter then follows.

There has been a paradigm shift in the education of students with disabilities including those with visual impairments from segregated special institutions to regular institutions all over the world. This shift popularly known as inclusion has witnessed more students with disabilities being educated in the regular classrooms in the last 50 years. The proponents of inclusion have advanced several reasons to support it.

Scholars have defined inclusion in varied ways. Francisco, Hartman and Wang (2020) defined inclusion as providing to all students, including those with significant disabilities, equitable opportunities to receive effective educational services, with needed supplementary aids and support services, in age-appropriate classes in their neighborhood schools, in order to prepare students for productive lives as full members of society. On the other hand, UNESCO (2023) defined inclusive education as an approach in education in which each individual students needs are taken into account and that all students participate and achieve together. Accordingly, the philosophy acknowledges that all children can learn and every child has unique characteristics, interest, abilities and learning needs. The above definitions of inclusive education resonate well with ideas of Chauhan and Mantry (2018) who defined inclusive education as a process of addressing and responding to diversity of needs of all learners through

increasing participation and reducing exclusion in education. Consequently, inclusive education is a commitment to seeing education as fundamental development of both individual and the society. This study will look into how policy, pedagogical and environmental factors play a role in influencing inclusive educational practices in societies.

One of the reasons advanced to support inclusion is that students with disabilities have a right to live and participate in the activities of their societies as their regular peers (McCarthy & Shevlin, 2017; Henkebo, 2018; Zelelew, 2019). Furthermore, they argue that regular institution placement represents the least restrictive environment which is a requirement of the law (Hornby, 2015). The opponents of the debate, on the other hand, have argued that students with disabilities are best served in environment with high concentration of resources found in special institutions (Papuda-Doliska, 2017). However, inclusion of students with disabilities, including those with visual impairment (VI), in regular institutions require well-coordinated preparations if they are to participate fully in all the activities of those regular institutions. Otherwise, mere placement of students with disabilities in regular institutions if not coordinated may result in the students not getting the necessary services and may not fully benefit in the institution's programs.

Kenya has not been left behind in the international trust to educate students with disabilities in the regular institutions. For instance, in 2003 the government introduced Free Primary Education (FPE). Consequently, students were no longer required to pay school fees and other levies to attend school. In addition, the government was to provide the students with the learning and teaching materials. The FPE has enabled thousands of children from poor families and vulnerable backgrounds including those with disabilities to attend schools without interruptions (UNESCO, 2005).

For instance, the gross enrolment of students in primary schools was 5.9 million but rose to 7.6 million in 2003 (UNESCO, 2006). However, as good as the move by the government was, the FPE program has encountered several challenges such as teacher shortage, overcrowded classes and insufficient teaching and learning materials (UNESCO, 2006). These challenges have adversely affected students' learning especially students with disabilities who generally require individualized attention from the

teachers. According to KISE (2018), data on students with disabilities in Kenya is incoherent, limited in quantity, quality and scope. Whilst MOEST (2016), reported that Kenya has five special secondary schools, six special primary schools and 19 units in regular schools serving most of the students with VI, a recent National Survey on the prevalence of children with disabilities and Special Needs Education in Kenya found that 671,205 children are visually impaired of which 596,701 (88.9%) were enrolled in 158 inclusive and 66 special schools (KISE, 2018). However, there is limited empirical data on the number of students with VI enrolled in tertiary institutions.

The inclusion of students with visual impairments in the regular classrooms has attracted several scholars. For instance, Ajuwon, Sarraj, Shirley, Lechtenberger and Zhou (2015), studied the perception of pre-service teachers towards inclusion of students with VI in the regular classrooms.

The study used modified version of the pre-service inclusion scale and collected data from 91 respondents from three universities across United States before the introductory and after the completion of the course. According to this study, expectation of teachers influences the achievement of the students as well as their self-esteem and behavior. Thus, if teachers' perception towards inclusion of students with VI is negative, the inclusion of such students in regular institutions may not translate into positive experiences for the children (Ajuwon et al., 2015). Likewise, pre-service teachers with positive perception towards inclusion of students with visual impairments in regular classrooms will result into positive outcomes for the students. The study found that regular education pre-service teachers are more reticent to include students with VI in their classrooms than the specially trained professionals. Whilst the study by Ajuwon et. al (2015) had looked at the pre-service teachers' perception towards inclusion of students with VI in the regular classroom in western world, the present study will contribute to knowledge by looking at the challenges of inclusion of students with VI in Kenyan context which is likely to be characterized by limited resources as compared to Western countries which are endowed with immense resources.

Zelelew (2018), studied the inclusion of students with VI with emphasis on the challenges encountered by the students at Addis Ababa University, Ethiopia. The study adopted

interpretive paradigm and qualitative research approach to get the opinion of the respondents regarding the challenges encountered by students with VI at the university. The study engaged in an extensive review of related literature on varied paradigms and theories related to disabilities and inclusion. The study noted that most institutions of higher learning in Ethiopia had adopted a medical or deficit model that focuses on the impairments of persons with disabilities to explain the difficulties they experienced in education (UNESCO, 2001).

However, the study used social and critical disability theory to study inclusive educational practices of students with VI. The social model and critical disability theory looks at the whole educational system rather than the impairment of the person as a possible cause of educational difficulties and poor academic achievement (Zelelew, 2018). The study analyzed the international and national laws that form the basis of inclusive education in Ethiopia. The key findings of the study include: lack of enabling policies and laws at departmental and institutional levels; weak support services; inappropriate curriculum; lack of appropriate resources and inappropriate pedagogical strategies for teaching students with visual impairments (Zelelew, 2018).

While the study by Zelelew (2018) had looked at inclusion of students with visual impairment at the Addis Ababa University, Ethiopia, the present study will focus on the challenges of including students with visual impairments in tertiary institutions in Kenya. These institutions are less complex in their structures as compared to a public university which is the focus of study by Zelelew (2018). Consequently, they are likely to attract less funding from the government; and hence have less resources.

Agesa (2014), studied the challenges faced by students with VI in the inclusive setting. The study made an intensive review of related literature on varied challenges exposed to students with VI in the environments. According to the study, VI exposes the person affected to three disadvantages namely limitation on the range and variety of experiences; limitation on the ability to get about; and the limitation to control the environment and oneself. The main findings of the study included lack of financial and material support for students with VI in the regular classrooms. The study attributed lack of material and

financial support to negative attitudes of the parents of the children. It further cited lack of appropriate equipment and infrastructure for students with VI (Maindi, 2018).

Furthermore, it found that schools did not have adequate number of specialist teachers for students with VI. In addition, the study cited lack of support to students with VI. The study mainly looked at the challenges faced by students with VI in regular primary schools in one county in Kenya; the present study aims to study the challenges of including students with VI in the tertiary institutions in Kenya. Tertiary institutions are more complex in their structure compared to regular primary schools, which were the main focus of study by Agesa (2014). Furthermore, tertiary institutions have courses with varied breadth and depth compared to subjects taught in regular primary schools.

1.2 RATIONALE FOR THE STUDY

Visual impairment has serious educational implications on the individual concerned. A study by Omede (2015) noted that VI interferes with one's ability to receive equal educational opportunities and to be fully included in the society. Thus, students with VI are faced with myriad of challenges in tertiary institutions which include but not limited to architectural barriers; negative attitude of the public; inadequate materials and equipment; and high cost of procuring teaching and learning materials (Omede, 2015). Other scholars have pointed out that VI is a major contributor to poor academic performance among students (McCarthy & Shevlin, 2017; Stone, Kay & Reynolds, 2019). Therefore, institutions of learning need to put in place appropriate adjustments to enable students with VI to participate in the academic and social activities of the institutions in order to develop their full potential. Otherwise, mere placement of students with VI in tertiary institutions may result into students with VI being excluded in the activities of the institutions rather than being included (Bhan, 2012; Radojichikji, 2018).

The main reason for undertaking this study, therefore, was to investigate the challenges experienced by administrators, lecturers, students with VI, and students without VI in the inclusion of students with VI in tertiary institution in Machakos County. Consequently, the study will come up with appropriate strategies to overcome the challenges and hence to improve the accommodation of students with VI in such institutions.

1.3 STATEMENT OF THE PROBLEM

Inclusion is a philosophy that advocates for the provision of equal opportunities to all persons in the community including those with disabilities (Mwoma, 2017). Learning institutions have been recognized as an important vehicle in the promotion of inclusive society. Hence, the philosophy advocates that students with disabilities be educated in regular institutions together with their regular peers. This requires institutions to make infrastructural adjustments to accommodate students with disabilities including those with VI.

In the Kenyan context, many students with disabilities including those with VI have undertaken training in varied tertiary institutions together with able-bodied peers (Elder, 2015). In most cases, the institutions have old infrastructure whose architectural designs do not meet the needs of students with disabilities including those with VI (Zelelew, 2019). In some cases, the institutional communities have not acquired positive attitude towards members of the communities with disabilities including those with VI.

Although inclusion has been known to benefit students with disabilities, scholars have warned that mere placement of students with disabilities in institutions without making the necessary infrastructural adjustments may not benefit the students with disabilities including those with VI. Instead, students with disabilities may end up being excluded from the institutional activities, and thus negating the goal of inclusion (Bhan, 2012; Fast, 2018). There are several tertiary institutions that include students with VI in their programs in Kenya, yet few studies have been done in the institutions to determine the status of students with VI in the programs in terms of gaps and challenges.

1.4 PURPOSE OF THE STUDY

The purpose of the study was to investigate the challenges of including students with VI in a tertiary institution in Kenya and formulate strategies to overcome them. Students with VI, Students without VI and lecturers have varied challenges and experiences with inclusion which should identified and understood. Consequently, the study intended to improve service deliver to students with VI in the tertiary institution.

1.4.1 Aim of the Study

This study aimed at investigating the inclusion of students with VI at tertiary institutions.

1.4.2 Objectives of the Study

The research objectives addressed by the study were:

- To explore the current strategies and resources used by the tertiary institutions to make curriculum accessible to students with visual impairments
- To examine the environmental modifications done in the tertiary institutions to accommodate students with visual impairments
- To determine the existing policies in the tertiary institutions that guide the inclusion of students with visual impairments
- To develop strategies to improve inclusion of students with visual impairments in tertiary institutions.

1.4.3 Main Research Questions

The main research question addressed by the study was: What are the factors influencing the inclusion of students with visual impairments in tertiary institutions?

1.4.4 Sub question of the Study

The sub questions addressed by the study were as follows:

- What current strategies and resources are used by the tertiary institutions to make curriculum accessible to students with visual impairments?
- What environmental modifications have been done in the tertiary institutions to accommodate students with visual impairments?
- What policies exist in the tertiary institutions that guide the inclusion of students with visual impairments?
- What strategies can be used to improve inclusion of students with visual impairments in the tertiary institutions?

1.5 THEORETICAL FRAMEWORK

This study was guided by Blumer's (1969), theory of symbolic interaction in an attempt to study the experiences of including students with VI in tertiary institutions in Kenya. The theory is founded on three main premises. The first premise stipulates that human beings act towards things in the environment on the basis of meaning they have assigned them. Accordingly, meaning that people attach to things in their social and physical environment is central to understanding their behaviour.

The second premise of the theory is that people derive meaning out of social interaction with one another, and language is the vehicle that facilitates that interaction. The third premise of symbolic interaction is that thought modifies each individual's interpretation of the meaning she/he attaches to the things in the environment.

The three premises of Blumer's theory of symbolic interaction had shaped the initial thinking regarding the nature of the guiding questions to be asked in the study. The guiding questions mainly focused on four major areas that affect the inclusion of students with VI in tertiary institutions, namely: strategies and resources used to access to curriculum; modification of the environment to accommodate student with VI; policies on inclusion; and strategies to improve inclusion of students with VI. Based on the above theoretical framework, the study was structured to enhance the understanding of the experiences of stakeholders concerning the inclusion of students with VI in tertiary institutions in Kenya.

It is important to note that the inclusion of students with VI in tertiary institutions will accord members of those institutions with opportunity to interact with and have a better understanding of the challenges the students face and the opportunities available for them in those institutions. Consequently, the experiences of members of the tertiary institutions are likely to be shaped by the meaning they attach to inclusion of students with VI in their institutions which they can express in words. The use of language to express experiences of including students with VI in tertiary institutions is the basis for using qualitative approach in the research methodology of this study. Thus, members of

the tertiary institution will either develop positive or negative attitude towards inclusion of students with VI.

1.6 PROVISION OF EDUCATION TO STUDENTS WITH VI IN KENYA

The Constitution of Kenya (2010) underscores the provision of quality education and training as a fundamental right of all the citizens (MOE, 2016). Consequently, the government has come up with several strategies to ensure the attainment of quality, equity, relevance and access to education and training to all students including those with disabilities (MOE, 2018).

Furthermore, access to quality education and training has been recognized as vital in enabling individuals especially those with disabilities to transit to employment and become productive members of the society (McCarthy & Shevlin, 2017). It has been recognized that students with disabilities including those with VI face several challenges in education that may negate the attainment of quality tertiary education (MOE, 2018) and result in increased risk of poverty and social isolation (Handicap International, 2009; McCarthy & Shevlin, 2017).

1.6.1 Methods of Teaching Students with VI

One of the strategies of teaching students with VI is to provide them with concrete experiences (Fast, 2018; Stone, Kay & Reynold, 2019). Such concrete experiences enable students with VI to compensate for lack of sight that accounts for most of the information acquired in the environment (Malasig & Zhang, 2016). Several studies have shown that tutors of tertiary institutions with students with VI quite often use inappropriate teaching methods that do not suit these students (Sikanku, 2018; Penda, Ndhiovu & Kasonde-Ngandu, 2015; Mwangi & Orodho, 2014). The studies further revealed that the use of inappropriate methods, mainly used to teach sighted students, have resulted into low academic performance and participation in academic activities by students with VI.

Visual impairment restricts one's ability to learn through imitation (Radojichikji, 2018; Fast, 2018). Consequently, students with VI have difficulties acquiring some skills which are easily acquired by their sighted peers. Hence, there is need to put emphasis on learning by doing to enable students with VI to acquire skills which are easily acquired by sighted

students. Such skills like dressing, grooming and personal hygiene may need to be taught to students with VI (Radojichikji, 2018). Habulezi et al. (2016), asserts that paying attention to individual student with VI during the lesson helps the student to grasp the new information better.

Several scholars have emphasized the use of Individualized Education program to teach students with disabilities including those with VI (Fast, 2018; Hankebo, 2018). It is a program written for individual students that specifies the present level at which the student is functioning. In addition, it specifies the student's strengths and weaknesses. The document also states the long term and short term objectives to be achieved by the student. This strategy can be used to monitor progress made by individual student with VI in a specific program.

1.6.2 Lack of Access to Assistive Technologies

Assistive technologies are devices that enable students with VI to access information and hence participate in and benefit from educational programs (Wood, 2014). Several studies have demonstrated the role of assistive technologies to enhance the inclusion of students with VI in tertiary institutions (Hewett et al., 2018; Fast, 2018; Klingenberg, Holkesvik & Augestad, 2019). The use of equipment such as laptop, computers, talking calculators, note takers and closed-circuit television assist students with VI to participate in the activities of tertiary institutions (Stone, Kay & Reynold, 2019).

Despite their usefulness, lack of access to assistive technologies has been cited by many studies as a factor that hinders inclusion of students with VI in tertiary institutions (Otyola, Kibanja & Mugagga, 2017; Habulezi et al, 2016, Sikanku, 2018; Mboshi, 2018). In other circumstances, students with VI could not access internet to carry out research due to lack of adapted computers for use by students with VI (Habulezi et al, 2016).

1.6.3 Inadequate Equipment and other Resources used by Students with VI

Lack of appropriate specialist equipment used by students with VI has been cited as a major factor that impedes the inclusion of students with VI in many tertiary institutions (Otyola, Kibaga & Mugagga, 2017; Omede, 2015 & Mboshi, 2018). According to Eke,

Ugochukwu, Inyango and Ongbonya, (2015), there are specialist equipment used by students with VI for varied functions that include: magnifiers, electrical note takers, Braille translators and CCTV. These specialist equipment are expensive, and are not produced locally (Omede, 2015; Sikanku, 2018). Also, where some of these specialists equipment are available, they are grossly inadequate (Omede, 2015). Thus, many students with VI in many tertiary institutions are not able to function independently, safely and gracefully in the institutions' environment (Opie, 2018).

Students with VI especially those who are totally blind write in Braille (dotted system of writing). This system of writing relies on the use of Braille machine although advancements in technology has led to invention of equipment such as Braille embossers and Smart Braillers which are able to produce Braille materials in large quantities efficiently (Stone, Kay & Reynolds, 2019). The advancement in technologies has enabled many students with VI to function more independently and efficiently in the classrooms, universities and offices (McCarthy & Shevlin (2017). The equipment are expensive and attract high cost of maintenance (Sikanku, 2018). Consequently, Braille writing equipment are lacking in many tertiary institutions (Sikanku, 2018; Habulezi, Molao, Mphuting & Kebotlositswe, 2016). In other circumstances, the tertiary institutions may have the equipment but lack the personnel trained in their operation and maintenance (Zelelew, 2018).

Low vision devices are the other equipment that have been cited as lacking in tertiary institutions, and hence hinder the inclusion of students with VI (Maindi, 2018). These are devices that use lenses to magnify image of objects for students with VI; and so, the students with VI are able to use their residual vision (Fast, 2018). Devices such as handheld lenses, stand magnifiers, field expanders and telescope improve the functionality of students with VI in tertiary institutions (Maindi, 2018). According to Otyola, Kibanja & Mugagga (2017), lack of appropriate equipment and facilities in tertiary institutions have hindered the inclusion of students with VI. The role of equipment in academic exercise cannot be overemphasized as students cannot do without them (Omede, 2015).

1.6.4 Inadequate Specialist Human Resources

There are several human resources required to serve students with VI in the tertiary institutions. They include specialist tutors, regular tutors, Braille transcribers, counselors, low vision therapists and ancillary staff (Zelelew, 2018). The roles of these personnel are varied but complementary. The specialist tutors have the expertise to teach students with VI specialist subjects such as Braille, orientation and mobility and ADL (Fast, 2018; Hankebo, 2017). Also, they are involved in supporting regular tutors in their schools to not only adapt learning materials but also to instruct them on how to effectively use specialized technologies like word processor, closed circuit television (CCTV) and Braille output (Zelelew, 2018).

According to Fast (2018), specialist tutors also provide advice to regular tutors regarding appropriate print size, font, spacing of words in the text or whiteboard and lay out of visual materials. Furthermore, specialist tutors also offer in-service training of regular tutors concerning learning needs of the students with VI (Hankebo, 2017). This essential role of specialist tutors involves training regular tutors on the preparation of tactile diagrams, taped materials and other learning materials required by students with VI.

The role of human resources in the education of students with VI cannot be overemphasized yet studies have shown that institutions for students with VI experience inadequate human resources (Otyola, Kibanja & Mugagga, 2017; Habulezi et al 2016; Sikanku, 2018; Penda, Ndhlovu & N'gandu, 2015; Mwangi & Orodho, 2014). Accordingly, students with VI lack specialist tutors to instruct them in specialist subject like Braille and adapted assistive technology (Otyola, Kibanja & Mugagga, 2017; Sikanku, 2018). According to McCarthy and Shevlin (2017), lack of knowledge of Braille mathematics notation among regular school teachers appear to underpin the numerous challenges experienced by many students with VI in regular classrooms.

1.6.5 Lack of Social Adjustments of the Tertiary Institutions to Accommodate Students with VI

The social climates of the tertiary institutions with students with VI should be positive and welcoming. Tertiary institutions with positive and welcoming social climates will make

students with VI feel valued and accepted thereby promoting their social integration with sighted peers (Hewett et al., 2018). However, studies have shown that many students with VI face negative attitudes from their sighted peers and lecturers (Otyola, Kibanja & Mugagga, 2017; Omede, 2015). According to Omede (2015), a positive attitude by the tertiary institutional community towards students with VI will engender enlightened treatment towards them. Furthermore, negative attitudes by the sighted students towards students with VI will result into students with VI being isolated (Otyola, Kibanja & Mugagga, 2017). As a result, students with VI fail to develop positive social relationships with their sighted peers (Opie, 2018).

Students with VI in tertiary institutions are often looked down upon by the sighted peers and lecturers as underachievers (Otyola, Kibanja & Mugagga, 2017; Omede, 2015). This results in students with VI failing to get assistance from the sighted peers. Also, when students with VI are socially isolated from their sighted peers, they may not fully engage in the activities of the institutions thereby negating the real meaning of inclusion.

The people in the administration of tertiary institutions with students with VI should be trained in the education of students with VI and their unique needs. Otyola, Kibanja and Mugagga (2017), observe that the attitude of the administrators of the tertiary institutions towards students with VI will influence the attitudes of other people interaction with students with VI thereby courting acceptance or rejection.

Furthermore, administrators of tertiary institutions with VI should spearhead their support but also be actively involved in supporting them. In addition, administrators of tertiary institutions trained in the education of students with VI are not likely to meet the unique needs of their students with VI such as medical, educational and material needs (Fast, 2018). These unique needs of students with VI may not easily be appreciated by the sighted peers hence leading to more social segregation.

1.6.6 Inadequate Architectural and Environmental Modifications

The placement of students with VI in tertiary institutions requires the adjustments of the physical environment of the institutions (Zelelew, 2018; Hankebo, 2017; Hewett et al., 2018). Although the physical environment of the tertiary institutions should be adjusted to

suit the needs of students with VI, studies have shown that buildings and compounds of most tertiary institutions are not appropriately designed to meet the needs of students with VI. The presence of curved stairs, high steps and narrow walkways characterize buildings and compounds of many tertiary institutions thereby making them inaccessible to students with VI (Omede, 2015). The physical environments of the tertiary institutions are always adjusted to improve accessibility and safety of students with VI (Hankebo, 2017).

Fast (2018), emphasize the need for proper classroom planning and organization to effectively accommodate students with VI in inclusive institutions. According to Fast, proper classroom planning and organization made the classroom a safe environment for students with VI and facilitated their movement into and outside the lecture room. However, studies have shown that lecture rooms of most tertiary institutions with students with VI lack proper planning and organization that suit students with VI (Otyola, Kibanja & Mugagga, 2017; Habulezi et al, 2016). Because of improper organization of lecture rooms, students with VI are unable to move safely and efficiently within many lecture rooms.

The level of lighting in buildings of tertiary institutions is an important factor in the accommodation of students with VI in the inclusive institutions (Hankebo, 2018; Fast, 2018). According to Fast, the ability of students with VI to carry out a task increases with increased illumination. However, the facilities of most tertiary institutions with students with VI lack appropriate adjustments including lighting (Otyola, Kibanja & Mugagga, 2017). Whilst some students with VI may require increased illumination, other students with VI require reduced levels of illumination. For instance, students with cataract have photophobia and hence require reduced illumination. Tertiary institutions can reduce the level of illuminations for their students by use of louvers, blind and tilted glasses (Dakwa, 2014).

1.7 RESEARCH METHODOLOGY AND DESIGN

This section of the study dealt with research paradigm, research approach and research design. Also, delineated in the section were population and the sampling as well as the

data collection. Eventually, the section explained the data analysis techniques used in the study.

1.7.1 Research Paradigm

The research paradigm that formed the foundation of this study was interpretivism. Creswell (2014) defines a paradigm as a general philosophical orientation about the world and the nature of research the researcher brings to a study. The philosophy of interpretivism puts more emphasis on the manner in which people construct meaning on a phenomenon in the social context. Whilst Hammersley (2013) argues that reality consists of people's experiences with the world in which they live. On the other hand, Pham (2018), observes that knowledge and meaning people have on a phenomenon is dependent on their interpretation of it. Hence, thinking and reasoning are important aspects of constructing meaning. Donoghue (2018), the approach relies heavily on the use of naturalistic methods such as interviewing and observation to study the meaning that people construct on a phenomenon. The paradigm proposes that people derive their construct from the field by having an in-depth examination of the phenomenon of interest (Creswell & Creswell, 2018). Consequently, through observation people collect information about events, while through interpretation they make meaning of it. The paradigm was appropriate for this study since it enabled the researcher to understand the meaning people had assigned inclusion of students with visual impairment in tertiary institutions based on their social interaction with the phenomenon.

1.7.2 Research Approach

This study adopted qualitative approach to collect data. Creswell (2014), the approach relies on text and image data drawn from naturalistic setting where participants experience the problem under study. Whilst Mugenda and Mugenda (2019) argues that qualitative research is characterized by multiple sources of data such as interviews, observations, documents as well as audiovisual information. As a consequent of using multiple sources of data, the researcher is able to have holistic picture of the issue being studied (Punch, 2014). On the other hand, Creswell observes that in qualitative studies, the researchers are involved in data collection by observing the behavour of the

participants or by interviewing them. Also, they may be involved in data collection through document analysis. Consequently, the researcher is able to have an in-depth understanding of the phenomenon being studied (Mugenda & Mugenda, 2019). This approach was suitable for this study as it enabled the researcher to have deeper understanding of inclusion of students with VI in tertiary institutions in Kenya.

1.7.3 Research Design

The study used case study design to explore the experiences of including students with visual impairments. Case study in research methodology is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, when the boundaries between the phenomena and the context are not clearly evident, and in which multiple sources of evidence is used (Mugenda & Mugenda, 2019). Other scholars have defined case study as in-depth analysis of a single phenomenon in its natural setting (Punch, 2014; Orodho, 2009 & Creswell, 2014). This research design is inclined towards qualitative research approach characterized by natural setting, multiple of sources of data; and the researcher as the main instrument in the research (Creswell, 2014). The design was appropriate for the study since it allowed the use of variety of data collection techniques of qualitative and quantitative data. This enabled the researcher gain in-depth insight into the experiences of stakeholders concerning the inclusion of students with VI in tertiary institutions. Thus, the researcher was able to answer the research questions the study had set out to answer.

1.7.4 Population and Sampling

This is the population to which the researcher wants to generalize the results of the study (Mugenda & Mugenda, 2019). The target population for this study comprised all the students with VI, students without VI, lecturers, administrators and support staff of the tertiary institution studied. Orodho and Kombo (2002) argue that sampling is the process of selecting a number of individuals or objects from a population such that the selected groups contain elements representative of the characteristics found in the entire group. This study used purposive sampling to select respondents for the study. This is a sampling technique where the researcher selects respondents in a deliberate way or with

some purpose or focus (Punch, 2014). Purposive sampling enabled the researcher to select respondents with relevant qualities for the study. The sample was 32 made up of 15 students with VI, 5 students without VI, 7 lecturers, 2 support staff and 3 administrators.

1.7.5 Data Collection Techniques

Research instruments are the tools a researcher use to collect data. The study used an open-ended questionnaire, semi-structure interviews, focus group discussions and observation checklist to collect data. The study relied on qualitative open questionnaire to collect data from different groups of participants. The use of open-ended questionnaire allowed the researcher to get information from the participants regarding their experiences with inclusion of students with VI in the tertiary institutions. The open-ended questionnaire was divided into two parts namely, part A and B. While part A of the questionnaire asked questions related to demographic details of the participants, part B asked questions on four themes that addressed the key research questions: strategies used by tertiary institutions to make curriculum accessible to students with VI; the availability of specialist resources for students with VI in the tertiary institutions; environmental modifications for students with VI in tertiary institutions; policies that support inclusion of students with VI in tertiary institutions; and strategies that could be used to improve the inclusion of students with VI in tertiary institutions.

1.7.6 The use of Semi-Structure Interviews, Focus Group Interview and Covid-19 Pandemic

The researcher used semi-structured interviews guide on selected participants from the sample of students with VI, lecturers and administrators so that issues which were not clear in the questionnaire could be raised and clarification made. Also, semi-structure interview guide enabled the researcher to get in-depth data since it allowed the researcher to probe the participants (Orodho & Kombo, 2002). The focus group interview (FGI) was organized for students with VI. The FGI addressed the experiences of students with VI at the tertiary institutions. The forum provided ample opportunity for students with VI to discuss issues that confronted them. The infrastructural observation checklist was used to collect data on the environmental modification, availability of equipment and

facilities and teaching and learning resources used in the tertiary institution. The researcher ensured that there was strict adherence to guidelines by the Ministry of Heath on the prevention of Covid-19 during data collection. The participants were reminded of the guidelines on prevention of Covid-19 before and during data collection. A Summary of the distribution of data gathering tool is shown in table 1.8.6 below

Table 1.7.6: Distribution of data collection tool to participants

s/N	Participants	Data collection tool	No of participants
1.	Students with VI	Open-ended questionnaire	15
		Semi structured interview	08
		Focus Group Interview	08
2.	Students without VI	Open-ended questionnaire	05
3.	Lecturers	Open-ended questionnaire	07
		Semi structured interview	07
4.	Support staff	Open-ended questionnaire	02
5	Administrators	Open-ended questionnaire	03
		Semi structured interview	03

1.8. DATA ANALYSIS

Data analysis is the process of bringing order, structure and meaning to mass of information collected from the field (Kothari & Garg, 2019). Inductive content analysis of the data was used in the study. This is an analytical process in which the researcher reads, organizes, and forms categories, concepts and themes by comparing similarities and differences between the coded themes (Kyngas, Kaariaine, & Elo, 2020). The method is mostly appropriate when data collection is open and follows loosely defined themes (Moser & Korstjen, 2018). Coding is an important analytic approach in qualitative data analysis that basically involves naming a portion of the data with label that describes, summarizes and categorizes the data (Moser & Korstjen, 2018). According to Jameel and Majudu (2018) coding is an essential analytic approach to qualitative data analysis that involves naming a portion of the data with label that describes, summarizes and categories data.

Firstly, the qualitative data collected by the open-ended questionnaire was reviewed to identify words and phrases that represent emerging themes by use of appropriate codes (Mugenda & Mugenda, 2019). Secondly, data collected by interviewing the participants was transcribed verbatim. Thereafter it was analyzed to identify the emerging themes and patterns by use of codes. Data collected through qualitative open-ended questionnaire, semi structured interviews, focus group interviews and infrastructural observation checklist was later triangulated to gain a rich and clear understanding on inclusion of students with VI in the tertiary institutions in Kenya. Also, the researcher used field notes to compliment other sources of data. The use of data from different sources enabled the researcher to understand the variable involved in the educational services provision to students with VI in the tertiary institutions in Kenya.

1.9 CREDIBILITY AND TRUSTWORTHINESS

The researcher undertook the following process to ensure the findings of the study were reliable, valid, credible and trustworthy. The researcher ensured that he used multiple approaches during data collection. This was to enhance the researcher's ability to ascertain the accuracy of the findings (Creswell, 2014). The researcher triangulated the findings from various sources and used it to build a coherent justification and themes (Mugenda & Mugenda, 2019). Also, the researcher took back the final report of the study to the participants to ensure that they concurred with the findings.

1.9.1 Participant Validation

The researcher ensured that the findings of the study were credible and trustworthy by engaging in participant validation (Lindheim, 2022). This is the process in which the researcher provides the people on whom he/she has conducted the research with the account of his findings (BryMan, 2016). The goal is to seek confirmation that the research findings and impressions are congruent with the views of those whom research was conducted.

1.9.2 Triangulation

The researcher relied on more than one source of data to explore the perspectives of the participants regarding inclusion of students with VI in tertiary institutions. Data was collected by use of qualitative open-ended questionnaire, semi-structured interviews, focus group interviews and infrastructural observation checklist. This enabled the researcher to compare the findings and to ensure they were authentic (Mugenda & Mugenda, 2019).

1.9.3 Dependability

The researcher kept a record of all the phases of the research process. For instance, the researcher kept records on selection of research participants, field worker notes and interview transcripts. The records could provide other persons with opportunity to audit the process to ascertain if proper procedures were followed, and to verify the authenticity of the research findings.

1.9.4 Transferability

The researcher engaged in intensive study of the tertiary institution including learners with VI in their programs. The thick descriptions could provide other researchers with a database for making judgment on possible transferability of the findings in other situations.

1.9.5 Piloting and Pre-testing Questions

The researcher pre-tested the research instruments to ensure they functioned well. Also, piloting provided the researcher with the experience of using the instruments. Consequently, he was able to use the instruments with more confidence.

1.10 ETHICAL CONSIDERATIONS

The researcher sought permission to carry out this study from College of Education Ethics committee of the University of South Africa and Kenya's Ministry of Education. Also, permission from the principal of the tertiary institution was obtained. The researcher briefed the participants about the study, the essence of carrying out the study in their

institution and the potential benefits that would accrue from it. This was necessary to enable the participants to make informed consent while taking part in the study. During the interviews, the researcher avoided asking the participants especially students with VI sensitive questions that could provoke and remind them of the nasty experiences that they had encountered in the tertiary institution. For instance, students with VI are likely to be frustrated by experiences such as not being able to follow the lectures, challenges with finding their way in the institution; or bumping on an obstacle and falling into a ditch. These experiences were likely to revoke the emotions of students with visual impairment. Therefore, there was be need to provide counselling to this cadre of students as a way of debriefing them. Consequently, the researcher assured the participants that he would organise a counselling session in order to debrief them. Also, the researcher was able maintain high degree of confidentiality and remained anonymous throughout the study. The researcher has provided a more robust discussion on the ethical considerations of the study in chapter 4.

1.11 ASSUMPTIONS ABOUT THE STUDY

The researcher made the following assumptions when carrying out this study:

- The study assumed that the participants of the study would be honest, sincere and truthful during their interaction with the researcher. Hence data that was deprived from the study represented the genuine and true state of inclusion of students with VI in the tertiary institution.
- The participants of the study had been interacting with students with VI in the inclusive setting and had reasonable understanding regarding inclusion of students with VI in the tertiary institution.

1.12 SIGNIFICANCE OF THE STUDY

The purpose of the study was to find appropriate strategies of improving inclusion of students with VI in tertiary institutions in Kenya. The study achieved that feat by identifying challenges experienced by lecturers; students with VI, students without VI and other staff members in the tertiary institution and thereafter made suggestions on how to remediate the challenges identified. For instance, participant had emphasized the need to use

modern technologies in the Braille Production, The participant had said that: *"The institution should invest in low-vision based technologies; more refreshable Braille notetaker displays, to enhance easy access and storage of books and notes, considering how bulky braille paper is,"* (Q-open Lecturer 02).

The above suggestion is likely to improve Braille production in the tertiary institution. Also, other tertiary institutions involved in inclusion of students with VI can benefit from applying the suggested strategies of improving inclusion.

The study also endeavored to develop a framework on inclusion of students with VI in tertiary institutions. This has led to the development of theory and practice of inclusion of students with VI in tertiary institutions. As a result, the study is likely to enhance the understanding of administrators, lecturers, support staff and educational administrators about inclusion of students with VI in tertiary institutions. Consequently, this will lead to improved welfare and accessibility of curriculum materials to students with VI.

The findings of the study will contribute to body of knowledge on inclusive education practices and in particular the inclusion of students with VI in tertiary institutions. The inclusion of students with disabilities including students with VI has attracted the attention of many scholars in recent years. Thus, considerable research has been done on how to improve inclusive education practice at all levels of learning. The study made several suggestions on how to improve inclusion of students with VI in tertiary institutions especially regarding accommodation accorded to students with VI.

1.13 LIMITATIONS AND DELIMITATIONS OF THE STUDY

1.13.1 Limitations of the Study

The researcher faced financial constraints in the course of carrying out this study. This forced him to have a relatively smaller sample population than was planned and that could affect the reliability and the accuracy of the research findings. Also, constraints in financial resources negatively affected the preparation of research tools, pre-testing and data processing.

Secondly, the study adopted a case study design to collect data. This requires a relatively long period of time to complete due to the use of variety of data collection procedures and methodology. However, the researcher took a shorter time to conduct the study due to employment engagements. This impacted on the quality of data collected and the research findings.

1.13.2 Delimitations of the Study

The study was done at the tertiary institution involved in the inclusion of students with VI in Machakos County, Kenya. Data was collected from students with VI, students without VI, lecturers, administrators and support staff working in the institution.

1.14 DEFINITIONS OF KEY CONCEPTS

Visual impairment - This refers to impairment of vision that even with corrections adversely affects a child's educational performance. The term includes students with low vision who use print as their educational medium and total blindness who rely on Braille as their medium (Maindi, 2018). The World Health Organization (1992) defined blindness as visual acuity of less than 3/60 or less in the better eye after correction; and low vision as having impairment of visual functioning even after treatment and standard refractive correction and has visual acuity of less than 6/18 but equal to or better than 3/60, or a corresponding visual field loss to less than 20 degrees in the better eye with the best possible correction from the point of fixation. This study will adapt definition by Maindi that defines visual impairment in terms of its ability to interfere with the student's performance in educational context.

Student with disabilities - These are students who have physical, sensory, intellectual or other impairments including visual, hearing, learning or physical incapability, which impact negatively on social, economic or environmental participation of the person (KISE, 2018). On the other hand, Wanyera and Mwaura (2007), defined students with disabilities as individuals whose physical, mental or behavioural performance deviates negatively from the norm, and include students with difficulties such as in hearing, behaviour and speech. This study considers students with disabilities as those with impairment of visual,

hearing, mental and physical abilities that adversely interfere with their academic performance in schools.

Inclusive schools - These are regular schools where students with disabilities are educated together with their regular peers in the regular classrooms. Whilst inclusive schools are basically found in primary and secondary schools, the context in which this term has been used in the study refers to institutions of higher education that include students with disabilities especially those with VI in their academic programs (KISE, 2018).

Regular institutions - These are mainstream institutions for typically developing students (KISE, 2018). In the context of this study, the term regular institutions refer to institutions of higher education that admit students without any form of disability.

Tertiary institutions - These are institutions involved in providing higher education at the level of universities, vocational universities, community colleges, liberal arts colleges, institutes of technology and other collegiate level institutions such as vocational schools, trade schools and career colleges that award academic degrees or professional certificates (Omede, 2015). In the context of this study, the term tertiary institutions refer to institutions that offer post-secondary education to all students with appropriate qualifications.

1.15 CHAPTER OUTLINE

This thesis is made up of six chapters. Chapter One forms the introduction of the study; discusses the background of the study and provides the statement of the problem. Then, the chapter provides the purpose statement, research questions and research objectives. This is followed by the theoretical and conceptual framework of the study. Thereafter the chapter discusses the significance of the study, the delimitations and the limitations of the study. This is followed by a discussion on the operational definitions of terms used in the study. Finally, the chapter provides a summary of the whole study, explaining how the subsequent chapters are organized.

Chapter Two comprises of literature review on which the study is based. The chapter begins with a paragraph that introduces the chapter. This is followed by discussions on the concept and philosophy of inclusive education; historical perspectives on inclusive education and policy and legislation that support inclusive education as well as International Protocols on inclusive education. Then the chapter provides a discussion on the policy and legal framework of inclusive education in Kenya as well as rationale and benefits of inclusive education.

Thereafter, the chapter provides a discussion in support of inclusive education and arguments against inclusive education followed by discussions about tertiary education for students with VI. The chapter then discusses varied methods of accessing curriculum by students with VI as well as a discussion on the roles of assistive technology, human, physical and financial resources in the education of students with VI. The chapter also provides a discussion on the necessary physical modifications in the tertiary institutions to allow inclusion of students with VI in their programs. This is followed by paragraph that provides a conclusion to the chapter.

Chapter Three provides discussions on symbolic interactionism theory that forms the theoretical basis of the study. The chapter begins with a discussion on the meaning of symbolic interaction and how interaction aids in the creation of meaning in the society. Then, the chapter discusses the historical perspectives in the development of symbolic interactionism, principles of symbolic interactionism, core competencies as well as the varied theoretical approaches of the study.

Thereafter, the chapter discusses the various studies on which symbolic interactionism theory has been applied as the theoretical basis of the study. This is followed by a discussion on the criticism against symbolic interactionism theory before making concluding remarks on the chapter.

Chapter Four discusses the methodology and the methods used in the study. The chapter begins with the introduction and a discussion on the research approach adopted by the study. Then the chapter discusses the research design, target population and the sample and the sample size of the study. This is followed by a discussion on the location of the

study, research tools, and the methods used to collect data as well as the methods used to analyze data collected during the study. The chapter ends with a conclusion.

Chapter Five comprises findings and discussions of the study. This chapter provides discussion on findings of the study in order to provide answers to the overarching research question and subsequent research questions. The overarching question addressed by the study was: What are the experiences of including students with VI at tertiary institutions? The secondary research questions to be addressed by the study wre: What current strategies and resources are used by the tertiary institutions to make curriculum accessible to students with VI?; What environmental modifications have been done in the tertiary institutions to accommodate students with VI?; What policies exist in the tertiary institutions that guide the inclusion of students with VI?; and What strategies can be used to improve inclusion of students with VI in the tertiary institutions? The chapter also discusses the findings of the study in relationship to varied views based on the literature review provided in Chapter Two of the study.

Chapter Six deals with the summary, conclusion; and recommendations based on the findings of the study. The chapter begins with a discussion on the summary of the main findings of the study. Later the chapter provides the main conclusion based on the whole study. Lastly, the chapter makes varied recommendations to different stakeholders involved in the provision of education to students with VI.

1.16 CONCLUSION

This study discusses the inclusion of students with VI in the tertiary institutions in Kenya. It begins by looking at the background of the study in which inclusion of students with VI in tertiary institutions is discussed based on international perspectives. The study also provides reviewed literature on current strategies and resources used to accommodate students with VI in tertiary institutions, policies that influence inclusion as well as environmental modifications required to accommodate students with VI in tertiary institutions. The study notes that whereas there is conducive social support accorded to students with VI in the tertiary institutions in Kenya, inadequate resources in the institutions is a great hindrance in the attainment of inclusive society. Therefore, there is

need to procure appropriate assistive devices; expand the existing facilities used by students with VI; engage in the appropriate environmental modification of the physical environments used by students with VI; and have appropriate policies in place to effectively include students with VI in the tertiary institutions. The subsequent chapter examines the literature review of the study.

CHAPTER TWO

VISUAL IMPAIRMENTS IN TERTIARY INSTITUTIONS

2.1 INTRODUCTION

This chapter presents a critical review of literature concerning inclusion of students with VI in tertiary institutions. The literature has been reviewed based on the overarching questions of the study. It begins by examining the concept and philosophy of inclusive education; international policies of inclusive education as well as the development of inclusive education policies in Africa; and policy and legal framework of inclusive education in Kenya. The chapter then reviews literature on the rationale and benefits of inclusive education as well as arguments against inclusive education. The chapter has discussions on visual impairment, tertiary education and inclusion of students with VI in tertiary institutions in specific countries of the world.

There are several paragraphs on strategies of making curriculum accessible to students with VI in the tertiary institutions as well as resources used to educate students with VI. This is followed by a review of literature on the necessary environmental modification required to accommodate students with VI in tertiary institutions as well as policies that have guided inclusive education in the various countries before a conclusion is made.

2.2 CONCEPT AND PHILOSOPHY OF INCLUSIVE EDUCATION

Inclusion has been defined as a processs of providing equitable opportunities to all students, including those with severe disabilities to receive effective educational services, with supplementary aids and support services as needed. In addition, it aims toward preparing all students for productive lives as full members of the society (Francisco, Hartman & Wang, 2020). Other scholars have considered Inclusive education as a philosophy that advocates educating students with disabilities including those with VI together in the same classrooms with other students without disabilities (Omukwuor & Uchechi, 2017;). As a consequent of being placed in the regular classroom, inclusive education accord students with disabilities including those with VI with an opportunity to learn with regular peers without discrimination and segregation based on their different

abilities (Omukwuor & Uchechi, 2017). This conforms to international protocol that considers education as a basic human right for all children (Mwangi & Orodho, 2014).

On the other hand, Hornby (2015) argues that inclusive education is a multi-dimension concept that considers the celebration and valuing of difference and diversity in students; and hence takes into accounts human right, social justice and equity issues(Lourens & Swatz, 2016). Accordingly, educating students including those with disabilities in regular classrooms is considered a basic human right for all (Hornby, 2015). Also, inclusive education promotes social justice by ensuring that students with disabilities are not segregate from the mainstream activities of the society.

Inclusive education as a philosophy is not merely concerned with placement of students with disabilities in regular classrooms (Lourens & Swartz, 2016) but considers improving the quality of social and learning experiences of students with disabilities. Accordingly, regular schools must provide appropriate social climate that value, celebrate and support students with diversities (Parvin, 2015). Once this is achieved, students with disabilities will feel as welcomed members in the learning institutions. However, this is only possible if students with disabilities are provided with the necessary resources that meet their educational needs (Motitswe, 2014). Accordingly, Hewett et al, (2018) argues that tertiary institutions should have equitable physical, online as well as relevant teaching and learning resources for students with VI to succeed in their academic pursuits.

The philosophy has also been considered as a process that enhances the quality of the education system in any country to meet the diverse learning needs of the students (Omukwuor & Uchechi, 2017; Asamoah, Ofori-Dua, Cudjoe, Abdullah & Nyarko, 2018). Otyola, Kibanja & Mugagga (2017) assert that the placement of students with disabilities in the regular classrooms accord them the opportunity to learn the norms and values of the community. Thus, when students with disabilities are educated in the regular school programs (Hewett et al., 2018), they are well prepared to live in their communities beyond the school. On the other hand, Omukwuor & Uchechi (2017) argue that the necessary adaptation done in the regular classrooms to accommodate students with disabilities enhances the opportunity for all students to learn (Hornby, 2015). Also, inclusive practices will accord teachers opportunity to learn and apply the varied methodologies of teaching

students with disabilities in their classrooms. Inclusive education, therefore, enriches the learning environment for all students (Hornby, 2015).

2. 2.1 International Policies on Inclusive Education

There are various international protocols on which inclusive education is arched. The Universal Declaration of Human Right (UN, 1948) is one such protocol that decrees education as an inalienable human right (Hankebo, 2018; UN, 1948). Students with disabilities have a right to receive quality education alongside their peers without disabilities. The right of all students to receive quality education has been reiterated in several other international, regional and national policies (NGEC, 2016; Hankebo, 2018). For Instance, the world conference on Education For All (EFA) also referred to as Jomtien declaration emphasizes the need to make basic education accessible to all students including those with disabilities (UNESCO, 1990; Mboshi, 2018). Accordingly, the declaration provided impetus for the international community to embrace inclusive education by urging the school system to employ appropriate strategies that would ensure that all students including those with disabilities receive quality education (Mboshi, 2018).

The Salamanca Statement and Framework for Action on Special Education is an international effort to embrace inclusive education (UNESCO, 1994; Hankebo, 2018); and advocates for the inclusion of all students in the regular schools regardless of their physical, intellectual, social, emotional, linguistic or other conditions (NGEC, 2016; Zelelew, 2018). While Zelelew argues that Salamanca Framework of Action aimed at reducing dropout rate amongst all students, Hankebo (2018) asserts that Salamanca Statement emphasizes the need to restructure school system and adopt inclusive education as a strategy of accommodating students with diverse abilities as the most effective means of overcoming negative attitudes of people the society against people with disabilities. Ajuwon et al. (2015) observes that regular class placement makes students with disabilities feel valued and accepted in the community, and hence is the most effective means of promoting the provision of quality education for all students in the society.

The other international conventions that have advocated inclusion of students with disabilities in the regular schools include the United Nations Convention on the Right of the Child (1989), the UN Standard Rules on Equalization of Opportunities (1993) and the World Educational Forum (2000) (Adoyo & Odeny, 2015). These international conventions explicitly recognized and embraced inclusive education as the best strategy to educate students with disabilities (Adoyo & Odeny, 2015; Hankebo, 2018). Adoyo and Odeny argue that UN Standard Rule No. 6 had strengthened the spirit of inclusion by appealing to member states to provide education for students with disabilities in inclusive settings. On the other hand, Zelelew (2018) observes that the Standard Rules was a concerted move towards achieving a socially appropriate model of inclusive education. According to Zelelew, the purpose of the rule is to ensure that students with disabilities enjoy all the rights as their peers. Accordingly, the rule serves as an instrument upon which inclusive policy is founded; and aims at removing the barriers that prevent people with disabilities from being included participating in the activities of their societies (United Nations, 1994; NGEC, 2016). These documents form the basis on which inclusive education policies for national governments are grounded.

In recent years, there have been concerted efforts by nations of the world to provide quality education for their citizens as evidenced by the Millennium Development Goals (MDGs) of 2000 (UNESCO, 2000; NGEC, 2016; Elder, 2015). The summit had developed eight MDGs, but the Goal No. 2 specifically urged member nations to guarantee Universal Primary Education (UPE) to all children of school going age by 2015 (UNESCO,2000; NGEC, 2016). Although the (MDG) Goal No. 2 had advocated for the need to achieve universal primary education, the Goal No. 3 had expressed the need to promote gender equality in society.

The implication of these agendas is that all children including those with disabilities should have an opportunity to be in regular schools in their neighborhoods together with their peers. According to Elder (2015), in order to put an end to gender disparity in the school system, there is need to accept and celebrate students with diverse abilities in the classrooms around the world (Hornby, 2015). In addition, the summit urged member nations to ensure that children in difficult circumstances and those belonging to ethnic

minorities are given chance to acquire basic primary education (UNESCO, 2000; NGEC, 2016). Thus, the MDGs had expressed the desire to achieve inclusive society which must begin by having inclusive classrooms and schools.

The United Nations Conventions on the Rights of Persons with Disabilities (CRPD) (2006) is yet another effort by the nations of the world to safeguard the rights of persons with disabilities to quality education at all levels of schooling (Elder, 2015; Opie, 2018; Mwoma, 2017). According to Opie, the convention urged education providers to avail the necessary support for students with disabilities to maximize their academic and social potential in the society. When students with disabilities are given adequate support, they are able to fit in with the general system of education; and will not be marginalized. The convention had set the wheel for inclusion of students with disabilities in general classrooms. On the other hand, Elder (2015) opines that (CRPD) shifted society's view of persons with disabilities from object of charity, medical treatment and social protection to subjects with rights; and who have the capacity to claim rights and make decision based on free and informed consent as active members of the society. Whilst several international protocols had advocated for the need to provide students with disabilities with basic education, the (CRPD) on the other hand expresses the need to provide students with disabilities with quality education in inclusive schools (Elder, 2015).

2.2.2 Development of Inclusive Education Policy in Africa

In Africa, there have been several efforts to provide inclusive education for students with disabilities. These efforts are evident by signing of various protocols that support inclusive education. For instance, the African Charter on Human and People's Right is one such protocol that protects people's right to education (Elder, 2015; NGEC, 2016). Whilst Article No. 2 of the charter specifically decrees that education should be enjoyed by all citizens without any form of discrimination, Article No. 18(4) targets persons with disabilities; and lays emphasis on the need to protect and provide them with physical, moral and social support (NGEC, 2016).

Hence, to educate students with disabilities in the special schools is discrimination based on their disability according to this protocol. Accordingly, the charter provides a strong

foundation for the inclusion of students with disabilities in the regular schools. Another protocol that supports inclusive education is the African Charter on the Right and Welfare of the Child. According to the charter, every child has right to education, and the state parties should strive to accord the female, disadvantaged and gifted children equal access to education (NGEC, 2016).

2.2.3 Policy and Legal Framework of Inclusive Education in Kenya

In Kenya, there have been concerted efforts to provide policy guidelines on education of students with disabilities that date back to as early as 1964 (Chikati, Wachira & Mwinzi, 2019). The policy guidelines are contained in various education commission and committee reports and stipulate how to enhance the welfare of persons with disabilities in the society. According to Adongo (2011), the work of the Committee on Care and Rehabilitation of the Disabled (1964) led by Hon Ngala Mwendwa resulted in the formulation of Sessional Paper No 5 of 1968. As a consequent, the first rehabilitation for persons with disabilities was built in Nairobi in 1971 in Mbagathi (Chikati, Wachira & Mwinzi, 2019).

Mwoma (2017) stipulates that the government appointed National Education Commission under the chairmanship of professor Ominde in (1964) to align the system of education of the country to the aspirations of the new nation. The commission made several recommendations but only three had bearing on education of students with disabilities. First it recommended the inclusion of students with mild disabilities in regular schools provided teachers were equipped with basic skills and knowledge of teaching them (Adongo, 2010; Chikati, Wachira & Mwinzi, 2019).

Secondly, the commission recommended for the inclusion of a component of special education in the basic teachers' training course to equip trainees with skills and knowledge of teaching students with disabilities (Mwoma, 2017). The commission also recommended for the provision of rehabilitation services to people with disabilities in Kenya. Eventually, the recommendation resulted in the establishment of department of Vocational Rehabilitation in the Ministry of Social Services (Mwoma, 2017).

The National Education Commission, (The Gachathi Report, 1976), made several recommendations that addressed students with disabilities issues. According to Mwoma (2017), the commission identified the need to coordinate assessment and early intervention of students with disabilities in the society. Also, the commission, recommended the need for concerted public campaigns aimed at creating public awareness on causes of disabilities in order to reduce incidence of disabilities (Mwoma, 2017). As a result of these recommendations, the government established several Educational Assessment and Resource Centres (EARCs) in 1984 (Adongo, 2011; Mwoma, 2017). The Commission also recommended for the need to collect data on the nature and extent of disabilities (Adongo, 2011). The reliable data on the prevalence of students with disabilities is essential to help guide policies, planning and allocate resources for students with disabilities (KISE 2018). Furthermore, the commission reiterated the need to include students with mild disabilities especially those with VI in regular schools (Chikati, Wachira & Mwinzi, 2019). The government established the Kenya Institute of Special Education (KISE) to train teachers for students with disabilities based on the recommendations of the Gachathi Commission Report according to Syallo and Njoka (2013).

The presidential working committee on education and training for this decade and beyond (The Kamunge Report, 1988) made several recommendations concerning the education of students with disabilities especially those with VI. Adongo, 2011 notes that the committee proposed the inclusion of students with low vision in regular schools provided the schools were equipped with the necessary facilities and equipment to assist them. Mwangi (2013) noted that the committee had emphasized the need to train persons with all types of disabilities in the regular vocational and technical institutions as opposed to placing them in special institutions. This is important if trainees with disabilities are to be fully included in the society long after finishing training. In addition, the report had recommended that students with disabilities be provided with appropriate curricula and examination that meet their educational needs (Syallo & Njoka, 2013). The provision of curricula and examinations in accessible mode is important if students with disabilities are to receive quality education.

According to Mwoma, the Totally Integrated Quality Education and Training Taskforce (The Koech Report, 1999) recommended the establishment of a national special education advisory board to oversee issues pertaining to education and welfare of persons with disabilities in the society. In addition, the committee noted the absence of a comprehensive Special Needs Education (SNE) policy for students with disabilities (Chikati, Wachira & Mwinzi, 2019). A comprehensive National Policy for students with disabilities is necessary to spearhead their education (Chikati, Wachira & Mwinzi, 2019).

The government of Kenya introduced Free Primary Education (FPE) in 2003 (Elder, 2015). This implied that primary school students were exempted from paying school fees and other levies to attend school (Chikati, Wachira & Mwinzi, 2019). Furthermore, the government made a commitment to pay salaries to teachers and other support staff. The FPE enabled many students from vulnerable backgrounds including those with VI to attend school (Adongo, 2011). Mwoma states that the government recognized the need to provide students with disabilities with adequate human personnel and other resources to provide quality education.

This led to the formation of a government taskforce to carry out an appraisal exercise on students with disabilities and special needs (Chikati, Wachira & Mwinzi, 2019). The taskforce reiterated the need for the Ministry of Education to draft a consolidated policy and legal framework on Special Needs Education. Eventually, the government enacted The National Special Needs Policy Framework (2009) (Chikati, Wachira & Mwinzi, 2019).

The government has enacted various policies and laws to promote the inclusion of persons with disabilities in the society. According to NGEC (2016), all citizens of Kenya have a right to education as guaranteed by the Constitution (2010). Article 53(b) of the constitution specifically states that all citizens have right to access free and basic education (Elder, 2015). In addition, Article No. 54 specifically targets persons with disabilities. Chikati, Wachira and Mwinzi (2019) observe that persons with disabilities have a right to receive quality education in appropriate institutions and facilities (NGEC, 2016). As a result of this constitutional pronouncement, all children including those with disabilities have a right to access free basic education.

Also, it implies that students with disabilities have a right to receive their education in regular schools (Elder, 2015). According to Elder, the government has domesticated Article No. 28 of the Convention on the Right of the Child (UN, 1989) by drafting of the Children Act (2001). The Act protects every child's right to access quality, free and compulsory education (Elder, 2015).

2.2.4 Rationale for and Benefits of Inclusive Education

Several reasons have been advanced in support of inclusive education. According to Hornby (2015), inclusive education is a basic human right of all students to be educated alongside the regular peers; and it is wrong to segregate students with disabilities on the account of their disabilities. According to human rights activists, the placement of students with disabilities in special classrooms is inhuman and must not be tolerated (Hornby, 2015).

Inclusive education of students with VI into regular schools has been supported on account of being beneficial not only to students with VI but also to regular students in the school. Otyola, Kibanja and Mugagga (2017) assert that inclusive education helps change the negative and misconception that the sighted children have towards students with dsabilities including those with VI (Lourens & Swatz, 2016). When placed in the same setting, regular and VI students learn to play and share together.

Moreover, scholars have asserted that inclusive education provides students with disabilities with an opportunity to live and learn norms and values of the community. For instance, one of the values the students with VI learn in the society is a health competition that exists between students with VI and the regular students. When students with VI and regular students learn in the same classrooms, students with VI learn to work harder to be accepted by the regular students. Thus, inclusive education prepares students with VI for the world outside of school (Otyola, Kibanja & Mugagga, 2017).

The advantages of educating students with disabilities in regular classrooms have been confirmed by several studies (Hayes & Bolat, 2017; Otyola, Kibanja & Mugagga, 2017; Onukwufor & Uchechi, 2017). The studies indicate that students with disabilities placed

in inclusive setting made social and educational gains that outweigh gains made by their counterparts in special schools. For instance, Inclusive education provides students with disabilities with an opportunity to interact with regular students and model their behaviour on the superior behaviour exhibited by the regular students. As a result, students with VI acquire appropriate behaviour that make them live as acceptable members of the society (Parvin, 2015; Opie, 2017).

Furthermore, research has shown that students with VI will attain better academic grades by being educated in the regular classrooms alongside their peers. According to Villa and Thousand (2005) as cited by (Parvin, 2015), when students with disabilities including those with VI are provided with support services to receive quality inclusive education, the regular students will maintain state bench-level performance. Finally, the students with disabilities will experience higher academic and social achievement.

It has been argued that inclusive education provides regular students with an opportunity to learn to help students with VI. Hence, regular students and those with VI develop harmonious relationship with peers, friends and teachers. This helps both regular and VI students better their socialization skills. Eventually students with VI are enabled to live more independently in the society.

One of the practices embedded in special education is the identification of disability of the individual student and subsequent use of individualized educational program (IEP) to teach the student. But according to Horby (2015), these practices can result in labeling of students with disabilities and may eventually result in stigmatization. These practices are not entrenched in inclusive education and so inclusive education avoids labeling and stigmatization of students with disabilities.

Inclusive education has also been credited with restructuring the regular schools' system, thereby ushering into the school system diversified methods of teaching students with varied needs; improving the school infrastructure and bringing about collaboration between schools and professionals who assist student with VI. The varied methodologies of teaching students with disabilities not only enhance learning amongst students with VI

but also regular students. Thus, inclusive education is beneficial to both regular students and those with disabilities.

Parvin (2015) conducted a study amongst students with VI and their sighted peers in regular schools. The study had two objectives: to find out the level of social inclusion of students with VI; and to find out academic performance of students with VI in regular classrooms. The study found that students with VI were learning better in regular classrooms. When placed in regular classrooms, students with VI learnt how to adjust themselves to cope with regular students in the new situation. The finding of the study by Parvin (2015) was affirmed by other scholars (Villa & Thousands, 2005).

2.2.5 Arguments against Inclusive Education

The opponents of inclusive education have advanced several reasons against placement of students with disabilities in regular classrooms. Dollinska (2017) argues that students with disabilities are better served in special schools with high concentration of specialist teachers and other resources. According to the opponents, regular schools are deficient in the essential resources necessary to educate students with disabilities.

Hornby (2015) asserts that students are generally more inclined to be comfortable with peers who have similar interests, abilities and disabilities to themselves than peers of the same chronological age. Hence many students with disabilities consider being educated alongside their peers means being with students with similar disabilities. Many students with disabilities, therefore, prefer to be educated in special schools where their needs can be fully met.

2.3 CONCEPT OF VISUAL IMPAIRMENT

The people with visual impairment persons are heterogenous group persons most commonly characterized with some degree of visual loss (Parvin, 2015). Some students with VI may be totally blind while others can distinguish between light and darkness or merely see a couple of feet away. According to Olmstead as cited by Maindi (2018), VI refers to impairment of vision that even with corrections adversely affect a child's educational performance. Students with VI can be categorized mainly into two groups

namely: low vision and total blindness (WHO, 2004). The blind persons are those who can perceive light using sight but not enough for learning purposes. On the other hand, low vision is a visual impairment that can neither be corrected by standard glasses nor by surgery but interferers with the ability of the person to perform of daily living skills (Vidhya & MeenaKumari, 2015). According to Olmstead (2015), there are students with VI who use print as their educational medium, while others use Braille to read and write.

The World Health Organization (2004) has identified childhood blindness as significant health issue, with estimated 1.4 million blind children below the age of 15 years. Also, it has been estimated that the number of persons with low vision is three times greater than number of persons with total blindness in the world. Therefore, the world has about 4.2 million students with visual impairments. This data from WHO seems to confirm that students with sight impairments are a larger percentage of the overall population of students with disabilities (Kapadni et al, 2013).

In Kenya, the low vision project has grouped students with VI into five categories. The first category consists of students with vision which is not enough to read print and should be educated in Braille. The third group consists of students with vision which can be used to read print using low vision aids (Maindi, 2018).

2.4 TERTIARY EDUCATION AND STUDENTS WITH VI

Tertiary education is a term used to describe level of education in which the students are awarded academic degrees or professional certificate at the end of their education (Omede, 2015). Thus, the education is usually provided by the universities, vocational universities, community colleges, liberal Art colleges, and institute of technology and career colleges. According to Omede the term also refers to third stage, third level or higher education that is non-compulsory educational level that students undertake at the completion of their secondary education or high school. The level of education also includes training taken at undergraduate and postgraduate as well as vocational education and training colleges (Omede, 2015).

The number of students with VI who transit to tertiary education remains consistently low with barely 50% of them transiting from secondary school to tertiary level (McCarthy & Shelvin, 2017; Mng'ong'ose, Ngoboka, Kavenuke & Ndekwa, 2017). The low transition of students with VI into tertiary education has been attributed to several factors. According to McCarthy & Shelvin, the meager number of students with VI who pursue tertiary education is not attributed to students' low academic abilities but is a result of dearth of learning opportunities and support accorded the students. Furthermore, schools lack statutory obligation to introduce a system of Individualized Educational Plan, meaning that students with VI do not have appropriate provision in place at primary or secondary school levels to ensure that they realize successful transition to tertiary level of education as compared to their regular peers.

Furthermore, it has been recognized that some students with disabilities have highly restricted curriculum choices due to inaccessible curriculum materials, unfriendly physical and social environments and negative attitudes of the school community including those of teachers (McCarthy & Shelvin, 2017). Due to restriction imposed by the environment, the subject choices for students with VI in secondary schools are already constricted and skewed towards art-based subjects. Eventually, the career choices of students with VI are dictated by subject choices at secondary schools.

Tertiary education plays a significant role in assisting students including students with VI to transit towards attaining a successful adulthood and positive employment outcomes (Reeds & Curtis, 2012; Cheong, Abdullah, Yusop & Mohamed, (not dated)). However, studies have shown that fewer students with disabilities are likely to attend tertiary education compared to their regular peers (Omede, 2015; McCarthy & Shelvin, 2017; Cheong, Abdullah, Yusop & Mohamed, (not dated)). As a result, most students with disabilities only secure lower cadre jobs with low earnings compared to their able-bodied peers.

According to Cheong et al (not dated), the development of labour market demand over the past few decades has increased the necessity of possessing a tertiary education certification. The knowledge and skills gained through pursued of tertiary education are

important assets for successful future employment. Consequently, persons with disabilities require appropriate vocational technical training and employment skills to get employment opportunities in the labour-market (Omede, 2015).

Sheong et al argues that tertiary education enables individuals to increase employability as it positively affects their lifetime earnings and economic self-sufficiency. However, studies have shown that whilst 78% of regular students transit to tertiary education, barely 37% of students with disabilities attain necessary education and training which are useful for gainful employment. As a result, a good number of individual with disabilities are not able to acquire college adult education in vocational-technical field or other areas which are significant for transition to world of work. Hence majority of persons with disabilities remain unproductive citizens of their countries (Omede, 2015; Cheong et al, (not dated).

According to Stodden el al. (2003) as cited by Cheong at al. (not dated), individuals with disabilities are faced with varied barriers in their quest to access tertiary education such as lack of support, absence of accessible technology as well as poor individualized education planning catering for the special needs of the student. Consequently, not being able to attain tertiary education is serious concern to individuals with disabilities in the society (McCarthy & Shevlin, 2017).

There are several studies that have been done in other countries of the world on the challenges of including students with disabilities including those with VI at tertiary level of education (Reeds & Curtis, 2012; Nasiforo, 2015; Correa-Torres, Conroy, Rundle-Kahn & Brown-Ogilvie, 2018). The studies have provided valuable information concerning inclusion of persons with disabilities in those countries. However, there are hardly substantial studies concerning inclusion of students with VI at tertiary institution in Kenya. Consequently, there is need study inclusion of students with VI in order to identify the challenges inherent in the process; and to formulate strategies to improve service delivery to this cadre of students.

2.4.1 The Inclusion of Students with VI in Tertiary Institutions in Canada and US

In the developed Nations of the Western world, more students with disabilities are getting enrolled to pursue education in tertiary institution in recent years (Correa-Torres, Conroy,

Rundle-Kahn & Brown-Ogilvie, 2018; Reeds & Curtis, 2012). For instance, in 2008 the US department of education indicated that 707,000 students with disabilities were enrolled in both public and private colleges and universities in the US (Correa-Torres, Conroy, Rundle-Kahn & Brown-Ogilvie, 2018).

Similarly, the US department of statistics had indicated that students with disabilities including those with VI comprised 11% of the entire undergraduate in 2011/2012 academic year (Correa-Torres, Conroy, Rundle-Kahn & Brown-Ogilvie, 2018). And although statistics of students with disabilities who are visually impaired is not known, the National Centre for Statistics had indicated that students with VI account for 1% of the total students under Individuals with Disabilities Education Act (IDEA) (Danni, 2018).

The pursuit of tertiary education improves employment opportunities for students with VI (Reeds & Curtis, 2012). They argue that with the increased years of education, the disparity of employment rate between persons with and those without VI is minimized yet education can only predict employment only if the student with VI completes their higher education. Accommodation provided by tertiary institutions, therefore, is an important consideration if the students with VI are to succeed in their education pursuit.

Correa-Torres, Conroy, Rundle-Kahn and Brown-Ogilvie also contend that the increased enrolment of students with disabilities in tertiary institutions can be attributed to civil rights movements, advanced technology and improved provision of special education services in US. For instance, the passage of American with Disabilities Act (1990) mandates institutions of higher learning to provide equal access to students with disabilities (Correa-Torres, Conroy, Rundle-Kahn and Brown-Ogilvie, 2018). According to Danni (2018), the enactment of the Education for all Handicapped Children Act in 1975 and more recently the Individual Disabilities Improvement Act (2004) had precipitated the inclusion of students with disabilities into regular schools and classrooms. On the other hand, Mole (2012) emphasized that tertiary institutions are bound by section 504 of Rehabilitation Act (1973) to provide reasonable accommodation to students with disabilities.

Reeds and Curtis (2012) conducted studies to examine the perception of staff members involved in providing academic support to students with VI regarding enrolment,

recruitment, application, transition services, support and accommodation in tertiary institutions in Canada. The study found that the percentage of Canadians with VI with diplomas and degrees was similar with the rest of the population. Also, it confirmed that most of the students with VI were more likely to complete their academic programs like any other students in Canada. The study also indicated that tertiary institutions in Canada provided their students with VI with a wide variety of technologies.

In the US, a similar study was carried out by Correa-Torres, Conroy, Rundle-Kahn and Brown-Ogilvie to determine the experience of students with VI receiving support services from higher education institutions. The study found that most of the tertiary institutions had created disability support services to cater for the unique needs of their students with disabilities. The research confirmed that most of the tertiary institutions were efficient in procuring educational equipment and technologies for students with VI. It also confirmed that the Disability Support Services were quick to repair and replace items in most tertiary institutions.

The inclusion of students with VI in tertiary institutions of both countries nevertheless had several challenges. Reeds and Curtis pointed out that there was poor quality and timelines in the provision of alternative print format. As a result, students with VI had to wait longer to access learning materials. Likewise, study by Correa-Torres, Conroy, Rundle-Kahn & Brown-Ogilvie, confirmed a similar predicament in the US when they observed that Braille material was not provided to students with VI unless they pressed hard. Although the studies had indicated that in both countries students with VI had access to a variety of technologies on time, students with VI decried a lack of trained personnel to train them on the use of the technologies (Reeds & Curtis, 2012; Correa-Torres, Conroy, Rundle-Kahn & Brown-Ogilvie, 2018).

The Western world is comparatively well grounded in the practice where students with disabilities are placed in tertiary institutions (Mole, 2012). However, one debate that permeates most of the nations revolves around how their tertiary institutions can adopt Universal Design and Universal Design of Learning to promote full inclusion of students with disabilities (Mole, 2012; Dalton, Cleophas, Fergurson & McKenzie, 2019). According to Dalton, Cleophas, Fergurson and McKenzie, the framework of Universal Design and

Universal Design of Learning offers appropriate opportunity to enhance the inclusion of students with different abilities in the society.

2.4.2 The Inclusion of Students with VI in Tertiary Institutions in Rwanda and Ethiopia

The development of inclusive education of persons with disabilities and special needs is still at its infancy in most countries in Africa. Subsequently, access to quality inclusive education by many persons with disabilities has remained a mirage in most developing countries (UNICEF, 2013). In Rwanda, the genesis of inclusive education can be traced to 1960 when the Roman Catholic missionaries established the first school for students with VI at Gatagara in the Southern Province (Nasiforo, 2015). Since then, the Roman Catholic Church has continued to establish several special schools for students with disabilities in Rwanda. By 2005, there were 20 special schools and centres in the country with enrolment of about 1500 persons with disabilities (Suuba, 2013). Suuba, however, observed that only six of the centres were exclusively involved in the provision of educational services to students with disabilities while the rest were providing medical and related services.

According to Nasiforo, there are several special schools for students with VI established in the country though they are few to fully cater for the prevalent number of students in Rwanda. Furthermore, the few existing schools lack enough Braille writing equipment and textbooks. The available Braille textbooks have been transcribed by teachers though the students are not well versed in Braille (Suuba, 2013). In addition, the provision of education to students with VI was limited to primary schooling. Most of the students with VI were reduced to begging upon completion of their primary school education (Suuba, 2013). It was not until 1997 that the first eight students with VI enrolled to pursue their secondary education in Rwanda.

But since the establishment of the first special primary school in 1960, the country has undergone a lot of milestones especially in the development of its inclusive education. For instance, in 1997 the Ministry of Education set up the department of special education whose role was to coordinate and spearhead education for persons with disabilities in the

country (Nasiforo, 2015). Similarly, in 2000 Kigali Institute of Special Education established a resource centre to cater for people with disabilities (Nasiforo, 2015).

There are several legislations and policies passed by the Rwandese government to safeguard the rights and welfare for persons with disabilities. Most of the legislations and policies resonate with international conventions and protocol on the rights of persons with disabilities such as the UN Convention on the Rights of the Child and African Charter on the Rights and Welfare of a Child (Nasiforo, 2015). In 2003, a new constitution was promulgated in Rwanda. Article 40 specifically safeguards the rights of persons with disabilities to receive quality education by urging the state to facilitate the provision of quality education to such persons (Nasiforo, 2015; Suuba, 2013).

In 2007 the government of Rwanda enacted laws that protect persons with disabilities (Suuba, 2013). Amongst the rights enshrined in the law is the right to receive quality education. In the same year, the government passed Special Needs Education Policy to minimize the barriers to inclusive education for persons with disabilities. Although there are a number of policies on the rights of persons with disabilities, there is a mismatch between what the policies state and what has been implemented on the ground (Mutezigaju, 2018). Bots (2015) was concerned with the rights of persons with disabilities to receive quality education in Rwanda. He observed that there was neither a clear definition of inclusive education nor a clear policy of how to achieve it (Bots, 2015).

The first batch of students with VI was admitted to the College of Education and College of Art and Social Science in 2008 in Rwanda (Nasiforo, 2015). This marked the beginning of inclusion of students with disabilities in tertiary institutions in the country. Despite the government's endeavor to achieve inclusive education for students with disabilities, the country is faced with several challenges such as inflexible curriculum, inappropriate communication, inaccessible and unsafe environment, inadequate and inappropriately trained lecturers and overcrowded classes (Nasiforo, 2015; Mutezigaju, 2018).

In Ethiopia, the constitution promulgated in 1995 provides the legal framework for the protection of the overall rights and entitlements of the citizens including persons with disabilities (Zelelew, 2018). Accordingly, education is a human right as reflected in the

government's endeavor to provide Universal Primary Education (UPE) to its citizens; and the adoption of Education for All (EFA) goals by 2015. Furthermore, the Ethiopian government has ratified the 2006 Convention on the Rights of Persons with Disabilities (CRPD), which recognize the rights of persons with disabilities to receive quality inclusive education at all levels of learning by year 2010 (MOE, 2012).

According to the Ministry of Education, the right to receive quality inclusive education is embedded in the constitution. Whilst Article 25 of the constitution stipulates that all persons are equal before the law; and cannot be discriminated on the account of race, nation, nationality, colour, sex, language, religion or political opinion, Article 4(5) specifically obligates the government to provide rehabilitation support to persons with disabilities (Beyene, Mekonnen & Glannoumis, 2020).

The Special/Inclusive Strategy of (2012) is another way used by the government to anchor inclusion of persons with disabilities in education (MOE, 2012). The purpose of the strategy was to evaluate how the country was fairing regarding the UN Convention on the Rights of Persons with Disabilities (CRPD). The evaluation exercise found out that (CRPD) had been instrumental in the inclusion of students with disabilities at all levels of learning (MOE, 2012). The strategy also initiated the Special Needs Education (SNE) programs in five universities (Addis Ababa, BahirDar, Dilla, Haromoyo & Gondar) as well as introductory courses at all teacher education institutions (MOE, 2012). The purpose was to train adequate manpower for students with disabilities.

The government has taken further steps to promote inclusion of persons with disabilities in the tertiary institutions. For instance, the National Plan of Action for Persons with Disabilities (2012-2020), aims at enhancing the inclusion agenda by increasing the enrollment of students with disabilities in the tertiary institutions; and training more personnel in special education to serve students with disabilities (Beyene, Mekonnen & Glannoumis, 2020). Furthermore, the government initiated the Education Sector Development Program (2015-2020) that sought to increase the participation of students with disabilities in tertiary institutions by lobbying universities to adapt their campuses to accommodate all students including those with disabilities (Beyene, Mekonnen & Glannoumis, 2020).

According to Teferra et al (2014), more persons with disabilities have access to higher education all over the world yet the equality regarding access has remained unattainable. Beyene, Mekonnen and Glannoumis contend that the enrolment of students with disabilities in tertiary institutions has continued to rise steadily over the years though the rise does not correspond with the exponential increment in the enrolments of students witnessed in recent years. For instance, whereas there were only 398 students with disabilities in tertiary institutions in 2009, the number had increased to 1000 in 2015 and by 2016 the number stood at 1482.

A study by Malle, Pirttimaa and Saloviita (2015) on the inclusion of students with disabilities in the formal vocational education programs in the 5 of the 11 regions of the country found only 28 students with disabilities who were pursuing vocational education. On the other hand, Teferra et al (2014) had done studies to evaluate the situations of students with disabilities in 11 public universities. The study found that the 11 universities had a total of 422 students with disabilities of which 134 (34.6%) had visual impairments, 38 (9.8%) had hearing impairments and 215 (55.6%) had physical impairments. Beyene, Mekonnen and Glannoumis studied the inclusion of students with disabilities at Howassa University situated in the southern part of the country. The university had enrolment of 43,000 students in its eight campuses. The study found that the university had 132 students with disabilities of which 101 (76.5%) had visual impairment, 6 (4.5%) had hearing impairments and 24 (18.2%) had physical impairments.

The studies on the inclusion of students with disabilities in tertiary institutions indicate that inclusion is faced with myriad of challenges (Teferra et al, 2014; Malle, Pirttimaa & Saloviita, 2015; Beyene, Mekonnen & Glannoumis, 2020). According to Teferra et al, one of the challenges is the false premise that demands of students with disabilities are comparatively expensive to cover. Subsequently, the societies are unwilling to provide the students with the necessary facilities and infrastructure. Also, there is a belief that many persons with disabilities do not have capability to pursue many courses (UNICEF, 2013). The other challenges experienced in the inclusion of students with disabilities in the tertiary institutions include lack of adaptive educational materials (Malle, Pirttimaa & Saloviita, 2015), physical barrier, rigid curriculum and lack of trained trainers (Teferra et

al, 2014; Zelelew, 2018; Beyene, 2020). A report from the CRPD on Ethiopian compliance to the convention had urged the government to improve the quality of inclusive education in the country (Beyene, Mekonnen & Glannoumis, 2020).

2.5 DEVELOPMENT OF SPECIAL AND INCLUSIVE EDUCATION IN KENYA

The genesis of education of students with disabilities in Kenya can be traced to after the end of the 2nd World War when a rehabilitation centre was established for the maimed war veterans (Mwangi & Orodho, 2015; Chikati, Wachira & Mwinzi, 2019). The rehabilitation centre was later turned into Thika School for the Blind; and marked the beginning of special education in Kenya (Cherono, 2003). The education for students with disabilities continued to be offered in specialized facilities until 1970 when special units and integrated programs for students with disabilities sprang in the country (Mwangi & Orodho, 2015).

Since 1946 when the first school for students with VI was established in Kenya, several schools have been established by the government with the assistance from various Christian organizations to cater for students with disabilities. The schools cater for students with disabilities in four main areas: mental disabilities, physical disabilities and hearing impairments. According to Chikati, Wachira and Mwinzi, currently Kenya has five special secondary schools and six special primary schools serving students with VI.

The schools were established in the following order: Thika (1946), St Lucy (1958), St Odda (1961), Kibos (1965), Likoni (1965) and St Francis (1978), (Chikati, Wachira & Mwinzi, 2019).

The formal inclusion of students with VI in regular schools is known to have started with Kajiado Integrated Program for the Students with VI in 1972 but it was not until 1989 when the government initiated the Kenya Integrated Education Program (KIEP) to promote the inclusion of students with VI in regular schools. This was a tripartite partnership between the Ministry of Education, Kenya Society for the Blind and Sight Savers International (Mutia, 2020). The program currently has a caseload of 1993 students with VI in 500 primary and 100 secondary schools under KIEP (Kenya Society for the Blind, 2012). The

program has been operating in 20 counties managed by coordinating itinerant teachers based at sub-county office. The Itinerant teachers are specialists trained in the pedagogy of the students with VI. They are responsible for teaching specialist curriculum to students with VI in regular schools.

The partnership has not only been concerned with the education of students with VI but also meeting the medical costs incurred in treating various visual conditions of students with VI (KSB, 2011, KSB, 2012). The tripartite partnership has witnessed several students with VI being supplied with equipment such as Braille machines, white canes and recorders (KSB, 2011). In 2018, Kenya Society for the Blind in collaboration with KIEP was involved in financing the distribution of 320 spectacles to visually impaired students in 10 counties (KSB, 2018). Despite the efforts by the KSB to uplift the status of the students with VI, the society has not reached many students due to limited funding.

In Kenya, the training of teachers of students with disabilities started in 1980 with focus on the three areas of impairments: visual impairment, hearing impairment and mental retardation. While teachers of students with intellectual disabilities and visual impairments were trained at Highridge Teachers College, the teachers of students with hearing impairments were trained at Kamwenje Teachers College (Nasiforo, 2010).

In 1986, the government established the Kenya Institute of Special Education (KISE) through legal Notice No 10. The institute was mandated to do the following: train teachers of students with disabilities; assessment, placement, and rehabilitation of students with disabilities; to undertake research in the area of disability and disseminate the findings to members of the public; to produce assistive devices for students with disabilities; and to be a resource centre for persons with disabilities (KISE, 2018b).

Currently, the institute has expanded its program to include the education of students with autism, gifted and talented, emotional and behavior disorders and education of deafblind students. There are also several public universities that have started programs leading to undergraduate and post graduate degrees in special education. These include Kenyatta, Maseno, Oginga Odinga and Maasai Mara. Although the universities have

trained many teachers for students with disabilities, many of them have not been appropriately placed in the schools where they can serve students with disabilities.

2.6 STRATEGIES OF MAKING CURRICULUM ACCESSIBLE TO STUDENTS WITH VI

Access, participation and support are the three components of inclusive education (Hankebo, 2018). Access means engaging in variety of activities such as removing physical barriers in the environment and improving access to learning materials for all students. Participation means using a variety of learning strategies to enhance engagement in play and learning thereby inculcating a sense of belonging in every student (Hankebo, 2018). On the other hand, support is the provision of appropriate infrastructure in the school system to support every student. Schools must therefore use varied and appropriate methods of teaching and strategies of learning that lead to full inclusion students with VI in the school's programs (Hankebo, 2018).

2.6.1 Methods of Teaching Students with VI

One of the strategies of teaching students with VI is to provide them with concrete experiences (Fast, 2018; Stone, Kay & Reynold, 2019). Such concrete experiences enable them to compensate for the lack of sight that accounts for most of the information acquired in the environment (Malasig & Zhang, 2016). Several studies have shown that tutors of tertiary institutions with students with VI quite often use inappropriate teaching methods that do not suit the students (Sikanku, 2018; Penda, Ndhiovu & Kasonde-Ngandu, 2015; Mwangi & Orodho, 2014). Penda, Ndhiovu and Kasonde-Ngandu further explained that the use of inappropriate methods mainly used to teach sighted students have resulted into low academic performance and participation in academic activities by students with VI.

Visual impairment restricts one's ability to learn through imitation (Radojichikji, 2018; Fast, 2018). Consequently, students with VI have difficulties acquiring some skills which are easily acquired by their sighted peers. Hence there is need to put emphasis on learning by doing to enable students with VI acquire skills easily acquired by sighted students. Such skills like dressing, grooming and personal hygiene may need to be taught to

students with VI (Radojichikji, 2018). Habulezi et al. (2016) asserts that paying attention to individual student with VI during the lesson helps the student grasp the new information better.

Several scholars have emphasized the use of Individualized Education Program to teach students with disabilities (Fast, 2018; Hankebo, 2018). It is a program written for individual students specifying the present level at which the student is functioning. In addition, it specifies the student's strengths and weaknesses. The program also states the long term and short term objectives to be achieved by the student. The strategy can be used to monitor progress made by individual student with VI in a particular program.

2.6.2 Concrete Experiences

One of the inclusive practices is to make learning materials accessible to all students (Dakwa, 2014). This can be achieved through the use of concrete experiences that allow students with VI interact with learning materials through touch (Fast, 2018; Stone, Kay & Reynold, 2019). This way, the students compensate for experiences gained by their peers through use of sight (Malasig & Zhang, 2016). Stone, Kay & Reynold assert that students with VI can gain concrete experiences through the use of learning materials such as embossed diagrams, geometric shapes, maps, graphs and models. The overall goal of concrete learning experiences is to improve understanding of the course materials and concepts amongst students with VI in the learning institutions (Stone, Kay & Reynold, 2019). Agesa (2014) argues the use of concrete experience makes learning real and enhances the ability of students especially those with VI to learn new concepts.

In the absence of sight, students with VI tend to rely on the sense of touch to gain information from the environment (Fast, 2018). Therefore, there is need to prepare tactile learning materials that can assist the students gain the same experiences as their sighted peers. According to Stone, Kay & Reynold, there are varied ways of making learning materials tactile that include but not limited to the use of Braille embossers and raised-printing papers. Whilst embossers offer more flexibility in the preparation of tactile materials as compared to capsule printing, they are generally more expensive (Stone, Kay & Reynold, 2019).

According to Agesa, tactile materials assist students with VI gain useful information concerning qualities of objects such as texture, shape, warmth and temperature hence they get experiences comparable to their sighted peers (Fast, 2018). Despite the usefulness of tactile materials to students with VI in learning, the use of touch slow learning compared to use of sight (Rukwaro et al. 2018). Consequently, students with VI need more time to perceive what is being learned (Stone, Kay & Reynold, 2019).

2.6.3 One-on-One Instruction

Visual impairment restricts one's ability to learn through visual observation (Radojichikji, 2018; Fast, 2018). As a result, the affected person relies on other avenues of learning such as tactual and auditory. Although these avenues of learning provide the student with VI with a lot of information, the information is not as detailed as that provided by sight (Agesa, 2014). This results in students with VI having difficulties in acquiring concepts and skills compared to their sighted peers (Asamoah, Dua, Codjoe, Abdullah & Nyarko, 2018). Therefore, lecturers of students with VI should create time to provide them with one-on-one instructions on specific skills; but also accord them the opportunity to practice the skills they have learned (Habulezi et al. 2016, Stone, Kay & Reynold, 2019). Radojichikj observes that students with VI experience challenges in acquiring competences in Activities Daily Living (ADL) skills such as dressing, grooming and personal hygiene. Hence there is need to practically instruct them on how to acquire the skills. Competences in ADL skills will lead to good grooming; and result in students with VI being socially acceptable by their sighted peers.

2.6.4 Working with Peers

One of the basic practices in the inclusive classroom is to have students with VI work together with their sighted peers (Kapur, 2018; Stone, Kay & Reynold, 2019). This practice promotes social interaction between the students with varied abilities in the classroom. It results in regular students developing a positive attitude towards their colleagues with VI (Parvin, 2015; Kapur, 2018). Eventually, all students build a positive social relationship which exits beyond schools (Stone, Kay & Reynold, 2019). The co-existence of persons with disabilities and typically developing peers in the society is the

essence of inclusive education as envisaged by Salamanca Conference of 1994 (Hankebo, 2018).

Stone, Kay and Reynold, observe that there are varied pedagogical skills students develop as they work together. For instance, when the sighted students verbalize the components of the problem to students with VI, those with VI will gain from the verbal descriptions provided by their sighted peers (Stone, Kay & Reynold, 2019). Furthermore, sighted peers will read for students with VI what has been written on the board (Parvin, 2015). This mutual relationship that exits between students with VI and their sighted peers in the classroom helps to build a cohesive society where people of varied abilities are valued and celebrated (Hornby, 2015).

2.6.5 Utilization of Auditory Resources

The use of auditory resources is a strategy that can be adopted by tertiary institutions to enable students with VI access curriculum (Kapur, 2018; Stone, Kay & Reynold, 2019; Mboshi, 2018). In the absence of sight, people rely more on auditory of and kinesthetic senses to receive information from the environment (Agesa, 2014). However, information coming from auditory channel cannot be revisited like the visual and tactile information (Mboshi, 2018; Stone, Kay & Reynold, 2019). So, students with VI have challenges revising lectures presentations especially if the handouts are not available. Recording the information can assist students with VI revisit them latter. Kapur (2018) observes that the use of audio cassette and compact discs can enhance the learning process amongst students with VI. There is evidence that students with VI have a better memory of auditory information compared to their sighted peers (Stone, Kay & Reynold, 2019; Klingenberg, Holkesvik & Augestad (2019). Mboshi (2018) reiterates the need to provide notes on audiotapes to students with VI during lectures to lessen their burden of having to write the notes.

2.6.6 Handouts and Braille Version

Braille is a system of writing that has revolutionized the education of students with VI over several centuries. Through the use of Braille, students with VI access and use information like their counterparts with sight (Stone, Kay & Reynold, 2019). Hence there is need to

provide them with the Braille version of handouts as a strategy to access curriculum. Quirke, McCarthy and McGuckin (2018) assert that it is easier to provide students with VI with Braille versions of the handouts than to provide them with the entire textbook In Braille. Despite the usefulness of Braille version of handouts to students with VI, their preparation is a complicated process especially if the tertiary institution must source the translation services from outside agencies (Sikaku, 2018).

However, the process is less tedious if the tertiary institution has its own embosser in a resource room. Fast (2018) argues that the preparation of the Braille version of the handouts takes time and requires a lot of planning by the concerned lecturer. Also, delays in providing students with VI with handouts in accessible version made them develop a sense of rejection in the inclusive classrooms (Opie, 2018). Despite the complication involved in the preparation of Braille version of handouts, the use of refreshable Braille has become useful equipment to the students with VI (Stone, Kay & Reynold, 2019). It means that print handouts can be accessed by students with VI without having to go through the translation process.

Although Braille is a useful medium of writing and reading to students with VI, it has several limitations. For instance, several studies have shown that many lecturers in tertiary institutions where students with VI have been included are not versed with reading and writing Braille (Mng'ong'ose, Ngoboka, Kavenuke & Ndekwa, 2017; Dakwa, 2014; Sikaku, 2018). This results into limited interactions between the students with VI and lecturers especially in science and mathematics (McCarthy & Shevlin, 2017). Consequently, some students with VI are unable to access important components of the curriculum. According to McCarthy and Shevlin (2017) lack of knowledge of Braille mathematics notation by the lecturers is the main reason beyond myriad challenges experienced by students with VI in learning mathematics.

Some students are unable to read Braille due to problems associated with touch sensitivity (Mboshi, 2018). Students who lost their sight early in life are likely to have well developed touch sensitivity compared to those who acquire VI later in life. Those who acquire VI later are likely not to develop better touch sensitivity, and hence may experience difficulties in acquiring Braille literacy skills. In this regard, research has shown

that some students with VI experience constraint in reading and writing Braille (Mboshi, 2018). Therefore, lecturers of such students should be patient with them as they may be experiencing psychological trauma associated with VI or have challenges in developing touch sensitivity.

The acute shortage of course textbook in Braille is the other problem associated with Braille in many tertiary institutions (Dakwa, 2014; Mboshi, 2018). Consequently, many students with VI are forced to rely on their notes to revise at home and other times (Mboshi, 2018). This disadvantages them as quite often their notes are incomplete due to the high pace of teaching that characterizes many lecturers who are not versed with techniques of teaching students with VI. Perhaps this is the reason why there is a dire need to provide them Braille version of handouts (Stone, Kay & Reynold, 2019).

2.6.7 Adapting Methods of Assessment

Formative assessment is one of the important components of most education courses that require serious considerations regarding inclusion of students with VI (McCarthy & McGuckin, 2018). The standard examination procedure and format are likely to pose challenges to students with VI (McCarthy & McGuckin, 2018). Therefore, there is need to adapt methods used in the assessment of students with VI to conform to their needs. Students with VI need extra time to execute a task compared to their sighted peers (Agesa, 2014; Kapur, 2018; Asamoah et al., 2018), so giving them extra time during examination will enable them to complete the task (Kapur, 2018).

Several factors contribute to slowness of this cadre of students. Tactual learning is slow as students have to consecutively touch different parts of an object to understand its qualities; the use of sight allows one to understand all the qualities of an object at a glance (Agesa, 2014). Also, it is more difficult to read Braille than print. Reading Braille involves perceiving individual dots and having a mental picture of the letters and words formed (Lourens & Swartz, 2016; Korir, 2015). On the other hand, reading print may involve seeing the whole word at a glance. Furthermore, students with low vision are known to take a longer time to read a text compared to students with normal vision (Rukwaro et al. 2018; Kapur, 2018). Perhaps these are the reasons why the standard examination format

and procedures can impose assessment barriers to students with VI (McCarthy & Shevlin, 2017).

There are varieties of strategies that can be used to accommodate students with VI during assessment (McCarthy & Shevlin, 2017). One of the strategies is to accord the students an opportunity to have extra-time during examinations (Kapur, 2018). While students with low vision may require an addition of a half the allocated time, those who are blind may require as much as twice of the allocated time (Kapur, 2018). The other strategies of accommodating students with VI during assessment in tertiary institutions include receiving examination in accessible format, spelling and grammar waiver as well as allowing them to type their work (McCarthy & Shevlin 2017). Furthermore, tertiary institutions can accommodate students with VI by providing them with modified exam papers, having the student sit his/her examination in a separate room and providing them with readers and scribes during examinations (Hewett et al., 2018).

2.7 RESOURCES USED BY TERTIARY INSTITUTIONS TO INCLUDE STUDENTS WITH VI

There are a number of resources required by tertiary institutions to effectively include students with VI in their programs. According to Zelelew (2018), the mere placement of students with VI in the tertiary institutions without considering their needs would not serve any useful purpose. Tertiary institutions require human, physical, technological and financial resources to effectively include students in their programs.

2.7.1 Devices and Assistive Technologies used to Educate Students with VI

Sight accounts for 80% of all the information received by an individual from the environment (Mbugua, Odini & Chege, 2018). As a result, students who are blind experience several limitations in accessing and benefiting from information in the environment (Wood, 2014). This scenario has resulted in a situation whereby students with VI were excluded from participating in many useful curriculum areas that resulted in missed opportunities in the past (McCarthy & Shevlin, 2017). However, the use of varied and innovative assistive devices in schools seems to have changed the scenario.

Whilst Wood (2014) argues that assistive technologies have enabled students with VI access information and hence participate and benefit from educational programs, Klingenberg, Holkesvik & Augestad (2019) points out that the use of technology has enabled students with VI access new and valuable information that complements the use of tactile learning materials, Braille, Large print and audio information.

2.7.2 Braille Writing Equipment

There are different types of technologies used by students with VI in tertiary institutions that range from simple to sophisticated gadgets (Sight savers, 2018). For instance, slate and stylus is a simple device for writing Braille. The device has the advantage of being light, robust and relatively affordable (Sight savers, 2018). It can easily be carried around and used by students with VI. Conversely, its use can be physically demanding and intellectually taxing to students with VI especially if they have large quantity of text to be transcribed (Sight savers, 2018). On the other hand, Perkins Braille machine is a mechanical device capable of writing Braille quickly and relatively easily (Marug'an, Ruiz & Tejera, 2015).

Consequently, it is the Braille machine of choice to majority of students who are blind in tertiary institutions. Despite Perkins Braille machine being credited for being more efficient and durable, it is generally heavy and expensive (Adongo, 2011). Moreover, Perkins Braille machine is known to produce a lot of noise when being operated that can easily irritate other students in the lecture hall.

The Braille Note Taker is a technology used by students with VI in tertiary institutions. It is light, efficient and portable digital technology for writing Braille that does not produce much sound when being operated. It does not distract other students seated in the close vicinity to student with VI. Thus, the device is more appropriate for students with VI in tertiary institutions where lecture hall can have many students. In addition, it is small and can easily be carried around by students with VI without them being singled out by others as being visually impaired.

On the other hand, an Embosser is an efficient digital technology for producing large quantities of Braille text materials within a short period of time (Omede, 2015). Due to its

efficiency, the embossing machine has enabled tertiary institutions prepare many copies of handouts or examination papers for students with VI within a short time. This has made inclusion practicable and beneficial to students with VI in the tertiary institutions.

The advent of refreshable Braille display is an innovation in the education of students with VI. The device has a display for tactile Braille; and does not require any paper to write on. Hence it is inexpensive to operate (Ramos & Andrade, 2014). Furthermore, it has internal memory for storing digital information in files which can either be retrieved in Braille or print (Stone, Kay & Reynolds, (2019). Stone, Kay and Reynolds stipulate that refreshable Braille display can be linked to other devices by internet and hence can receive and transmit information in form of print. Once the information is received in form of print text, it can then be converted and read as tactile Braille by a visually impaired student. It allows lecturers to prepare and transmit handouts to their students who are blind without having to convert it into Braille version.

2.7.3 ICT with Assistive Technology

The use of ICT in the provision of quality education to students with VI has been emphasized by several scholars (Ramos & Andrade, 2014; Stone, Kay & Reynolds, 2019). It enables students with VI to access information and general curriculum in a way that was not possible in the past. Therefore, there is need for tertiary institutions to establish online resources if they are assisting students with VI (Ramos & Andrade, 2014).

The online resource comprises of computer laboratories fitted with appropriate softwares to allow access of information by students with VI. Screen Readers are softwares that convert text to speech once they are installed in laptops or desktops (Stone, Kay and Reynolds, 2019). They allow students with VI to access information that is in the computer through audio output. Mboshi (2018) states that Non-Visual Desktop Speech Access (NVDA) and Jobs Access with Windows (JAWS) are the most common screen readers in use. Despite their usefulness in educating students with VI, they require the user to have laptops, tablets and other equipment. Also, modern phones with varied learning aids of accessing information can be used by students with VI especially if they have audio output

(Ramos & Andrade, 2014). Stone, Kay and Reynolds (2019) assert that it is essential to use the correct version of the phone with compatible screen reader.

2.7.4 Use of Online Books

There are many online textbooks useful in the education of students with VI (Stone, Kay & Reynolds, 2019). They can be accessed by students with VI on their computers if they have internet services. As a result, students with VI can access a wide range of information. Also, online textbooks provide the students with freedom to choose what to study at a given time. According to (Hewett et al, 2018), the online materials including course books, journals and newspapers can be accessed by students. However, there are several course books which are not online. Tertiary institutions should collaborate with the publishers to ensure that some of the course books are offered online. In circumstances where publishers are unable to offer the course books online, the respective tertiary institutions can take initiative and digitalize the course books by having them scanned and uploaded on the online platform. Scanning hardware is therefore an important assistive device in the education of students with VI (Omede, 2015).

2.7.5 Low Vision Devices

Students with low vision can be encouraged to use low vision devices to execute near, medium or distant visual tasks. According to Sight savers (2018), optical low vision devices have inbuilt lens system; and have the capacity to magnify the images of objects being observed by visually impaired persons (Maindi, 2018). There are a variety of low vision devices that include stand magnifiers, handheld magnifiers, head borne magnifiers, CCTV and telescopes (Sight savers, 2018). The devices can be used by students with low vision to read print, view what has been written on the board, and to look at objects in the distance. They enable students with low vision function independently in the environment. Furthermore, students with VI can be encouraged to use non-optical low vision devices such as reading stand, thick-tipped felt pens and wide line paper (Maindi, 2018) to enhance their visual functioning within the environment of the tertiary institutions (Sight savers, 2018).

2.7.6 Power Point Presentations

Power Point materials offer alternative means of enabling students with VI access curriculum materials. The slides used during the Power Point presentations should be accompanied with software that converts text to speech (Stone, Kay & Reynolds, 2019) thus allowing students who are blind to access the information being presented through auditory output. Also, the slides should be prepared using visually stimulating colours with appropriate print size to allow access by students with low vision (Stone, Kay & Reynolds, 2019). Furthermore, slides with pictures should be accompanied by alternative text that allows screen readers to convey the basic meaning of the pictures to students with VI.

2.7.7 Mobility Equipment

Visual impairment seriously affects the person's ability to move independently in the environment (Agesa, 2014). The limitation seriously affects the students with VI's ability to move from one point to another in the tertiary institutions which are normally expansive (Otyola, Kibanja & Mugagga, 2017). There are various mobility aids that students with VI can use to navigate the environment, but the white cane is the most commonly used mobility aid to detect obstacles and protrusions on the way (Otyola, Kibanja & Mugagga, 2017; Agesa, 2014). Sight savers (2018) opined that mobility aids enable students with VI to move safely and independently in the environment. And while there are different types of white canes in use, the most common ones are the collapsible and the non-collapsible (Adongo, 2011). Although white canes can assist students with VI with mobility in the environment, their use requires students with VI to have basic orientation of the place (Agesa, 2014). The uses of varied mobility aids accompanied by the best orientation skills allow students with VI to function independently in the tertiary institutions.

Scholars have reiterated the important role of assistive technologies in enhancing the inclusion of students with VI in tertiary institutions (Lucky & Achebe, 2013; Hewett et al., 2018; Fast, 2018; Klingenberg, Holkesvik & Augestad, 2019). The use of equipment such as laptop computers, talking calculators, note takers and closed-circuit television (CCT) assists students with VI to participate in the academic activities of the tertiary institutions. Despite their usefulness, lack of accessibility to assistive technologies has been cited by

many studies as a factor that hinders inclusion of students with VI in tertiary institutions (Otyola, Kibanja & Mugagga, 2017; Habulezi et al, 2016, Sikanku, 2018; Mboshi, 2018). In other circumstances, students with VI cannot carry out research due to lack of internet services and adapted computers (Habulezi et al, 2016).

2.7.8 Human Resources

Tertiary institutions require different skilled human resources to effectively serve the students with VI. According to Zelelew (2018), they should have trained staff members such as lecturers, librarians, specialist education teachers, Braille transcribers, note takers, ICT technicians, student counselors and peer mentors to support students with VI. Although the personnel play varied but complimentary roles in the education of students with VI, the role of specialist teachers as agents of change is of significance in the learning institutions (McLinden, Ravenscroft, Douglas, Hewett and Cobb, 2017).

Specialist teachers play a significant role in the education of students with disabilities (Adongo, 2011). According to McLinden et al. (2017), specialist teachers are those who have higher and specific qualifications above their initial teaching qualifications. In this regard, having additional qualifications equip them with skills to teach specialized education program to students with disabilities (Adongo, 2011). The teachers have six distinct roles in the pedagogy of students with VI in the tertiary institutions that include: establishing student's learning needs and strengths; mediating between the student and the immediate environment; facilitating the interaction between the student and distal environment; shaping the distal influences; engaging with, and being guided by national and international policies; and promoting progressive and mutual accommodation between active students and changing learning environment in order to develop and promote independence (McLinden et al. 2017).

The specialist teacher plays an important role in establishing student's needs and strengths that basically involves functional visual assessment in terms of visual acuity, colour vision and other visual skills (McLinden et al., 2017). Fast (2018) asserts that functional visual assessment will enable the teacher to ascertain the appropriate reading medium of the student with VI in terms of whether he/she uses large print or Braille. The

assessment forms the basis of providing curriculum materials in accessible version to students with VI (Quirke, McCarthy & McGuckin, 2018). Also, he/she should assess the learning needs of students with VI in terms of quality and quantity of lighting used in the lecture halls and other facilities (Opie, 2018). Furthermore, he/she may assess the functional skills of students with VI to determine whether he/she has mastery of technology, orientation and mobility and social skills (Hewett et al., 2018).

Specialist teachers should mediate between the students with VI and the immediate environment (McLinden et al., 2017). In this context, they should act as a link between the students with VI and members of teaching staff, regular students, college administration and support staff (Adongo, 2011). This role may require him/her to organize in-service training for the members of teaching staff to induct them on strategies of making the curriculum accessible, environmental modification, and technological innovations and equipment required by students with VI (Quirke, McCarthy & McGuckin, 2018). As a result, members of staff will be equipped with appropriate skills and knowledge to support the students with VI in their program. Also, specialist teachers are expected to liaise with the college administration to procure new assistive technology for use by students with VI (Opie, 2018).

The inclusion of students with disabilities in regular educational programs requires constant consultation amongst stakeholders (Adongo, 2011). Such consultations are necessary if students with diverse abilities are to receive quality services. According to Parvin (2015), there should be a good working relationship between the specialist teachers and the regular teachers in an inclusive education program of student with VI. The deliberations of the consultations should focus on the best ways to deliver the curriculum to students with VI (McLinden et al., 2017). Also, specialist teachers should advise lecturers on how to adapt their teaching to meet the educational needs of students with VI in their classrooms (Hewett et al., 2018). Apart from having regular consultations with lecturers, specialist teachers may need to work closely with Braille transcribers to adapt learning aids for students with VI (Opie, 2018).

In tertiary institutions, the specialist teachers should facilitate the interaction between the students with VI and distal environment. This may involve them liaising with other

important agencies to provide the necessary services to students with VI (McLinden et al., 2017). The specialist teacher can also liaise with organizations such as Non-Governmental Organizations (NGOs), Department of the Ministry of Education and other organizations for effective service delivery to students with disabilities. Whilst the specialist teacher may liaise with the NGOs to provide assistive devices to students with VI, she/he may also consult the department of the Ministry of Education over budgetary allocations to them. Overall, the students with VI should get the appropriate support in the tertiary institutions.

Moreover, specialist teachers should engage and influence outside agencies to positively influence their decisions concerning students with disabilities. According to McLinden et al. (2017), specialist teachers should know and understand how to engage with and influence other agencies concerning national assessment, legislation, evident based practice and support for students with VI under their care. This way, they may influence enactments of legislation concerning persons with disabilities. For instance, the government may adopt appropriate procedures of assessment in the national examination at all levels of education thereby enhancing the inclusion of students with disabilities in the society (McCarthy & McGuckin, 2018). However, the specialist teachers must ensure that legislations enacted by the government concerning persons with disabilities are in tandem with the international protocols on persons with disabilities.

Furthermore, specialist teachers are members of staff who belong to specific departments. As such, they are allocated subjects to teach in their respective departments or faculties (Hewett et al., 2018). Occasionally, the specialist teacher may be called upon to provide individualized training to a newly blinded student in a specific area of expanded curriculum (Opie, 2018). In this regard, students with VI may require individualized training in areas of expanded curriculum such as assistive technology, orientation and mobility and Activities of Daily Living (ADL). These learning areas inculcate functional skills which are needed for self-independence in the society (McLinden et al., 2017; Opie, 2018).

Braille transcribers play a vital role in the inclusion of students with VI in the tertiary institutions. They translate text from print into Braille and vice versa thereby enabling the

students with VI access the curriculum (Adongo, 2011). Also, they translate scripts of students with VI into print thereby facilitating marking of the scripts by lecturers who are not conversant with Braille. In addition, they assist in making tactile maps and diagrams for students with VI. Their work can be laborious especially if they were to translate text in print into Braille manually. However, if they incorporate the use of appropriate technologies such as an embosser, the work becomes less complicated (Omede, 2015).

2.7.9 Physical Resources for Students with VI

Students with VI should have access to equitable physical resources of the tertiary institutions in which they live, learn and stay (Zelelew, 2018). Buildings hosting the administrative blocks, lecture halls, residential halls and sanitary facilities should be accessible, safe, welcoming and functional for use. The buildings can be made more accessible to students with VI by having wide and sliding doors and windows (Zelelew, 2018). Also, the stairs should be non-slippery and clearly marked at the edges with contrasting colours and wide landing space (KISE, 2017). Furthermore, the buildings should be well illuminated to increase visibility for students with low vision (Maindi, 2018).

Technology has made it possible for students with VI to access more information than in the past period, and so the use of online sources has become indispensable in the education of students with VI (Hewett et al., 2018; McLinden et al., 2017). Tertiary institutions should have well-equipped computer laboratories with appropriate softwares that convert text in print into speech thereby enabling students with VI to access the information (Stone, Kay & Reynold, 2019). Computer laboratories should be located in serene environment to allow students with VI to study without interruptions (Hewett et al., 2018).

Tertiary institutions require well equipped resource centres if they were to succeed in the inclusion of students with VI. The resource centres should be equipped with adequate and well serviced assistive technology and equipment such as embosser, photocopiers, closed circuit television (CCTV), Braille machines and optical devices (Hankebo, 2017; Stone, Kay & Reynold, 2019). Moreover, it should be manned by skilled staffs that are well versed with the operations, repair and maintenance of the equipment. The main role

of the staff in the resource centres in the tertiary institutions is to make curriculum materials in accessible version for students with VI.

2.7.10 Financial Resources

Tertiary institutions should have a well-structured system of funding to effectively serve students with VI (Zelelew, 2018). Funds are required by the institutions to be utilized in various ways that include establishment of infrastructure, procurement of assistive technology; and hiring of skilled human resources to serve students with VI. Several studies have confirmed that lack of good infrastructure in the tertiary institutions is a hindrance to inclusion of students with VI (Zelelew, 2018; Agesa, 2014; Otyola, Kibanja & Mugagga, 2017). A well-structured system of funding will enable tertiary institutions establish well equipped resource centres with adequate assistive devices and hire skilled human resources (Hankebo, 2017). Consequently, students with VI will not only be able to access the curriculum but also participate in other activities of their institutions.

Research has shown that more students with VI now proceed with their studies to tertiary institutions than previous years (Otyola, Kibanja & Mugagga, 2017; McCarthy & Shevlin, 2017). This has been made possible by innovations in technology that has led to the production and use of varied assistive devices for students with VI to access information (Stone, Kay & Reynold, 2019). Tertiary institutions require funds to establish online resources (Hewett et al., 2018) and equipment that include computers with appropriate softwares and internet services (Ramos & Andrade, 2014). The resources are important if students with VI are to be fully included in the programs of tertiary institutions.

Furthermore, tertiary institutions should employ proportionately more staff to serve students in their campuses than if students with VI were not present (Zelelew, 2018). Students with VI quite often require individualized attention due to restriction to manipulate the environment imposed on them by lack of sense of sight (Agesa, 2014). The deployment and utilization of skilled personnel such as Braille transcribers, readers and ICT technicians necessitates tertiary institutions to have a clear source of funding (Zelelew, 2018).

2.8 ENVIRONMENTAL MODIFICATION TO ACCOMMODATE STUDENTS WITH VI

The inclusion of students with disabilities requires modification in the curriculum content, strategies and approaches of teaching and learning as well as modification of physical and social environment (Sibanda, 2018). This will enhance access and participation of all students including those with VI in the school programs (Hewett et al., 2018).

2.8.1 Social Adjustments in the Tertiary Institutions

Inclusive education has the propensity of promoting social acceptance, right and overcome discriminating practices (Asamoah et al, 2018). However, tertiary institutions must cultivate a culture that recognizes and values students with disabilities to promote social acceptance. According to (Parvin, 2015), tertiary institutions that engender social climate that is welcoming to all students including students will enable them succeed in their academic programs. Furthermore, a warm welcoming culture of the tertiary institutions will make students with VI feel valued and accepted; and hence will promote social cohesion and integration between students with VI and their typically developing peers (Stone, Kay & Reynold, 2019; Oranga, Chege & Mugo, 2020). On the other hand, high schools should manage the transition of their students to tertiary institutions well (Diaz et al. 2016). A well-managed transition will make the students with disabilities develop strong feelings of independence and confidence from the beginning of their course (Diaz et al. 2016).

Research has shown that tertiary institutions characterized by conducive, warm and welcoming social atmosphere towards students with disabilities will have positive impact on the lives of the students (Ajuwon et al., 2015; Papuda-Doliska, 2017). As such, students with disabilities are likely to feel more comfortable and less stigmatized. Also, tertiary institutions that have embraced inclusion of persons with disabilities are likely to enact policies and regulations that will support them while they are in the campuses (Mugambi, 2017). Institutions with clear policies and regulations towards students with VI are likely to establish the necessary infrastructures that support them (Hankebo, 2017) and hence, enhance their inclusion in the society.

Tertiary institutions can create a supportive social climate for the inclusion of the students with VI in various ways. The regular students can have positive social interactions with the students with VI so that they have relationships characterized with love, mutual respect and friendship (Asamoah et al., 2018). As a consequent, students with VI will avoid developing a sense of loneliness, isolation and rejection (Jessup, Bundy, Hancock & Broom, 2018). Furthermore, regular students can provide support to their peers with VI in the classrooms by reading for them what is written on the boards thereby helping them know the important points of the lecture (Parvin, 2015). One of the challenges experienced by the students with VI is difficulties in navigating new environments (Lourens & Swatz, 2016). In this regard, sighted students can act as guides to students with VI thereby assisting them move from one lecture theatre to another (Hewett et al., 2018). This will save the students with VI the agony of finding places in the unfamiliar environments of tertiary institutions.

Lecturers also can provide support to students with VI in different ways. They should prepare handouts and other course materials in an accessible version to the students. As studies have shown, students with VI develop a sense of rejection in the tertiary institutions if they do not receive course materials and handouts in accessible formats on time (Stone, Kay & Reynold, 2019). Lecturers should also provide one on one support to students with VI in academic areas where they experience some difficulties (Stone, Kay & Reynold, 2019). In addition, specialist teachers should create time and assist students with VI to operate newly acquired assistive technology (Opie, 2018). When students with VI succeed in their academic work, they will feel comfortable, valued and well accommodated by the tertiary institutions. Despite the varied support the students with VI receive from their teachers, they are unhappy with the limited time their teachers accord them in the inclusive schools (Asamoah et al, 2018).

There are other members of the tertiary institutions that have different roles to play in the inclusion of students with VI. One of the specialists is orientation and mobility expert who can provide training to students with VI (Fast, 2018). As a result, students with VI will be acquainted to the new environment of the tertiary institutions thereby making it possible for them to navigate it better. According to Lourens & Swartz (2016), one of the challenges

encountered by students with VI in the tertiary institutions is the unfamiliar environment characterized by potholes and ragged pathways. With the help of an expert to navigate the space, the students will comfortably settle in the new unfamiliar environment. The support staffs also have a role to play in helping the students with VI settle in tertiary institutions. They can read or take notes for the students thereby enhancing their participation in the academic programs (Omede, 2015).

2.8.2 Modifications of the Physical Environment

Visual disability put restrictions on one's ability to move from one point to another (Agesa, 2014; Dakwa, 2014). As a result, students with VI experience challenges in moving around especially in unfamiliar crowded and even dangerous physical environments (Lourens & Swartz, 2016). Therefore, adjustments in the physical environments of tertiary institutions should be done to enable the students move efficiently and safely (Zelelew, 2018). For instance, a study by Otyola, Kibanja and Mugagga (2017) noted that the visually impaired students experienced challenges with orientation and mobility within their universities due ragged environment. They also complained of difficulties in accessing some lecture halls and offices. According to Hewett et al. (2018), one of the inclusive practices that should be embraced by the tertiary institutions is putting restrictions on the number of movements of students with disabilities. However, when it is not possible to restrict movement of the students, it is a good inclusive practice to provide them with a timetable in advance (Hewett et al., 2018). This will give them ample time to move to lecture halls.

Pavements in the tertiary institutions should not pose danger to students with VI. The presence of potholes, low-hanging branches and road works can be dangerous to students with VI (Lourens & Swartz, 2016). Also, it is not prudent to have manholes on pavements used by the students as it can be a potential source of danger. According to Sikaku (2018), rugged physical environment does not easily facilitate the movement for students with VI. It is poses serious danger to students with visual impairments. Consequently, the tertiary institution should have tactile paving; clear signage and good lighting in order improve accessibility for students with VI (Hewett et al., 2018). This will

result in students with VI being able to move safely and efficiently without hurting themselves.

According to Zelelew (2018) tertiary institutions can make buildings more accessible, comfortable, attractive and more functional by having appropriate designs and development of the entrances, pavements and fixtures. In this regard, doors of buildings should have sensors, while windows should be sliding to avoid students hurting themselves on open shutters (Zelelew, 2018). Besides, the stairs should be unwinding, non-slippery and clearly marked at the edges with wide landing space (KISE, 2017). Although buildings and other facilities should be accessible to students with VI, studies have painted a different picture. A study by Omede (2015) indicates that most buildings of tertiary institutions are inaccessible due to curved stairs, narrow stairways and high steps. As a result, students with disabilities are disadvantaged.

Moreover, the physical arrangement and organization of the classrooms should be given serious considerations. A good physical arrangement of the classrooms and lecture halls will facilitate easy mobility of students with VI in and outside the room (Agesa, 2014). Mboshi (2018) emphasizes that the classrooms for students with VI should be spacious and have well-arranged furniture. Kapur (2018) points out the need to have a classroom with proper furniture, seating arrangement and good heating and cooling system for different weather seasons. This calls upon the tertiary institutions to have well-arranged lecture halls in their institutions to successfully accommodate students with VI and other disabilities.

2.8.3 Seating Arrangement in the Classroom

The seating positions of students with VI should be considered in an inclusive setting. Dakwa (2014) argues that the seating positions of students with disabilities should allow them access learning materials within the classroom. Habulezi et al. (2016) states that students with VI should strategically be positioned in the front seat near the lecturer and the board. This arrangement will allow the students with VI to auditory follow the lecture while those with low vision will read what is written on the boards. Adongo (2011) emphasizes the need for students with low vision to sit in locations where there is

appropriate illumination that suits their needs within the classroom. When all the concerns on lighting are taken into account, students with VI will be accommodated in regular classrooms.

2.8.4 Levels of Illumination

Levels of lighting in the building play a key role in the accommodation of students with VI (Hankebo, 2018; Fast, 2018). Adongo (2011) emphasized that the ability of students with VI to carry out a visual task improves with increased illumination; and that students with VI require as twice the level of illumination compared to their sighted peers. Fast (2018) argues that natural lighting from windows and fluorescent light that points towards the floor is appropriate for students with light sensitivity.

Maindi (2018) noted that most classrooms did not have adequate lighting for students with VI, and some with photophobia were affected by glares from reflections from shiny surfaces. He stresses the need to have classroom arrangements whereby students with VI either have too much or too little light directed at them depending on their condition. While most students with low vision are likely to require high level of illumination, some students with light sensitivity may need reduced illumination. For instance, students with cataract have light sensitivity and hence require reduced illumination. Tertiary institutions can reduce the level of illuminations for their students by using louvers, blinds and tinted glasses in the windows (Dakwa, 2014).

2.9 CONCLUSION

This chapter deliberated on inclusion of students with VI in tertiary institutions. Whilst several studies have been done on the inclusion of students with disabilities including those with VI in other parts of the world (Nasiforo, 2015; Zelelew, 2018), few studies has been done in Kenya. Thus, there is need to study inclusion of students with VI in Kenya in order to ascertain the challenges and formulate the strategies to overcome them. This will lead tertiary institutions to make concerted efforts to accommodate the students by employing appropriate strategies that will result into students having access to the curriculum. While there are various strategies that can be used by the lecturers, others may require the institutions to spend money to procure the appropriate resources. Also,

the institutions may require varied physical and human resources to successfully accommodate students with VI. Furthermore, tertiary institutions require modification in their physical and social environments to accommodate this cadre of students with unique learning needs. In the final analysis, tertiary institutions should put in place an operational policy framework to make the inclusion of students with VI practicable and beneficial to them. The next chapter explores the theoretical framework of the study, symbolic interactionism.

CHAPTER THREE

THEORETICAL FRAMEWORK: SYMBOLIC INTERACTIONISM

3.1 INTRODUCTION

This chapter presents theoretical framework that formed the foundation of this study. It begins with discussions on the meaning of symbolic theory, understanding symbolic interactionism theory as well as creation of meaning through interaction. This is followed by definition of symbolic interactionism theory as well historical perspectives on the development of symbolic interactionism theory. Then, there is a review of literature on the principles of symbolic interactionism theory, core competencies of symbolic interactionism theory as well as the application of symbolic interactionism theory in varied studies. The chapter also looks at the role of communication in the interaction; and in the formulation of symbolic interactionism theory. Thereafter, the chapter discusses how repetition of an act led to better understanding of the act and hence better meaning. A section on criticism levelled against symbolic interactionism theory will follow before the conclusion.

3.2 UNDERSTANDING THE THEORY OF SYMBOLIC INTERACTIONISM

A symbol is a stimulus that is abstract and arbitrary to which people attach meaning (Redmond, 2015). In other words, symbols are things that represent other things (Redmond, 2015). Redmond contends that symbols have meaning solely by virtue of consensus among the group of people using them. Symbols used by a group of people constitute a language (Seal, 2015). Likewise, language can be considered as a collection of symbols organized according to the rules of communication by a particular group of people (Carter & Fuller, 2015). Accordingly, symbols include words, objects and almost all acts around us have symbolic meaning (McLuhan, 2014).

Through communication, we are able to use symbols in words to coordinate, connect and have ideas. Thus, we can develop symbols as individuals and as a group in the society. This results in a scenario whereby symbols are created by the society, and members of

the society are dependent on the use of the symbols to interact and communicate with one another as illustrated in Figure 1.

Figure 3.1: Symbolic Interactionism
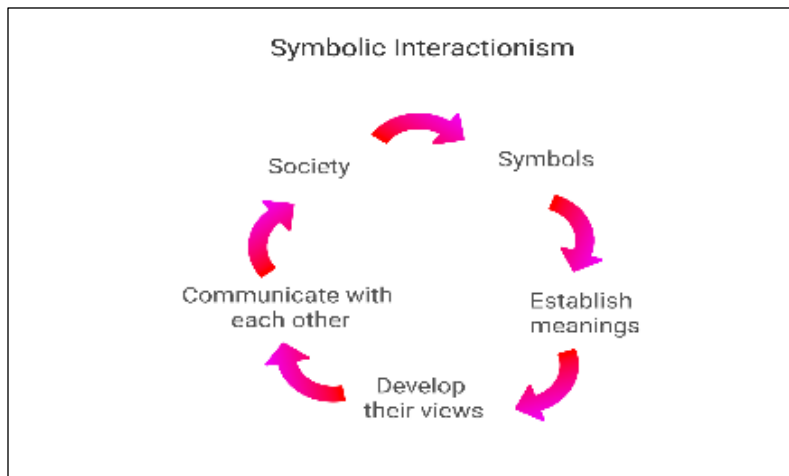
In the context of this study, the inclusion of students with VI in the tertiary institutions accord lecturers, students, and other members of staff the opportunity to interact with each other. They can gain new knowledge, experience, and attitude (Green, 2015). The interactions are made possible through the use of symbols such as oral communication, written, gestural and documents. The use symbols in communication helps people acquire meaning for themselves from not only their interactions but also from their experience.

According to Green, symbolic interaction concerns how people develop meaning about objects and other people in the environment based on their experiences derived from the process of interaction. Hence, the symbolic interaction can be used to describe meanings related to teaching students with VI in the inclusive classroom that will eventually influence lecturers' practices. Nwankwo and Nnatu (2018) observe that the meaning people derive from their interactions and experiences are usually communicated to other people using symbols such as spoken communication, actions, practices, emotions or even objects.

Based on these three premises, the study strived to determine the meaning the participants (lecturers, students, and other members of staff) had attached to the inclusion of students with VI in the tertiary institutions. The behaviour of the members of the tertiary institutions were likely to be shaped by the meaning they had attached to it; and emanated from their social interaction in which language played a pivotal role in facilitating (Nwankwo & Nnatu, 2018). Furthermore, the participants use language to communicate the meaning they have attached to inclusion. Thus, the theoretical framework had also informed the choice of qualitative methodology for the study that relies on words to get participants' perspectives on a phenomenon.

The experience of the participants with the inclusion of students with VI in the tertiary institutions was not only likely to modify the meaning the students with VI attach to inclusion but also the attitude of other members of the institution's community (Green, 2015). The participants may have either negative or positive attitude towards inclusion which they will express in their own words and actions (Green, 2015). For instance, lecturers with positive attitude towards inclusion are likely to employ appropriate strategies to make curriculum accessible to students with VI; provide them with appropriate resources and equipment as well as modify the environment to accommodate students with VI. On the other hand, those with negative attitude towards inclusion will not go the extra mile to help the students succeed.

Symbolic interactionism theory is about how the presence of symbols is fundamental in communication (Redmond, 2015; McLuhan, 2014). Communication that largely depends on the use of symbols is fundamental to the existence of individuals and groups of people in the society. Seal (2015) contends that human beings use a variety of symbols ranging from the tangible to invisible symbols to create meaning. In other words, the theory of symbolic interactionism highlights the importance of communication in determining human behaviour in the society (Seal, 2015). Forsberg (2016) asserts that symbolic interactionism is a process in which people are engaged in constructing meaning; and hence allow us to understand each other's thought, ideas, and feelings. our behaviour, actions and attitudes towards a particular object are influenced by the symbol we attach to it.

3.3 DEFINITION OF THE SYMBOLIC INTERACTIONISM

Symbolic interactionism is a micro-level theoretical framework and perspective in sociology that addresses how the society is created and maintained through repeated interaction among individuals (Jacques, 2017). On the other hand, Carter and Fuller (2015) observe that symbolic interaction emphasizes the micro-level process through which people construct meaning, identity and joint act. The theory accentuates how symbolic interaction and human agencies serve as the cornerstone of social life.

McLuhan (2014) defined symbolic interactionism as a theoretical and methodical approach used in social science to study how people's experiences shape their adjustment in making sense of the realities of everyday group life. On the other hand, Harrelson (2013) argued that symbolic interactionism is a social psychological perspective that specifically focuses on perspectives, interactions, and meaning with emphasis on how individuals interpret others, themselves, and their situations. Thus, symbolic interaction is concerned with how the society is created through interaction that subsists amongst members that form it (Redmond, 2015). Symbolic interactionism encourages us to be open to discovery of aspects of everyday life previously ignored by researchers (Kotarba, 2014).

3.4 HISTORICAL PERSPECTIVES ON THE DEVELOPMENT OF SYMBOLIC INTERACTIONISM

The philosophical foundation and intellectual heritage of the theory of symbolic interactionism can be traced back to the analytical, inductive, interpretive, and pragmatic thoughts of classic Greek philosophers notably Plato and Aristotle (Forsberg, 2016). In the contemporary society, symbolic interactionism has been greatly shaped by ideas and writings of German hermeneutic tradition of Wilhelm Dilthey and American pragmatists such as William James, John Dewey, Charles Harton Cooley and George Herbert Mead (MacLuhan, 2014; Carter & Fuller, 2015).

The theory of symbolic interactionism emerged in response to the mainstream perspective on society that dominated sociology at the time (Carter & Fuller, 2015). The conventional method of studying the society tended to use top-down approach by

focusing on the impact of the micro-level institution and social structures and how they imposed on and influenced individuals life in the society. In contrast, symbolic interactionism was a strategy that studies the operations of the society using bottom-up approach by shifting the focus to micro-level factors that emerged during the face-to-face encounter to explain the operations of the society (Carter & Fuller, 2015).

The theory of symbolic interactionism is believed to have originated from Herbert Mead (1863-1931), who had discussed extensively the theory in his book, *Mind, Self and Society* (Redmond, 2015; McLuhan, 2014; Jacques, 2017). According to Mead's philosophy, the mind, self and the society were considered to be closely related and social interaction accounted for the development of the mind and the presence of self (Redmond, 2015). However, it was Herbert Blumer (1900-1987) who is credited for having coined symbolic interaction as it is practiced today (Fink, 2015). Blumer's theory of symbolic interactionism was based on the philosophy of George Herbert Mead; and is founded on three premises namely, meaning, language and thinking (Fink, 2015).

3.5 MEAD'S VIEWS ON SYMBOLIC INTERACTIONISM

Herbert Mead is believed to have been the first person to have used the word symbolic interaction (Redmond, 2015; McLuhan, 2014). However, Mead never authored a book during his tenure as a lecturer at the Chicago School of Sociology, University of Chicago. After his death, his students collected his lecture notes and manuscripts and wrote four books in his name. In his book *Mind, Self and Society*, Mead had discussed extensively on the theory of symbolic interactionism (Jacques, 2017). According to Mead, the mind, self, and the society are closely related and that social interaction amongst members of the society results in the development of mind and the presence of self (Fink, 2015).

The symbolic interaction theory is concerned with the importance of symbols in the development of humans as individuals and collectively as members of the society (Redmond, 2015). Members of the society communicate and interact with one another through the use of symbols. The use of symbols helps people develop a sense of self and mind (Davis, 2015). Although symbols are a creation of the society, society itself is sustained by the interaction that exists amongst members who depend on the use of

symbols (Carter & Fuller, 2015). Accordingly, the symbols are at the centre of interrelationship that subsists in the society, mind and self. (See figure 3.2).

Figure 3.2: Visualization of Symbolic Interaction Theory
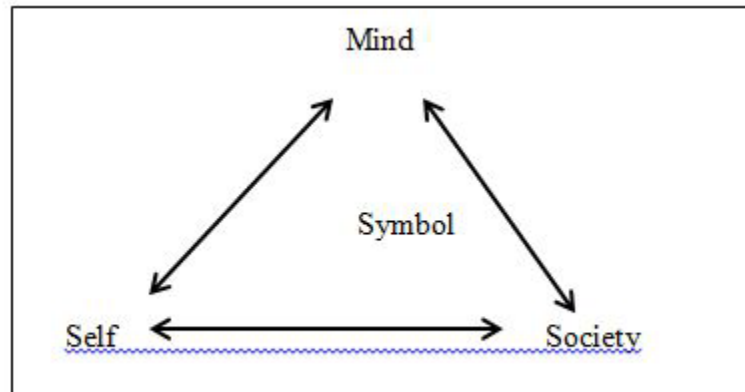
Mead and Redmond (2015) hypothesized that there are two forms of conversation that exist in human society. One form consists of the use of gestures and the other consists of the use of significant symbols (Redmond, 2015). Accordingly, the conversation involving gestures are the insignificant simple stimulus – response in everyday life (Dionysiou, 2017). On the other hand, gestures become significant when individuals in the society have a shared understanding in their meaning. Communication is made possible through the use of significant symbols.

In addition, Mead in Quist-Adade (2018) considered the use of vocal gestures as significant. This is because the use of vocal gestures affects the individual who makes the gesture as much as it affects the individual to whom it is directed. In other words, the use of speech allows the initiator of the speech and the person the speech is directed to share the meaning of object or situation with others. Kotarba (2014) posits that significant symbol is a concept refers to words, images, phrases, or ideas that the society uses to describe organizational activities, core values and beliefs.

According to MacLuhan (2014), Mead was concerned with the mind and brain. The mind is the reflective intelligence of human being that arises out of social interaction in which language plays a leading role. This implies that the language which is instrumental in social interaction plays a vital role in the development of the human mind. The brain is

the organ in the body (Quist-Adade, 2018). Jacques (2017) asserted that the mind allows us to reason with ourselves, internalize our actions and make delayed response. Symbolic interaction according to Mead (1934) extensively discussed self which comprise 'I' and 'Me'. The 'I' is the impulsive psychological and acting part of ourselves and indicates how we act towards other people (Fink, 2015). The 'me' is considered the organized set of attitudes of others; and generally, reflects social awareness towards others and ourselves. The self exists when one takes on the attitude of others and acts towards oneself as others might act (Quist-Adade, 2018).

Mead believed that becoming aware of the role of other people in the society is an essential mechanism through which children develop themselves (Redmond, 2015). A child develops when she/he first learn to pretend to be a certain individual around him/herself from the perspective of them. Later, the child imitates many other people with whom he/she associates. Eventually, the child develops a generalized response rather than the responses incorporated by interacting with people around him/her (Quist-Adade, 2018). The development of generalized perspective of oneself other than those around them facilitates the development of complete self (Carter & Fuller, 2015). In other words, social interaction is made possible through communication between oneself and others in the society. The process of interacting with one another facilitates the existence of the individual and the society. The cooperative action based on shared meaning, common understanding and expectations amongst members of a group brings about culture. Redmond (2015) contends that culture is a consensus in the use of generally agreed symbols by members of a group.

Jacques (2017) identified four distinct phases how socially constructed reality emanates from individual and a group of people in the society. The first phase involves the use of language which is vital for communication. People engage in conversation using language which is considered a significant symbol.

The second phase involves inferring meaning of objects and situations in their social context. This is an outcome of interaction between the initiator and the respondent in a conversation. Subsequently, objects and situations are given meaning by the individuals involved in interacting with them (Forsberg, 2016). The third phase involves social

interaction which occurs in a particular social and cultural context through the use of socially acceptable symbols.

According to Jacques (2017), the last phase in symbolic interaction involves the interpretive process that occurs through repetition of interaction; and results in the recreation and defining meaning of social objects and situations. Jacques observes that social reality is a temporal phenomenon constructed by inter-subjective interpretation of meaning and significant symbols by individuals. The process is dynamic in the sense that social reality is constantly being constructed through interpretive process.

3.6 PRINCIPLES OF THE THEORY OF SYMBOLIC INTERACTIONISM

Herbet Blumer (1900-1987) is credited for having coined symbolic interactionism theory (Fink, 2015). Blumer had mainly relied on the ideas of his predecessor, George Herbert Mead (1863-1931), whose philosophies were contained in his famous book *"Mind, Self and Society"* to propagate symbolic interactionism theory (Fink, 2015).

Symbolic interactionism theory depends on three premises set down by Blumer. They are human act towards things that include objects, other people, situations, and social institutions on the basis of the meaning those things have for them (Davis, 2015). This implies that we assign meaning for things whose meaning determines how we shall act regarding those things. For instance, if we have known and understood a knife as a tool for cutting vegetables, we shall treat it as such. Conversely, if we have regarded a knife as a tool to attack and injure other people, then we shall treat it as a weapon of war.

Redmond argues that human beings learn symbols that are associated with something and associate the meaning to the symbol. The symbol influences how we act and our attitude towards the particular object. McLuhan (2014) observes that symbolic interactionism conceptualizes human beings as purposive agents who act towards their world based on the meaning they have for them. As a result, the meaning people have towards something will influence their behaviour towards it (McLuhan, 2014).

Blumer believed that a human being is not a product of various psychological factors such as stimulus, attitude, motives, perception and cognition and sociological factors such as

roles, cultural norms and social pressure that act upon humans. Instead, meaning that things have for a human being is central in the formation of people's behaviour and attitude towards things (McLuhan, 2014). Accordingly, Fink (2015) observes that the study of human being must not ignore the creation and evolution of meaning in interaction.

The second premise concerns the source of meaning. Bernasiewics (2017) observes that meaning arise in the process of interacting with other people. Our meaning of things is not intrinsic or inherent in the thing itself. Instead, our meaning comes from interaction with other people (McLuhan, 2014). According to Hughes (2016), the meaning of things and objects emanates from social interactions that subsist between different people in the society. As people continue to interact with one another, however, the meaning of things may remain constant, may change, or alter in some ways (Sargent, 2018). Fink (2015) argues that social interaction is of paramount importance in its own right since it defines human conduct a part from being merely expression of human conduct. Accordingly, ones behaviour will elicit either positive or negative response from other people depending on the people's perception of the behaviour. When other people have a positive perception of ones behaviour, they are likely to reinforce the behaviour thereby increasing its chances of reoccurring. Likewise, when other people have negative perception of the behaviour, their response towards the behaviour is likely to discourage its occurrence in the future (Dionysiou, 2017). The interaction will result in vicious cycle of individual's behaviour eliciting response from other people as depicted in figure 3.3.

Figure 3.3: Cyclical Model of Interactions between Self and Others
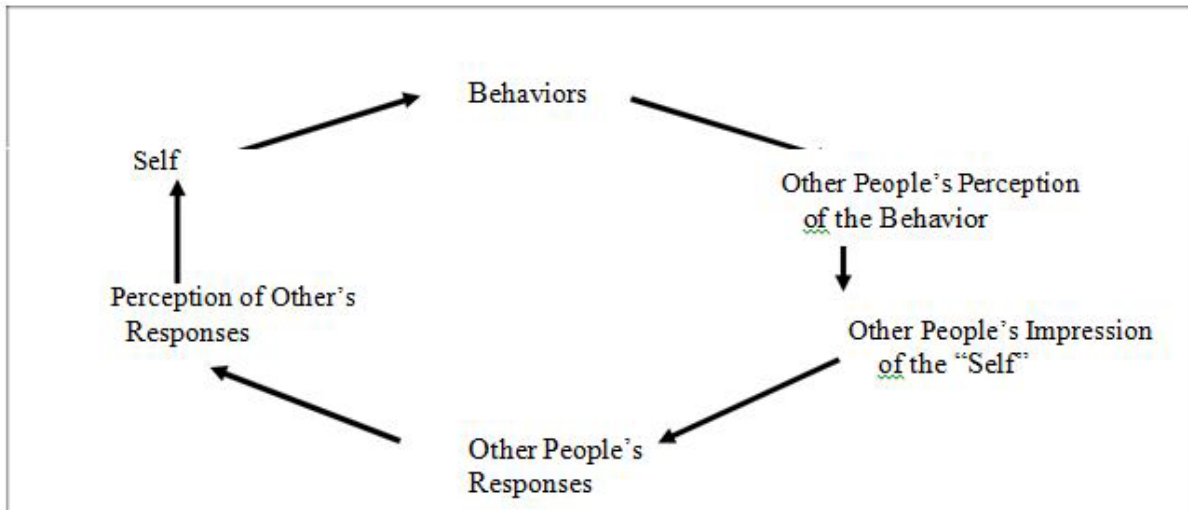
Seal (2015) argues that the human being constantly engages in making sense of their social environment by interacting with other people. According to McLuhan (2014), people develop, maintain and modify meaning of objects including selves, others and situations through social interaction that is made by use of language.For instance, when a child is deprived of social interaction by being brought up in isolation, she/he will not acquire language which is mainly made up of symbols. Also, it is important to emphasize that the meanings of things around us including our culture are highly influenced by the people with whom we interact. Redmond observes that the more diverse one's culture is, the more the person would be in the interpretation of things.

The third premise involves application and modification of meaning through an interpretive process used by a person dealing with the things, people and situation as he/she interacts with them (Abakah, 2015). The process involves communicating with oneself and indicating to oneself the meaning of the things towards which one is acting via symbols (Zhou, 2010). Blumer's ideas had followed Mead's notion that the human employs significant symbols that create meaning for the members of the society. Thus, meaning is created by the user of gestures as well as for the interactant involved (Quist-Adade, 2018). The notion that a message is an entity with discreet meaning, source and

receiver is incorrect in Blumer's view. Instead, he believed that people involved interaction must conspire to create meaning to the message (Fink, 2015).

McLuhan contends that social interaction that enables people engage in an interpretative process by which they create, assess, and modify meaning of things and situations is key to understanding symbolic interaction. In addition, people have the capacity to purposely engage their lives' world as agents. It implies that a human being can be the object of his or her own action and can act towards him/herself as he or she might act towards other people (Seal, 2015). Meanings are not only viewed as emanating from social interaction but also modified as people interpret these emergent meaning in relationship to their own situation (McLuhan, 2014).

Blumer was not concerned with development of mind as proposed by Mead. Instead, he concentrated his efforts in the study of interaction and meaning. In Blumer's views, social institutions did not contribute to the study of human. They were merely emergent in the construction of meaning. However, Blumer and other pragmatists contributed to the development of a naturalistic research methodology. According to Blumer, the traditional methodology, methods, and techniques of conducting research did not put emphasis on the importance of meaning that things had in shaping a person's behaviour (Carter & Fuller, 2015). Instead, they had viewed meaning as innate to the object itself. Thus, although Blumer believed that objects had an independent empirical existence, he proposed that sociologists should seek to understand, rather than predict or control human behaviour. To Blumer, interaction through which meaning is created is the best way to study human behaviour (Carter & Fuller, 2015).

Humans do not simply react to another human's action. They interpret and define actions and respond based on the meaning of those actions. Accordingly, research methodology must strive to capture information on meaning and interpretation by an individual. According to Blumer, this can only be achieved through direct examination of empirical world (Fink, 2015).

3.7 CORE COMPETENCIES OF SYMBOLIC INTERACTIONISM THEORY

These are principles upon which the theory of symbolic interactionism is based. McLuhan (2014) enumerates the principles as follows: The first core competency is "self". The proponents of symbolic interactionism contend that human beings are objects unto themselves (McLuhan, 2014). This implies that a human being can perceive him/herself and act towards himself/herself (Harrelson, 2013). However, self is not fixed, structured or an inherent quality of individual but emerges from the interactive process both with himself/herself and others (Quist-Adade, 2018). Through self-reflection, one can define, judge, adjust and define meaning and act.

The second core competency of symbolic interaction is the "act". This implies that human beings are capable of engaging in interactive process of making sense of their world as active participants (Fink, 2015). Accordingly, it means that human beings can construct their line of action, rather than viewing act as merely released through them. However, McLuhan (2014) observes that not all lines of action will be deemed to be rational or wise.

The third core competency of symbolic interaction is "language". It plays a key role in understanding human behaviour (Redmond, 2015). Through the use of a language, people engage in interactive processes in which they assign meaning to object and construct a meaningful line of action in conjunction with others (Redmond, 2015). Hence, when people acquire a language, thy transit from a world of non-symbolic interaction to symbolic interaction where they communicate. McLuhan contends that it is through communication of significant symbols that people in a situation can interpret each other's gesture and act based on their shared meaning.

According to MacLuhan, things are anything to which people point or refer. We live in a world of objects and specifically objects constitute a different social world. Carter and Fuller point out that things refer to objects, other people, situations and social institutions. Redmond argued that objects by themselves do not have inherent meaning, but people socially construct them through symbolic interaction. People act towards objects based on the meaning they have for them.

3.8 OVERVIEW OF THEORETICAL APPROACHES WITHIN SYMBOLIC INTERACTIONISM

The main variant of symbolic interactionism was developed by Herbert Blumer at the University of Chicago in 1950's (Dionysiou, 2017). Blumer brought Mead's philosophically based social behaviorism to sociology (Carter & Fuller, 2015). Thus, he laid the groundwork for new theoretical and paradigm which In many ways challenged the existing sociological form of epistemology and methodology (Carter & Fuller, 2015). Blumer's (1969) variant of symbolic interactionism has been the most influential in sociology; and hence most of the scholarship is aligned to Blumer's symbolic version of symbolic interactionism (Redmond, 2015).

Blumer emphasized how the self emerges from the interactive process of joint actions (Seal, 2015). According to Blumer, people are constantly engaged in mindful actions where they manipulate the meaning of the situation (McLuhan, 2014). Consequently, symbolic interactionism believes that the study of human behaviour must begin with human association. Thus, symbolic interactionism theory centres on the process actors use to constantly create and recreate experience from one interaction to the next (Seal, 2015; Fink, 2015). Also, Blumer believed that social institution only exists as individuals interact (Carter & Fuller, 2015). As a result, Blumer saw social institutions as social habits that occur within specific situation that are common to those involved in the situation (Carter & Fuller, 2015).

Blumer believed that objects and people do not have inherent meaning but rather people give them meaning (Redmond, 2015). Thus, behaviour is simply an actor's way of reacting to the interpretation of a situation (Carter & Fuller, 2015). Hence, to understand social behaviour requires an interpretive perspective that examines how behaviour is changing, unpredictable, and unique to each and every social encounter (Fink, 2015).

Symbolic interactionism according to Blumer could be summed as based on three premises. The first premise states that humans act towards things based on the meaning those things have for them. The second premise is that meaning of things is derived from social interaction that one has with others. The third premise states that meanings are

handed in and modified through interpretive process used by persons dealing with things they encounter (Dionysiou, 2017).

Blumer was strongly opposed to the idea that science was the one and true vehicle for discovering truthfulness. According to him, logical empiricism was flawed (Carter & Fuller, 2015). Blumer in Quist-Adade (2018) believed that the best methodology for understanding social behaviour is to get inside the individual world to understand how she/he understands the world (Quist-Adade, 2018). A good methodology of understanding human behaviour must consider the intimate understanding rather than the intersubjective agreements which characterize many scientific investigations (Carter & Fuller, 2015).

Blumer felt that empirically verifiable knowledge of social situation cannot be gleaned by using statistical techniques or hypothesis testing (Dionysiou, 2017). Rather, there is need to understand the process individuals use to interpret situations and experiences and how they construct their actions among other individuals in the society (McLuhan, 2014). Hence, Blumer believed that qualitative methods of study are the only ways to study human behaviour by defining concepts and using them to understand the nature of behaviour (Quist-Adade, 2018). However, other sociologists writing in the symbolic interactionist perspective saw the study of interaction as not limited to qualitative approaches (Seal, 2015). As a result, different variant of symbolic interactionism emerged.

The sociologists who had different variant of symbolic interactionism perspectives in their writing were Kuhn (1964) and Stryker (1980). They utilized positivist methods in their studies of the relationship between self and social structures (Carter & Fuller, 2015). Accordingly, Kuhn who worked in the mid-twentieth century had influenced the emergence of a new sociological tradition popularly termed as Iowa school (Quist-Adade, 2018).

The new variant of symbolic interactionism by Kuhn sought to reconcile Mead's framework with rigorous scientific testing of symbolic interactionism principle (Carter & Fuller, 2015). The Iowa variant of symbolic interaction studied social interaction and

viewed behaviour as positively constructed and coordinated social act that is informed by preceding event in the context (Jacques, 2017). Carter and Fuller noted that the basic theoretical underpinning of Kuhn's symbolic interactionism could be summarized up around four core themes.

The first core theme of Kuhn's symbolic interactionism state that social interaction can be examined through a cybernetic perspective that emphasizes intentionality, temporality, and self-correction. On the other hand, the second theme urges scientist to focus their attention on dyads, triads, and small groups as these are the loci for most social behaviour. The third theme of the Iowa school of symbolic interaction emphasized the need to study social interactions in its natural forms as well as in the laboratory (Kuhn, 2016; Quist-Adade, 2018). The fourth theme advocated that social scientists should strive to create more systematic and vigorous vocabulary to identify the ontological nature of sociality (Carter & Fuller, 2015; Kuhn, 2016).

Whilst Kuhn and those associated with the Iowa school follow symbolic interactionist framework generally consistent with Mead, their methodological stance directly contradicts that proposed by Blumer. The symbolic interactionist who followed Iowa school believed the use of quantitative analysis of social interactions was not an abstract empiricism. Kuhn asserted that the use of the quantitative methods could provide systematic testing of Mead's theoretical principle (Carter & Fuller, 2015).

Kuhn believes that social science was indeed consistent with quantitative study of human behaviour (Channa, (not dated)). Kuhn developed the twenty-statement test (TST) which is based on self-disclosure of respondent in answering the question 'who I am'. Kuhn believed that the response to the questionnaire could provide a systematic study an individual's self-attitude and organization of identifies as they emerge from symbolic interaction (Quist-Adade, 2018; Schwirian, 2016). A researcher may find both conventional and idiosyncratic reflection of social status that they can identity by coding the responses of the respondents (Carter & Fuller, 2015).

Despite criticism of Kuhn's techniques as being deterministic or succumbing to reductionism, the Iowa school based on Kuhn's work has contributed much to research

addressing the problematic nature of coordinated social action as well as responses based on the interaction (Carter & Fuller, 2015). Kuhn and other symbolic interactionists who subscribed to Iowa school continued to study varied social phenomena by use of innovative experiment to understand social interaction. Hence, they endeavored to understand individual orientation towards one another across time and space, improving on cross sectional methodology approach that mostly defined Kuhn's research (Kuhn, 206; Quist-Adade, 2018).

Sheldon Stryker (1980) is a sociologist whose philosophy represented what has been referred to as the Indiana school of symbolic interactionist thought (Quist-Adade, 2018). Stryker generated his research concerning symbolic interactionism in the mid to later part of the twentieth century at the University of Indiana (Carter & Fuller, 2015). Whilst Mead and Blumer acknowledged the fluid nature of meaning and self-interaction, Stryker emphasized that meaning and interaction led to relatively stable pattern that create and uphold social structures. According to Stryker, symbolic interactionist ideas should be tested using both qualitative and quantitative methods (Carter & Fuller, 2015; Stryker, 2008).

He believed that Mead's work can be conceived of as a frame rather than a coherent theory with testable proposition (Fink, 2015). He operationalized variable that Mead presented as general assumptions and concepts by hypothesizing and empirically testing relationship amongst Mead's concepts (Quist-Adade, 2018). He treated social roles as emerging from a reciprocal influence of network or pattern of relationship in interaction as they are shaped by various structures (Carter & Fuller, 2015). Stryker defined roles as expectations which are attached to social positions; and that expectations of roles vary across situations and within the context of cultural or social change (Channa, (not dated)).

Stryker defined socialization as the process through which individuals learn normative expectations for action as they relate to role relationship (Stryker, 2008; Quist Adade, 2018). Thus, Stryker's symbolic interaction is an attempt to bridge the gap between micro and macro-sociological and social psychological theory (Channa, (not dated); Stryker, 2002). The approach provides significant theoretical insights to social roles in expanding symbolic interactionist concept (Carter & Fuller, 2015).

3.9 APPLICATION OF SYMBOLIC INTERACTIONISM THEORY IN STUDIES

Symbolic interactionism perspective has offered social scientists opportunities to study isolated social reality for its own sake in order to arrive at insights that make valuable contribution to social policy and behaviour management (Nwankwo & Nnatu, 2018). Based on three premises of symbolic interactionism, therefore, I will strive to situate the present study on the symbolic interactionism theoretical framework by discussing the various studies done based on the theory and how the studies relate with the theory. Secondly, I will examine how the present study is aligned to the three premises that form the foundation of the symbolic interactionism theory.

Nwankwo and Nnatu studied the inclusive education of students with disabilities in Nigeria using symbolic interactionism theoretical perspective. The aim of the study was to ascertain the level of implementation, success and challenges encountered. The study began by defining education as the process whereby culture, knowledge and skills are transferred to an individual for the improvement of his/her entire wellbeing through socialization. Education is therefore relevant to both the able-bodied and persons with disabilities.

The study by Nwankwo and Nnatu defined persons with disabilities as those with impairments, or those experiencing restrictions and limitations in given activities. The study noted that the provision of quality education is dependent on the societies' abilities to fully embrace inclusive education. Thus, to successful implement inclusive education, every society must strive to create a learning environment that responds to the needs of all students to achieve greatest impact on the sphere of their lives that include but not limited to social, emotional, physical, and cognitive development (Tracy-Bronson, 2018). The study recognized that the ultimate goal of inclusive education is to ensure optimal academic performance and learning for all students.

Nwankwo and Nnatu alluded that symbolic interactionism theory is the framework of viewing human beings as living in a world of meaningful objects. They proclaim that objects consist of things, actions, other people, and symbols. Therefore, discrimination against the disabled persons is associated with variety of behavioural activities each with

different meaning such as feeling of inferiority complex, dehumanization, inhumane care, and sense of inadequacy. According to the study by Tara (2019), people act towards a thing based on the meaning it makes on them.

Thus, a teacher who defines a student as a slow learner would have low expectation on him/her. Consequently, the negative attitude held by the teacher will eventually have adverse effects on the student's intellectual development.

The study by Nwankwo and Nnatu found that inclusive education provides adequate educational support to all students including those with disabilities and promotes successful learning as well as access to health information. However, teachers' negative perception of students with disabilities often affects the students' academic performance. Furthermore, Nwankwo and Nnatu pointed out that people always have negative attitudes towards students with disabilities that result in students being isolated and stigmatized by the society. Thus, there is need to implement inclusive education in schools as a way of breaking down barriers and challenges encountered by students with disabilities (Tracy - Bronson, 2018).

The study by Nwankwo and Nnatu also found out that despite the efforts by the government to implement inclusive education, the effort was negated by the deplorable poor funding of inclusive education. Therefore, there was need for the government and international organizations to increase funding for the inclusive education.

Similarly, Ayehsabu (2020) studied appropriate leadership practices that could move South African schools beyond highly diverse cultural groups to more inclusive society. The researcher was concerned that whereas there was a new era in South Africa with the promulgation of the new constitution in 1994, the new era has not led to desegregated schools in the country. Ayehsabu observed that South Africa has been termed as a mosaic of difference in culture. It is a home of diverse cultures within South Africa, from Africa and the rest of the world. The previous studies had demonstrated that cultural diversity in South Africa could be put into four main cultural groups namely whites, Asians, Africans and the coloured.

Ayehsabu asserted that the culmination of apartheid in South Africa resulted in a series of legislations that ensured changes through policies and practices aimed at promoting cultural diversities in the schools and other organizations. Consequently, South Africa has witnessed more rapid desegregation in the schools in recent years.

The new dispensation has triggered convergence of staff and students of wider cultural inclinations in rural and urban schools (Motitswe & Mokhele, 2013). The move has led to schools having increased diverse groups.

Despite the enactment of policies aimed at enhancing inclusivity amongst diverse cultural groups in the schools, the policies have failed to envisage and promote fitting leadership that engender inclusiveness and address issues commonly associated with high diverse schools and communities (Ayehsabu, 2020). The study by Gqibitole (2019) noted that cultural diversities in schools is a source of enrichment; empowerment and perspective that might generate positive results within an organization. On the other hand, diversity can be a source of conflict such as discrimination and infighting amongst the staff and students if appropriate leadership is not practiced and fostered (Tracy-Bronson, 2018). It is therefore important to have appropriate leadership if the schools are to continue having students from diverse cultural backgrounds living and learning together harmoniously.

The study by Ayehsabu had sought to get people's understanding of concepts such as culture and inclusive leadership. The participants felt that culture are the things you grew in, believe in and the practice you employ as an ethnic group. Other participants saw culture as being composed of traditions or customs and one's identity that defines one's way of live and actions. Accordingly, the participants felt that culture is inherited and passed on from one generation to another. The study concluded that culture is generic and a dynamic concept comprising of such dimensions as religion, ethnicity, or tradition/customs, food, race, education, gender, and language (Ayehsabu, 2020).

The study also wanted to understand how participants perceive inclusive leadership and its characteristics. The study found that most participants felt that inclusive leaders are those who treat members of diverse cultural groups with fairness, are honest, transparent, non-judgmental, and unbiased (Tracy-Bronson, 2018). Also, the leaders must be great

listeners and good communicators. Other participants felt that inclusive leaders are those who have interest in knowing and understanding other cultures such that they are tolerant of other people's culture through acceptance, appreciation, respect, and valuing people of different cultures (Ayehsabu, 2020). The participants believed that such leaders would create a school environment for all students and teachers to make sense of inclusiveness.

To study the leadership framework that promotes inclusiveness in schools, Ayehsabu adopted symbolic interactionism as the lens through which to achieve the objectives of the study thus based it on the first premise of symbolic interactionism that stipulates that human beings act towards things in the environment based on the meaning they have assigned them (McLuhan, 2014). Ayehsabu argues that culturally constructed meaning facilitates our interaction by enabling actors to choose the people to interact with, and how to interact with them. Also, the theoretical framework will assist us to determine from time to time the actions or words of other individuals.

The meaning people attach to their daily activities and their resultant behaviour and emotions of such interaction in culturally diverse organization determines organization structure, culture, policies, and practices that should be engendered especially in the context of inclusiveness (Abakah, 2015). The study contends that social roles, policies, traditional organization culture goals, provide the raw materials for individuals for the formation of definitions or meaning.

The present study is concerned with the inclusion of students with VI in the tertiary institutions in Kenya. Inclusion is a philosophy that advocates for the education of persons with disabilities in the regular schools and classrooms (Omukwuor & Uchechi, 2017; McCarthy & Shevling, 2017). Although, inclusion has enabled many students with disabilities access education in tertiary institutions, studies have found that the practice is faced with myriad of challenges. Despite inclusion being supported by many scholars who feel that students with disabilities have a right to live and participate in the activities of their societies like their regular peers (Hornby, 2015), I am concerned that the mere placement of students with disabilities in the tertiary institutions could result into more exclusion of this cadre of students.

Nwankwo & Nnatu were concerned about the implementation of inclusive education in the schools in Nigeria and feared there could be challenges encountered by persons with disabilities in the course of being included in regular schools. On the other hand, Moorosi (2021) was concerned with finding the appropriate leadership framework that could embrace cultural diversity in South African schools. The present study's concern is that placement of students with VI in tertiary institutions could lead to their further exclusion in the society due to inappropriate strategies and methods of teaching as well as lack of appropriate social and physical adjustments.

Symbolic interactionism postulates that the human being acts towards things in the environment based on the meaning they have assigned them. Accordingly, the theory sees meaning as arising from the process of interaction (Nwankwo & Nnatu, 2018). The lecturers and regular students have an opportunity to interact with students with VI in the inclusion set up. They can form meaning based on their interaction. Furthermore, the inclusion accords lecturers and students including those with VI the opportunity to understand practices inherent in the accommodation of students with VI in tertiary institutions. Similarly, students with VI have an opportunity to interact with their regular peers. Hence symbolic interactionism can be used to describe symbolic meaning related to inclusion of students with VI. As human beings engage in social interaction, they will acquire meaning for themselves not only from their interaction but also from their own experiences (Jacques, 2017). As a result, lecturers and students including those with VI are likely to engage in self-introspection and change their behaviour towards practices embraced in inclusion.

3.10 THE ROLE OF COMMUNICATION IN INTERACTION

The second premise of the symbolic interactionism theory is that people derive meaning out of social interaction with one another (Seal, 2015); and language is the vehicle that facilitates that interaction (Nwankwo and Nnatu, 2018). Thus, the language plays a key role in understanding the human behaviour (Redmond (2015). Using a language, people can engage in interactive process in which they assign meaning to object and construct a meaningful line of action in conjunction with others (Nwankwo & Nnatu, 2018;

Redmond, 2015). When people acquire a language, they transit from a world of non-symbolic interaction to symbolic interaction where they communicate.

McLuhan contends that it is through communication of significant symbols that people in a situation can interpret each other's gesture and act based on their shared meaning. Redmond argues that social interaction is made possible through communication between oneself and others in the society. The process of interacting with one another facilitates the existence of the individual and the society. The cooperative action based on shared meaning, common understanding and expectation amongst members of a group brings about culture. Jacques asserts that culture is a consensus in the use of generally agreed symbols by members of a group.

There are several studies based on symbolic interactionism theoretical framework and aligned to first and second premises of the theory. For example, the study by Green in 2015, concerning the relationship that exists between the specialist teacher and the regular teacher in an inclusion context. Green observed that the enactment of Education for All Handicapped Children's Act (EAHA) in 1975 required children with disabilities to be educated in the least restrictive environment accorded by the regular classroom. The enactment of the law also marked the beginning of inclusion. Thus, the EAHA brought many changes in the education practices of students with disabilities. Changes in the education practices are meant to meet the needs of the curriculum requirements, align with the latest trends, and meet the needs of the students (Green, 2015).

One of the changes that occurred in the field of education of students with disabilities is the concept of cooperative teaching (Green, 2015). The study by Green observed that cooperative teaching is a merger between regular teacher and a specialist teacher within the regular education set up. The practice has been defined as two or more professional delivering substantial instructions to diverse groups of students in a single physical place (Green, 2015). The increased placement of students with disabilities in the regular classrooms has witnessed increased co-teaching between the specialist teachers and regular teachers in the recent years (Green, 2015). According to Green, specialist teachers are assigned to co-teach with regular teachers as a strategy and a practical way to meet the educational needs of students with disabilities in the regular classrooms.

The regular high school teachers are considered to have mastery of content knowledge, strategic teaching, content assessment and relevance of the material linkage within the curriculum (Green, 2015). The specialist teacher, on the other hand, is expected to have mastery understanding of behavioural and academic accommodation; as well as characteristics of students with disabilities. In an ideal partnership of co-teaching, two or more teachers would work in an accord that complements each other's role.

The partnering teachers would move and circulate around the room helping all the students. Furthermore, the partners would plan together in a manner that it would be difficult to differentiate the two (Green, 2015). However, the partnership may face some challenges such as lack of understanding of the content, laws, and characteristics of the students with disabilities (Nwankwo & Nnatu, 2018).

The study adopted qualitative research approach and symbolic interactionism theoretical framework to investigate the complex relationships that subsist between regular teachers and specialist teachers involved in co-teaching in the inclusion set up. Green asserted that qualitative research takes a complex look at issues and detailed understanding of issues by talking directly with people who face, experience, or have a perspective on the issue. The study utilized interview guide and observation checklist to get perspectives of the participants.

Symbolic interactionism theoretical framework is utilized to better understand the complexity of co-teaching experience and practice in the inclusion classroom and understanding of disabilities. The interaction between co-teachers and their understanding of disabilities are significant in their resulting practice (Green, 2015). The co-teaching partners are forced to communicate, allocate resources, function in their environment, manage students and bring knowledge to the student (Tracy-Bronson, 2018). The interaction accords them the opportunity to derive meaning concerning inclusion. Furthermore, the use of qualitative research approach requires participants of the study to provide data in descriptive form. Hence, the participants can meet the second premise of symbolic interaction that emphasizes the use of language to interact and form meaning (Bernasiewics, 2017).

The inclusion of students with disabilities in the regular classrooms has become a common practice in Zambia just like most countries of the world. Although inclusion has varied definitions, it generally refers to the extent to which schools welcome students with disabilities as full and valued members of the school community (Lifumbo, 2016). Also, inclusion signifies the presence of positive social interaction that exists between different actors in the school community where students with disabilities are treated like anybody else (Ayehsabu, 2020).

Hornby (2015) claims that the ultimate goal of inclusion is to have students with disabilities live useful and independent lives in the society. However, inclusion of persons with disabilities in the society must begin in the school where students with disabilities must learn together and share with their regular peers. Inclusion accords students with disabilities the opportunity to interact with their regular peers in both social and curriculum issues. Moreover, inclusive schools allow students with disabilities to gain awareness about disability barriers and characteristics of students with disabilities (Lifumbo, 2016).

The social relationship that exists between students with disabilities and other actors in the school is significant due to the vital role such relationship plays in the achievement of inclusive education environment (Lifumbo, 2016). Also, the social relationship between students with disabilities and other actors was important to authorities in Zambia who had interest in the promotion of inclusive education (Lifumbo, 2016). Accordingly, the study focused on how teachers and students with disabilities account for social process, meaning and social relationship in the provision of inclusive education. It provided a better understanding why people act the way they do. Moreover, it provided a deeper insight into how people experience and interpret the world (Lifumbo, 2016).

On the other hand, symbolic interactions theory is premised on the assumption that there are multiple perspectives of reality, and that human experience is mediated by interpretation. Objects, people, situation, and events do not possess their own meaning but meaning of things is conferred to them (Croplay, 2019). Anybody who aspires to understand how people construct meaning of things, therefore, must get close to people to know them. Accordingly, symbolic interaction theoretical framework informed the study by finding out how the regular students and other actors understood students with

disabilities, defined their world and how they understood the social environment around them; and how that understanding affected their behaviour (Croplay, 2019). The study fits well with the symbolic interaction that emphasis meaning as the basis of understanding peoples' behaviour. Also, the qualitative design engenders the use of language to solicit response from participants. The use of language during interaction between people is the second premise of symbolic interaction.

The present study which is concerned with the inclusion of students with VI in tertiary institutions in Kenya meets the first two criteria of symbolic interactionism theoretical framework that guides the study. Firstly, the study is interested in the interaction between lecturers, regular students and students with VI; and how they derive meaning during their interaction concerning inclusion. Also, the study is interested in finding out how the meaning they derive from interaction have subsequently influenced their behaviour in such practices like methods and strategies used in delivering curriculum content; varied environmental modifications put in place to accommodate all students and policies followed in the inclusion of students with VI in the institutions. This fits well with the first premise of symbolic interaction that stipulates that people derive meaning of things in the environment based on their interaction and that meaning influences people's behaviour.

The study will not only depend on the interaction between; and with participants to get meaning concerning inclusion but will also rely on the use of language in such interactions. Furthermore, the use of language for interaction to derive meaning among the participants has been buttressed on the use of in-depth interviews that engender descriptive responses from the participants. The use of language to facilitate interaction is the second premise of symbolic interactionism theory.

3.11 REPETITION BRINGS ABOUT BETTER UNDERSTANDING OF MEANING

The third premise of symbolic interaction is that thought modifies individual's interpretation of the meaning she/he attaches on the things in the environment. According to Jacques, symbolic interaction involves the interpretive process that occurs through repetition of interaction; and results in the recreation and defining meaning of social objects and situations. Jacques observes that social reality is a temporal phenomenon

constructed by inter-subjective interpretation of meaning and significant symbols by individuals.

In the context of this study, it is envisaged that lecturers and students including those with VI have interacted with inclusion and that they have formed meaning based on their interaction and experience with it. Consequently, the study intends to find out how their repeated encounters with inclusion have informed their behaviour in terms of strategies and practices involved in educating all the students.

3.12 CRITICISM OF SYMBOLIC INTERACTIONISM THEORY

Symbolic theory has not experienced dramatic changes or adaptation witnessed by other theories (Redmond, 2015). However, McCall (2013) observes that the theory has seen reinterpretation of the core values by different scholars. The primary focus, application and interpretation of the theory has mainly reflected the divergent perspectives taken by the Chicago School of Sociology and Iowa School of Sociology which are credited for pioneering symbolic interactionism theory.

The theory has been dogged by criticism from sociologists and psychologists alike. Redmond alluded that sociologists have criticized the theory for failing to address macro-level issues of social structure, politics, and history. However, Davetian (2012) maintains that the critique does not consider that those who subscribe to the perspective study isolate social phenomena to discover broader generic social processes that are present in such supposedly isolated social situations. Jacques upheld that symbolic interactionism theory is an important asset in understanding and analyzing organizations because he believed they can be understood from bottom up. This implies that macro-structures could be understood from micro-analytic framework. Eventually, the macro-structures come to define and constantly shape superior bodies such as government and society (Jacques, 2017). On the other hand, psychologists have criticized symbolic interactionism theory for missing to address micro-level issues such as emotion and unconscious (Redmond, 2015).

Despite the criticism that has been labeled against symbolic theory, it has continued to provide a foundation for understanding human communication as it relates to the role that

symbols play in our interaction and relationship (Redmond, 2015). Furthermore, symbolic interactionism perspective not only offers social scientists the opportunities to study isolated social reality for its own sake to arrive at insight that make valuable contribution to social policy and behavior management but also allows them to arrive at insight regarding the social structure and organization of the society (Davetian, 2012).

The contribution of symbolic interactionism to the study of human society cannot be over emphasized. Redmond observes that the interest in symbolic interactionism has resulted into extensive research and scholarly association (Society of the study of symbolic interaction) and its own journal (symbolic interaction) yet two issues have continued to subvert and bolster symbolic interactionism. There is lack of clarity about concepts and failure to create a systematic set of principles that can be said to truly constitute a theory (Redmond, 2015). The concepts that Mead wrote were not organized in a systematic manner. Also, the book *Mind, Self and Society* attributed to Mead was based on notes taken by his students of psychology.

Consequently, symbolic interactionism by Mead had several interpretations (Redmond, 2015). Furthermore, it had a variety of additional ideas from other scholars that led to more complications in interpreting it (Hughes, 2016). Shalin (2011) observes that Herbert Blumer's explanation and expansion of Mead's work has been derided by other scholars for misinterpreting Mead's ideas.

The ambiguity of the concepts and variables associated with symbolic interaction hampers the ability to assess or observe them and thus test the theory. For instance, there is ambiguity on what constitutes self which is not identifiable through observation. As a result, scholars who favour epistemology approach to understanding the world reject symbolic interactionism perspectives on an account that the concepts such as self cannot be observed, manipulated and measured (Redmond, 2015). Also, there is the difficulty in defining self. Its definition ranges from self of multiple selves to unitary self, according to the interpretation of the individual interactions (Redmond, 2015).

The ambiguity of the concepts and variables associated with symbolic interaction has its merits. Davetian opined that the ambiguity has led to scholars using the varied elements

that constitute symbolic interaction in a way that fits their particular interest and concern. Thus, symbolic interaction has been applied in study of diverse areas of human society that include but not limited to economy, politics, families, gender, mass media and deviance (Redmond, 2015).

3.13 THE FUTURE OF SYMBOLIC INTERACTION

Sociologists have made varied predictions regarding the future of symbolic interactionism (Carter & Fuller, 2015). Carter and Fuller predicted that symbolic interactionism would succeed in maintaining its label, familiarity, and popularity in sociology. This prediction has been echoed by different studies that have confirmed symbolic interactionism as highly recognized subfield of sociology. Thus, symbolic interactionism has remained a discrete perspective in sociology.

The second prediction is that symbolic interactionism would become more characterized with diversity in theoretical and methodological application in sociology (Redmond, 2015). Also, it has been speculated that sociologists will abandon old distinction made between Chicago and Iowa methodological orientation (Carter & Fuller, 2015). In recent years, more sociologists have applied symbolic interactionism without alignment with one of the schools as was the case in the past. However, it has been observed that those trained in Blumer's tradition continue to publish their work in qualitative research while those trained in Strykers tradition tend to publish their work in quantitative research (Carter & Fuller, 2015).

It has also been speculated that symbolic interactionism would put more emphasis on the development of macro-level concept analysis aimed at understanding relationship amongst large scale societies. However, there have been a few isolated studies that have applied symbolic interactionism at the macro-level realm. Furthermore, most macro-level application of symbolic interactionism addresses social movement and collective behaviour.

The past decade has witnessed incredible advancement in communication technology. As a result, there has been over reliance on the use of cellphone and focus on the internet. This has led to virtual communication taking over the place of traditional face-to-face

interaction (Carter & Fuller, 2015). The advancement in communication technology has witnessed more sociologists shifting their focus in using symbolic interactionism to study communication technology (Redmond, 2015).

3.14 CONCLUSION

This chapter discussed symbolic interactionism as the theoretical basis for this study. While the theory has been historically associated with many philosophers, Herbert Blumer has been credited for being the founder of symbolic interaction theory as it is practiced in modern days. The theory is mainly concerned with the use of symbols in the communication in the society and is based on three premises. The first premise of the symbolic interactionism stipulates that human beings act towards things in the environment based on the meaning they have assigned them. The second premise of the theory states that people derive meaning out of social interaction with one another and the language is the vehicle that facilitates the interaction. The third premise of the theory is that thought modifies each individual's interpretation of the meaning she/he attaches to things in the environment. Based on this theory, the study speculates that the meaning the participants (students, lecturers and other staff members) attach to inclusion of students with VI will influence their subsequent behaviour in the tertiary institutions. The participants will express meaning they attach to inclusion using symbols such as spoken words, written texts, actions and practices. Whilst this chapter has provided the theoretical lens for the study, the next chapter will deliberate on the methodology used.

CHAPTER FOUR

RESEARCH METHODOLOGY AND DESIGN

4.1 INTRODUCTION

This chapter is mainly concerned with the methodology used in the study. It begins with discussion on the research paradigm and provides detailed account of the epistemological and ontological assumptions on which the study is based. Then, there is review of literature on the philosophy of interpretivism as well as research methodology applied in the study. This is followed by discussions on the settings in which the study was done and the participants of the study. Thereafter, the chapter discusses the population, sample and the sampling techniques employed in the study. A section of the chapter provides detailed account of data collection techniques and the various tools used in the data collection. The chapter also provides accounts on of piloting and the techniques used in data analysis. Then, the chapter provides discussion on ethical consideration made in the study before making conclusion.

4.2 RESEARCH PARADIGM

Research paradigm has been defined by different scholars in different ways. Creswell (2014) defined research paradigm as a general philosophical orientation about the world and the nature of research the researcher brings to a study. On the other hand, Kivunja and Kiyini (2017) observed that research paradigm constitutes the abstract beliefs and principles that shape how a researcher sees the world and how she/he interprets and act within the world. Kivunja and Kiyini went on to explain that a research paradigm is a conceptual lens through which the researcher examines the methodological aspects of their research project to determine the research methods to be used; and how data will be analyzed. The idea is supported by Khartri (2020) who observed that research paradigm directs the researcher in the overall process of investigation including selection of research problem, setting the research questions, determining the nature and the type of reality, knowledge, methodology and value of research work.

Research paradigms play a significant role in research projects. They provide belief and dictate which influence should be studied, how it should be studied and how results should be interpreted by scholars in a particular discipline (Kivunja & Kiyini, 2017). Also, paradigms define a researcher's philosophical orientation and exert significant implication for every decision made in research (Khartri, 2020). Thus, the type of paradigm embraced by individual researcher will often lead them to adopt qualitative, quantitative, or mixed methods in their research. Okesina (2020) observes that there are four elements that constitute research paradigm, namely, epistemology, ontology, methodology and axiology.

Axiology has been defined as the aspect of research that is concerned with values in research as well as the ethical considerations. The ethical considerations in this study have been articulated in the last paragraph of the study. Also, each of these elements of the research paradigm and their application to this study has been discussed in the subsequent paragraphs of the study.

4.2.1 Epistemological Assumptions

Epistemology is the study of the theories of knowledge (Mugenda & Mugenda, 2019). Epistemology helps us to understand what it means to know, and how one comes to a state of knowledge. On the other hand, the epistemology of a research paradigm refers to how researchers come to know, the nature of their knowledge and how to communicate the knowledge to contribute to the body of knowledge in a particular field of study (Khartri, 2020). Okesina claimed that there are four ways in which researchers can come to know: intuitively, authoritatively, logically, and empirically. Okesina argues that the natural source of knowledge is belief, faith or intuition. People knowledgeable about a topic and books constitute an authoritative source of knowledge (Boon & Baalen, 2018). Knowledge derived from engaging in a logical reasoning and self-introspection will constitute a logical source of knowledge.

The last source of knowledge is empirical knowledge which is based on verifiable and objective facts (Khartri, 2020). Since this study concerning inclusion of students with visual impairments have relied on data obtained from lecturers, administrators, students

with visual impairments and those without disabilities, it is assumed that they have knowledge about the phenomena and are authorities in the field of study. The knowledge they contributed constitute an authoritatively source of knowledge.

4.2.2 Ontological Assumptions

While Mugenda and Mugenda defined ontology as the study of conception of reality, Rehman and Alharthi (2016) defined it as the nature of our belief about reality. Ontology of research paradigm is the way the world is thought to be and its very nature or the reality of social phenomena being investigated. Okesina identified four ontological positions based on research paradigm. These include naïve realism or single reality, relativist ontology, historical realism, and non-single realities. Single reality assumes a world of material objects which could be known through a researcher's experience, which is external, objective, and independent of social actors (Okesina, 2020). On the other hand, relativist ontological stance holds that research problems have multiple realities that can be explored and meaning derived through the interaction between the researcher and research participants. This study has adopted multiple realities ontological stance. The researcher believed by interacting with participants of the study, he could obtain data that would lead to development of multiple realities concerning inclusion of students with visual impairments in tertiary institutions.

4.2.3 Philosophy of Interpretivism Paradigm

This study embraced interpretivist research paradigm as the foundation on which the study was anchored. The interpretivism paradigm determined the research approach, design and methods used in studying the inclusion of students with visual impairments in tertiary institutions. The philosophy of interpretivism puts more emphasis on the way people construct meaning on a phenomenon in the social context (Kivunja & Kiyini, 2017). This idea has been supported by Rehman and Alharthi (2016) when they observed that the main goal of interpretivism is to enable researchers understand social phenomena in their context. In the context of this study, the inclusion of students with visual impairments in the regular classrooms is a new philosophy and practice in the education of persons

with disabilities (McCarthy & Shelvin, 2017; Correa–Torres, Conroy, Rundle-Kahn & Brown-Ogilvie, 2018).

The philosophy of inclusion has engendered a lot of debate among scholars in the last 50 years. The proponents of inclusion have advanced several reasons to support it. One of the reasons they have advanced is that students with disabilities have a right to live and participate in the activities of their societies as their regular peers (McCarthy & Shevlin, 2017; Henkebo, 2018; Zelelew, 2019). They have argued that regular institutions' placement represents the least restrictive environment which is a requirement of the law (Hornby, 2015). The opponents of the debate, on the other hand, have argued that students with disabilities are best served in an environment with high concentration of resources found in special institutions (Papuda-Doliska, 2017). Therefore, there was need to study inclusion and understand it in the institutions where it is practiced.

One of the tenets of interpretivist paradigm is that reality is socially constructed (Kivunja & Kiyini, 2017). The same idea is echoed by other scholars who observe that society is made up of individuals who interact with other individuals; and the society to ascribe meaning of different social phenomena (Redmond, 2015; Rehman & Alharthi, 2016). On the other hand, Hammersley (2013) observed that reality consists of people's experiences with the world in which they live. In the context of this study, lecturers, students with visual impairment and those without as well as support staff interact with one another in the institution where learning takes place. They subscribe meaning to social phenomena (inclusion of students with visual impairment) in their institutions.

Based on the idea that people can interact and constructing meaning of a phenomenon, the paradigm is also known as constructivism (Kivunja & Kiyini, 2017). Creswell observed that interpretivist believe that the participants in a social context can interact with one another and construct meaning of situations by typically forging a discussion or interaction. The main goal of interpretivist researcher is to understand social phenomena through the eyes of participants rather than the researcher. In this study, the researcher aimed at finding out the participants' understanding of inclusion of students with visual impairments in tertiary institutions.

Social phenomenon has varied and multiple meanings that can only be understood from the perspectives of the people who live and interact with the situation (Creswell, 2014). Tertiary institutions have different persons who may understand inclusion in different ways. It is important, therefore, to incorporate different persons to obtain their varied perspectives of inclusion based on their interpretation. According to Pham (2018), the knowledge and meaning people have on a phenomenon is dependent on their interpretation of it. The main effort of the interpretivist is to understand things from the perspective of the subject being studied.

Creswell observed that human beings can engage with their own world and make sense of it based on their historical and social perspective. Hence, the researcher used interpretivist paradigm as a lens to study a phenomenon must recognize that their personal, cultural, and historical background will shape the interpretation of their research. The interpretivism paradigm assumes that the researcher will engage the participant in interactive process through mingling, dialoguing and listening to get valuable data (Donoghue, 2018). To understand inclusion of students with visual impairments in tertiary institutions from the perspectives of the participants, the researcher engaged in data collection. Thus, the researcher had a holistic and in-depth understanding of inclusion.

A good research involving interpretivist paradigm, therefore, should take place in the natural setting in which the participants live or work. This research investigated the perspectives of participants concerning inclusion of students with visual impairments in the institution itself. Rehman and Alharthi (2016) contend that interpretivist researcher engenders the use of qualitative data collection techniques such as open interviews, semi structured interviews, and observations. Creswell observed that qualitative researchers tend to use open-ended questions so that participants can share their views. Furthermore, the paradigm does not precede research but follows it so that it is grounded by the data collected (Kivunja & Kiyini, 2017).

The paradigm proposes that people derive their construct from the field by having an in-depth examination of the phenomenon of interest (Creswell, 2014). Through observation, people collect information about events, while through interpretation, they make meaning

of it. The paradigm is appropriate for this study since it enabled the researcher to understand the meaning people assign inclusion of students with visual impairments in tertiary institutions based on their social interaction with the phenomenon.

Although interpretivism paradigm was used as the lens to study inclusion of students with visual impairments in tertiary institutions in this study, the paradigm has come under criticism. According to Rehman and Alharthi, the paradigm has been criticized for being too soft to yield theory despite having been used to conduct various studies involving human relations.

4.3 RESEARCH METHODOLOGY

Research methodology is the systematic, theoretical analysis of the methods applied in a particular field of study (Ugwuowo, 2016). It is concerned with understanding the varied assumptions of underlying techniques used in research, and it encompasses concepts such as paradigm, research approach and design. Kivunja and Kiyini (2017) defined research methodology as a broad term that is used to refer to the research design, methods, approaches, and procedures used in investigation that is well planned to find out something. Accordingly, research methodology includes assumption made, limitations encountered and how they were mitigated (Khatri, 2020). Therefore, researchers should know the criteria by which they can use certain techniques and procedures in different studies. Whilst research paradigm is concerned with the epistemological assumptions that form the foundation of a study, research approach is the broad assumptions to detailed methods of data collection. For instance, a researcher may find it prudent to adopt qualitative approach to study people's understanding of a certain phenomenon in the social interaction.

4.3.1 Research Approach

This study adopted qualitative approach to collect data. Qualitative research approach has been defined in various ways. Haradhan (2018) defined qualitative research approach as a form of social action that stresses on the way people interpret and make sense of their experience to understand the social reality of individuals. Eyisi (2016) observed that qualitative research is a strategy that enables researchers gain insights

into how people construct reality about phenomenon as it is experienced, structured, and interpreted by the people during their lives. On the other hand, Jameel, Shaheen and Majid (2018) posit that qualitative research is a systematic study that seeks to document individual perspectives, experience, thought and behaviour. This implies that individuals can construct meaning of situations through interacting with one another and the researcher must find out their subjective meaning of the situation based on their experience.

In the context of this study, lecturers, students with visual impairments and those without, and other staff in the tertiary institution gave their experience with inclusion. This study sought to find out the experience of personnel and students in the tertiary institutions concerning inclusion. According to Donoghue (2018), qualitative research approach provides participants with an avenue through which to examine the way people make sense of their concrete real-life experiences in their own mind and their own words.

The purpose of qualitative research is to describe and interpret issues or phenomena systematically from the point of view of individuals or population being studied, and to generate new concepts and theories that emerge from data (Haradhan, 2018). The study concerning inclusion of students with visual impairments in tertiary institutions provided the participants with the opportunity to give their perspectives concerning inclusion. The findings of the study generated from the data led to the development of new concepts and theories about inclusion. The emergent of theories from data allowed researchers to construct and reconstruct theories where necessary.

Croplay observed that reality is socially constructed, and consist of sets of impression, inferences, and opinions in a person's mind. Hence, qualitative researchers must not only rely on the use of questionnaires to collect data but must also interact with the participants and observe their behaviour during data collection. This necessitates researchers to be in the field to know what meaning people have formed about a phenomenon. The researcher engaged with the participants in the field to understand the meaning they have concerning the phenomenon being studied (inclusion of students with visual impairments). According to Hammerberg, Kirkman and Lacey (2016), qualitative

approach provides researchers with an opportunity to answer the question of meaning, experience, and perspectives, most often from the standpoint of the participants.

In an attempt to understand how people make sense of and interpret phenomena in terms of meaning, qualitative researchers study things in their natural setting (Aspers & Corte, 2019). It implies that qualitative researchers may need to observe the way people go about their lives in their usual manner (Eyisi, 2016). The idea is supported by Jameel, Shaheen and Majid (2018) when they observe that qualitative research generates the narratives of individual or groups by observing their behaviour and considering how their nuances of the context influence their perspectives and experiences. This study was done in the tertiary institution that includes students with visual impairments. The researcher believed that by interacting with the participants in the natural settings in which they operate on a daily basis could provide him with the opportunity to have a better understanding of inclusion.

There are several reasons why this study adopted qualitative research approach. The research approach involves the use of multiple sources of data from participants in their natural settings (Mugenda & Mugenda, 2019; Eyisi, 2016). The idea has been echoed by Donoghue who observed that qualitative researchers collect a variety of data to gain the necessary insight into the phenomena largely by means of studying narratives of the way in which people communicate the way they understand the world. Punch (2014) observed that data collection in qualitative research mostly involves speaking or writing and other forms of communication such as diaries, literary or journalistic works, audio, or video tapes. Also, the qualitative researcher may do document analysis during data collection in the field. The abundant data from the various sources allowed for the triangulation of data thereby enhancing the accuracy and reliability of the research findings. This study used a variety of instruments to collect data including open-ended questionnaire, semi structured interview, Focus Group Discussion, and infrastructural observation checklist. The various data collection tools resulted into accuracy of the findings of the study concerning inclusion of students with visual impairments.

The qualitative researcher is directly involved in data collection by observing the behaviour of the participants (Creswell, 2014). The researcher is able to engage with the

participants by observing the way they go about their lives daily. The involvement of the researcher in the data collection in the setting where the participants live, work and learn coupled with the use of variety of data collection tools such as observation, open-ended interviews and field notes resulted into having an in-depth and holistic understanding of phenomena (inclusion of students with visual impairments) being studied (Aspers & Corte, 2019; Creswell, 2014; Mugenda & Mugenda, 2019).

According to Haradhan (2018), qualitative research aims at providing a detailed understanding of human behaviour, emotion, attitude and experience. Kielmann, Cataldo and Seeley (2012) contend that qualitative research is holistic in the sense that it seeks to situate the meaning of a particular behaviour and ways of doing things in each context.

4.3.2 Single Case Research Design

Research design is a framework or blueprint for conducting the research project and specific procedures necessary for obtaining information needed to solve research problem (Creswell, 2014). This study adopted single case study research design to explore the inclusion of students with visual impairments in tertiary institutions in Kenya. The research design has been defined in various ways by different scholars. Mugenda and Mugenda defined case study as an empirical inquiry that investigates a contemporary phenomenon within its real-life context, when the boundaries between the phenomenon and the context are not clear, and in which multiple sources of evidence is used. Starman (2015) defined case study as an in-depth exploration of multiple perspectives of the complexity and uniqueness of a particular project, policy, institution and program in real-life.

Other scholars have defined case study as a methodology that help in the exploration of a phenomenon within a particular context through various data sources (Rashid et al., 2019). The research concentrated on one tertiary institution that had been known to include students with visual impairments; and used a variety of data collection instruments. The researcher participated in the data collection by observing and interviewing the participants (Donoghue, 2018). In the end, the researcher had an in-

depth and holistic understanding of inclusion of students with visual impairments in tertiary institutions.

The study used qualitative research approach that is characterized by natural setting, multiple sources of data; and the researcher as the main instrument in the research (Donoghue, 2018). This idea has been supported by Starman (2015) who observed that qualitative case study is considered a part of qualitative research methodology that falls within interpretative paradigm that puts more emphasis on the subjective experience and meaning of phenomena by the individuals in the society. Moreover, case studies focus on depth of any social issue than its breath; and thus, it can provide a holistic picture of the phenomenon under study (Haradhan, 2018). Case studies can provide richer theoretical insights than large empirical research. In the context of this study, the researcher used a variety of data collection instruments to collect data from different cadre of participants including but not limited to lecturers, students with visual impairments and those without as well as support staff to gain a deeper understanding of the inclusion of students with visual impairments in tertiary institutions.

This design was appropriate for this study in several ways. The interpretivist nature of the study allowed the researcher to interact with the participants and get their understanding and meaning of the inclusion of students with visual impairments in the tertiary institutions (Rehman & Alharthi, 2016). Moreover, the research design helped in the exploration of a phenomenon within a particular context using a variety of data sources (Bhatta, 2018). The use of multiple sources of data coupled with triangulation enabled the researcher avoid biases. Consequently, the researcher was able to understand multiple facets of the inclusion of students with VI in the tertiary institution (Rashid et al., 2019). Eventually, the research design allowed the researcher to gain in-depth insights on inclusion of students with VI in tertiary institutions.

4.4 THE SETTING OF THE STUDY

This study was conducted in a tertiary institution involved in primary teacher's education in Machakos County, Kenya. For a long time, the institution was awarding teachers certificates in Primary teacher education until 2000 when the curriculum for primary

teachers' training colleges was changed to conform to the newly introduced Competence Based Curriculum (CBC) system of education. The change meant that the trainees in these colleges are to be awarded with diplomas in education. Currently, the institution has three cohorts of students, namely: those pursuing Diploma in Early Childhood Teacher Education (DECTE); Diploma in Primary Teacher Education (DPTE); and Diploma in Primary Teacher Education offered to trainees upgrading to address CBC.

The upgrading course is intended for teachers who had been trained in the old system of education and now wish to train for one year in CBC. The trainees in the upgrading course are awarded a Diploma in Primary Teacher Education. The one-year training not only enables them to acquire knowledge, skills, and competencies to teach CBC but also to increase their employability. The institution has 466 students of which 127 are pursuing Diploma in Early Childhood Education, 65 are training to attain Diploma in Primary Teachers Education and 274 in upgrading course. The institution has 21 students with VI of which 14 are pursuing Diploma in Early Childhood Education and seven (7) are upgrading. The institution does not have students with VI pursuing a Diploma in Primary Teacher Education at the moment. The entry requirement for a Diploma in Primary Teacher Education is an overall grade C with an emphasis of grade C in mathematics and sciences in the Kenya Certificate of Secondary Education. This implies that most students with VI are locked out of the training in primary teachers' education as majority of them perform poorly in sciences and mathematics in the national secondary exams. The poor performance of students with VI in mathematics and sciences is a phenomenon that has attracted the attention of several scholars over the years.

4.5 POPULATION, SAMPLE AND SAMPLING

Population refers to the entire group of individuals, units or objects having certain observable characteristics (Kothari & Garg, 2019). Sample is a set of respondents drawn from the larger population. The methodology used to get the sample from a larger population depends on the type of analysis being performed, but it may include probability sampling techniques such as simple random sampling and systematic sampling or non-probability sampling techniques such as convenience sampling or purposive sampling techniques.

4.5.1 Target Population

The target population is the total of all objects, elements, or units, among which or whom the researcher is interested in investigating a particular problem (Mugenda & Mugenda, 2019; Young, 2016). This definition is echoed by Orodho (2015) where he defined target population as a set of elements that the researcher focuses upon; and to which the results obtained by testing the sample should be generalized. On the other hand, Punch (2014) defines the target population as that which the researcher wants to generalize the results of the study. Mugenda and Mugenda posit that target population can either be finite or infinite. Whereas the finite population refers to population that is defined and listed, infinite population refers to population that is defined but cannot be listed. According to Mugenda and Mugenda, population listing refers to a population frame and the list of all the members of the population. The target population for this study comprised of administrators, lecturers, students with visual impairments, students without visual impairments and support staff of the tertiary institution including students with visual impairments in their program. To study the target population, the researcher adopted purposive sampling technique to come up with appropriate sample size to be studied.

4.5.2 Purposive Sampling Techniques

Sampling is the process of selecting a number of individuals or objects from a population such that the selected groups contain elements representative of the characteristics found in the entire group (Young, 2016; Kombo & Trump, 2011). During the process of sampling, the researcher seeks knowledge or information about a whole population, objects, or events by observing some of them and extending the finding of the study to the entire population (Orodho, 2015; Young, 2016).

Punch observes that sampling is essential in both quantitative and qualitative studies as researchers need not only make sampling decision about the people to interview or events to observe but also setting and process during their studies. Sampling is an integral process of research because one cannot study everyone everywhere doing everything (Punch, 2014).

According to Orodho, there are several advantages of sampling in a research study that include:

1) Gathering data on a sample is less expensive. The cost of conducting research is proportionate to the number of hours spent on data collection. This may involve high cost if the number of the participants is high, and the area is geographically wide.

2) Gathering data on a sample is less time consuming. The participants that form a sample are generally less compared to the whole population. Consequently, it will take the researcher a few hours to reach all participants in a sample as compared to the whole population.

3) Sampling may be the only practical way to collect data. It is practically impossible for a researcher to study everything in a given study even when the study involves one case (Kabir, 2016).

This study adopted purposive sampling to select appropriate sample size for the study. The purposive sampling is defined as a sampling method whereby the researcher selects participants in a deliberate way or with some purpose or focus (Kothari & Garg, 2019).

4.5.3 Size of the Sample

Sample size refers to the number of items to be selected from the target population to constitute the sample of the study (Kothari & Garg, 2019). Orodho (2015) states that a sample size is a small set of the large population from a finite part of statistical population whose properties are studied to gain information about the whole. According to Kothari and Garg, the size of the sample should neither be excessively large, nor too small but should be optimum. An optimum sample size should fulfill the requirements of efficiency, representativeness, reliability, and flexibility. The idea has been given a boost by Mugenda and Mugenda when they observed that a sample size should not be too small to support claim of having achieved the objectives of the study or too large to permit the deep, case-oriented analysis of qualitative inquiry.

A qualitative researcher would rarely use probability sampling but would rather use some sort of deliberate sample (Punch, 2014). This implies that the sampling process in qualitative research do not undergo rigorous statistical process witnessed in quantitative research. Mugenda and Mugenda observe that determining a sample size in qualitative research is dependent on the researcher's judgment unlike in quantitative research where the sample is predetermined prior to the study. A sample of 45 participants comprising of

20 students with visual impairments, 10 students without visual impairments, 3 administrators, 5 lecturers and 2 support staff participated in the study. The support staff comprised of 1 Braille technician and 1 librarian. The researcher believed that the participants held strategic offices within the institution and were likely to be conversant with issues that affect the academic performance of students including those with visual impairments. They were likely to provide useful information to the study. Furthermore, the administrators were in positions in which they could easily influence policies on inclusion. Therefore, it was important to engage them in the study if it was to have an impact on the way inclusion is practiced in the tertiary institutions. The researcher discussed with the participants the intent of the study and allowed them to show their willingness and availability to participate in the study.

4.6 THE PARTICIPANTS OF THE STUDY

The researcher had initially planned to study a sample of 45 participants comprising of 20 students with VI, 10 students without VI, 3 administrators, 10 lecturers and 2 support staff. But due to constraint of resources, the sample size was reduced to 32 participants. They comprised of 15 students with VI; 5 students without VI; 7 members of the teaching staff; 3 administrators and two support staff. The students' cohort comprised of males and females mainly pursuing their Diploma in Early Childhood Education and Diploma in Primary Education through the upgrade model. The bio data of the participants has been captured in the table below:

Table 4.6: List of Participants

Participants Group	Course being Studied	Tools Used to Collect Data
A - Students with VI		
Students with VI (Serial No. 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14 and 15)	DPTE	Qualitative open-ended questionnaire (Q-open)

• The students had severe VI and comprised of 8 females and 7 males. • All the students were Braille users and their average age was 23		
B- Students with VI		
Students with VI (Serial No. 01, 02, 03, 04, 05, 06, 07, 08) • The students had severe VI and comprised of 4 females and 4 males. All the students were Braille users, and their average age was 23		Semi-structured Interview (SSI) Focus Group interview (FGI)
C - Students without VI		
Students without VI (Serial No. 16, 17, 18, 19, 20) •The students comprised of 2 female and 3 males. • The average age was 22	DPTE	Qualitative open-ended questionnaire
D - Lecturers' Bio Data	**Data Collected**	
Lecturers (Serial No. 01, 02, 03, 04, 05, 06, 07) • The seven lecturers comprised of 5 males and 2 females • The participants had Master of Education in different subjects • The average age of the participants was 40 • Two male participants were Braille users	Qualitative open-ended questionnaire Semi-structured Interview (SSI)	
E - Administrators Bio Data		
Administrators (serial No. 01, 02, 03)	Qualitative open-ended questionnaire (Q-open)	

• Three administrators comprised of 2 females and one male • The two administrators had Master of Education and one had PhD • The average age of the participants was 53	Semi-structured Interview (SSI)
F - Support staff	
Support staff (serial No. 01, 02) • One Braille transcriber and one ICT technician)	Qualitative open-ended questionnaire (Q-open)

Key to abbreviations of tools

Q-open: Qualitative open-ended questionnaire; SSI: Semi-structured interview; FGI: Focus Group Interview.

4.7 DATA COLLECTION TECHNIQUES AND TOOLS

Research tools are an instrument designed to obtain data from the subject or on each variable in a study (Mugenda & Mugenda, 2019). There are various methods of data collection procedures and tools allied to qualitative research. A researcher must be judicious in the selection of data collection tools that best suit his study (Kothari & Garg, 2019). According to Kothari and Garg (2019), the choice of appropriate research tools is mainly influenced by four factors.

These include:

1) Nature, scope, and objectives of the study. This constitutes the most important factor affecting the choice of a particular procedure and tools. The tool selected should suit the type of the inquiry conducted by the researcher.
2) The availability of funds for the research determines the tools to be used in data collection to a large extent. When the funds at the disposal of the researcher are limited, he/she will adopt procedures and tools which are comparatively cheaper and may not be efficient and effective as some costly methods.
3) Time factor - Some procedures and tools used in the collection of data requires relatively more time whereas other procedures and tools of data collection use a

shorter duration. Hence, researchers must select procedures and tools that best suit the time available for the study.

4) Precision required for undertaking the study is another important factor to consider during the selection of procedures and tools to use in the collection of data.

However, all data collection tools have their merits and demerits and therefore none of the data collection tools is superior to another (Kothari & Garg, 2019).

It is important that during the data collection exercise the researcher exhibit authoritative and judgmental behaviour towards the participants (Orodho, 2015). The researcher should be flexible and constantly judge his behaviour to suit the participants from whom the information is sought. This study on the inclusion of students with visual impairments in tertiary institutions used open-ended questionnaire, semi-structured interviews, focus group discussion and infrastructural observation checklist to obtain data from the participants of the study.

4.7.1 Open-ended Questionnaire

A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from participants (Abawi, 2017). This method of data collection is quite popular particularly in case of big enquiries (Kothari & Garg, 2019). It consists of a number of questions printed or typed in a definite order on a form for participants to provide their perspectives concerning the enquiries. Kombo and Tromp (2011) define a questionnaire as a research instrument that gathers data from a large sample.

The use of a questionnaire as data collection tool has several purposes. Mugenda and Mugenda observe that questionnaires can translate research objectives into specific questions, and hence, they enable the participant to provide their opinions and views about a phenomenon being studied. Also, the questionnaire forms a permanent record of the study for the purpose of verifications and reference for the future use of the tool. Questionnaires can also be used to speed up the collection of urgently required data (Kothari & Garg, 2019).

There are three types of questionnaires commonly used in research. These are: structured, semi structured and unstructured questionnaire (Abawi, 2017; Punch, 2014). In structured questionnaire, individual items tend to be highly structured and close-ended while unstructured questionnaire use open-ended items. Punch observes that a semi structured questionnaire is a powerful tool that borrows heavily from both the structured and unstructured questionnaires. In semi structured questionnaire, some questions have response categories provided while other items are kept open-ended to allow the subjects provide in-depth analysis of the issues under investigation from their perspectives.

The use of questionnaire has several merits and demerits. Kombo and Tromp (2011) observe that the use of questionnaire can facilitate the collection of data from a large-scale sample from diverse region. As a result, the researcher is saved the valuable time and money involved in data collection. However, the use of questionnaires as a data collection tool may occasionally result into low rate of return of the duly filled questionnaires due to non-response of some participants. There is also a possibility of ambiguous replies or omissions altogether of some questions. Despite their popularity, questionnaires can only be used with educated and cooperating participants. Consequently, participants with valuable information may be left out on account of illiteracy (Orodho, 2015). Also, the use of questionnaires upholds confidentiality amongst the participants. The participants therefore can freely provide their views and opinions on the phenomenon being studied. Furthermore, questionnaires can provide for participants who are not approachable to be reached conveniently (Kothari & Garg, 2019) to participate in the study and to give their valuable responses. Besides, questionnaires accord the participants adequate time to provide well thought out answers to the questions.

The study relied on open-ended questionnaire to get the perspectives of different participants concerning the inclusion of students with visual impairments in tertiary institutions. The open-ended questionnaire was filled by 20 students with visual impairments, 10 students without visual impairments, three administrators, and five heads of department, five lecturers, and two support staffs. The researcher provided the principal of the teachers' training institution under study with the questionnaires to

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distribute to various cadres of participants. Also, the researcher relied on the principal of the institution to collect the questionnaires from the participants. The questionnaire was divided into two parts, namely, part A and part B.

While part A asked questions related to demographic details of the participants, part B concentrated on questions related to the three key questions being addressed by the study namely:

1) What current strategies and resources were being used by tertiary institutions to make curriculum accessible to students with visual impairments?
2) What infrastructural modifications had been done in the tertiary institutions to accommodate students with visual impairments?
3) What policies guided the inclusion of students with visual impairments in tertiary institutions?; and lastly,
4) What strategies could be used to improve inclusion of students with visual impairments in the tertiary institutions?

4.7.2 Semi-Structured Interview

The interview method of collecting data involves presentation of oral-verbal stimuli and reply in terms of oral verbal response (Kothari & Garg, 2019; Orodho, 2015). Thus, the process of collecting data through interview requires the researcher to be on the spot; and to meet people from whom data is to be collected (Kothari & Garg, 2019). Interviews provide the researchers with the opportunity to cross examine the participants who are supposed to have knowledge about the problem being investigated (Kothari & Garg, 2019). As a result, the interviewer gets clear and detailed perspectives of the participants concerning the issue being investigated (Abawi, 2017).

There are different types of interviews. Abawi provided typology of interviews consisting of structured, semi structured and unstructured interviews. Punch observes that the main difference between different types of interviews is the degree to which they are structured; and how deep the interview tries to go. In the structured interviews the interview questions are planned and standardized in advance and pre-coded categories are used for

response, according to Punch. Besides, the interview does not attempt to go to greater depth.

On the other extreme end of the continuum is the unstructured interview in which interview questions are not preplanned and standardized but are questions to get the interview going and to keep it moving (Orodho, 2015). In the typology of different types of interviews, semi-structured interviews lie between structured and unstructured interviews (Punch, 2014).

The use of interviews as a tool of collecting data in research has its merits and demerits. Kothari and Garg (2019) observe that interviews can be used to gather a lot of information of greater depth. The tool allows researchers to have an opportunity to restructure the questions and probe and get more clarifications of issues of concern (Kothari & Garg, 2019). Also, the interviews provide the researchers with an opportunity to use other methods of data collections to complement interview data.

Thus, the researcher can use other methods of data collection such as observation to complement the recorded interview data in a study. Furthermore, the language used during interviews can be adapted to the ability or educational level of the person being interviewed and as such misinterpretation concerning questions can be avoided (Mugenda & Mugenda, 2019). Consequently, data can be obtained from participants with varied educational levels.

Despite their popularity as a method of collecting data, interviews have some weaknesses too. Interviews are expensive methods especially when a large and widely spread geographically sample is considered for investigation (Kothari & Garg, 2019). Also, interviews can be time consuming especially if the sample being studied is large and participants are widely spread out (Kabir, 2016; Abawi, 2017). In addition, there is a possibility of bias of interviewers and the participants. The bias may result into distortion of research findings.

The present study concerning the inclusion of students with visual impairment in tertiary institutions used semi structured interviews to collect data from a sample of 10 participants comprising of five students with visual impairments, two lecturers, one head

of department, one regular student and one administrator. The sample that was interviewed was selected based on several reasons.

Firstly, students with visual impairments had attributes which were of interest to the study. They were likely to provide useful information that would assist in answering the research questions. Secondly, students without visual impairments interacted with their peers with visual impairments in lecture rooms and other amenities. They were likely to provide useful information regarding inclusion of students with visual impairments. Lastly, the lecturers were likely to be conversant with the methods and strategies used to make curriculum accessible to all students in the tertiary institution while the administrators have a responsibility of ensuring that students have access to curriculum and perform well in both formative and summative evaluation. They provided useful information to the study.

The researcher had face-to-face interview sessions with participants in a separate room that guaranteed the participants privacy and confidentiality. The sessions enabled the researcher to directly question, probe, and have open-ended discussions with the individual participants (Mugenda & Mugenda, 2019). As a result, the researcher was able get detailed information concerning the participants' meaning and interpretation of the inclusion of students with visual impairments in the tertiary institutions. The interviews further, provided the researcher with an opportunity to get nonverbal communication of the participants during data collection. Thus, the researcher was in position to get clear and detailed perspectives of the participants. The interview sessions were recorded using the digital recorder and later transcribed verbatim.

4.7.3 Focus Group Discussion

The Focus Group Discussion (FGD) is a special type of interview in terms of its purpose, size, composition, and procedure (Orodho, 2015). It is usually compost of 6-8 persons who do not know each other prior to the meeting and who have been selected because of characteristics relevant to the topic being studied. According to Punch (2014), FGD is a general term where the researcher works with several people simultaneously, rather than just one person. Mugenda and Mugenda observe that FGD are used to identify issues, terms, and interpretation from a group of individuals with similar characteristics.

To conduct FGD, a criterion must be set for selecting the participants (Orodho, 2015). Similarly, the researcher must decide on the topic to be discussed beforehand (Punch, 2014). During the discussion, the researcher takes the role of a facilitator or moderator rather than act as an interviewer by guiding the discussions with main questions, follow up questions and probes to gain in-depth understanding of the attitudes, beliefs, behaviours, motivations, perceptions of the group (Kabir, 2016). Since the researcher's role is to moderate the discussion, he/she must prepare a discussion guide to ask general questions (Punch, 2014). A good facilitator must understand the topic, remain neutral, and probe responses without influencing the consensus reached by the group (Kabir, 2016).

FGD are attractive data gathering options when a researcher is trying to probe varied aspects of people's behaviour (Kabir, 2016). They are inexpensive, data rich, flexible, stimulating, recall-aiding, accumulative and elaborative method of data collecting (Punch, 2014). However, FGD is faced with the problems associated with group culture and dynamics in achieving balance in the group interaction. Hence, there is need to have an experienced facilitator if FGD is to yield quality data (Mugenda & Mugenda, 2019).

The researcher had one FGD for students with visual impairments comprising of totally blind students and students with low vision. The sample size of eight (8) students was selected randomly from the students who had participated in the first round of the study by filling-in the open-ended questionnaires. The FGD took place in the hall within the institution to provide the participants with adequate space in conformity with the Covid-19 protocols that requires people maintain social distance at all times. During the discussions, the researcher facilitated, moderated, monitored and record group interactions using a digital recorder (Punch, 2014). Also, the researcher used his field notebook to write down the main issues that had emerged from the discussions.

4.7.4 Infrastructural Observation Checklist

Observation as a method of data collection has been defined in various ways by different scholars. The Centre for Disease Control (2018b) defined it as a way of gathering data by watching behaviour, events or notifying physical characteristics in their natural setting.

The definition is in consonance with the definition given by Nigel (2017) who stated that observation involves seeing things such as objects, processes, relationships, and events, and formally recording the information while Mugenda and Mugenda (2019) look at observation as a technique of collecting data in both the natural and social science; and in which the researcher records what he/she observes in the sample of subjects or objects.

According to Kothari and Garg, observation becomes a scientific tool of data collection in research when it is systematically planned, recorded to serve a formulated research purpose; and is subjected to checks and control on validity and reliability. Observation provides the researcher with the opportunity to obtain data without asking the participants for their cooperation. However, the researcher must define the behaviour, action, and activities to be observed prior to observation if he/she is to obtain quality data (Mugenda & Mugenda, 2019).

During data collection, the researcher can engage in participant observation or non-participant observation (Orodho, 2015). In participant observation, the observer makes himself/herself a member of the group he/she is observing so that he/she can experience what the members of the group is experiencing (Kothari & Garg, 2019). In non-participant observation, the observer is detached from the group being observed without any attempt to his/her part to experience what the people being observed are experiencing (Creswel, 2014). There are several merits that accrue from engaging in participant observation. For instance, it provides ample opportunity in which the researcher records the natural behaviour of the group (Kothari & Garg, 2019). Furthermore, the researcher can gather data that could otherwise be inaccessible (Punch, 2014).

The use of observation as a data collection method has its merits and demerits. Creswel noted that observation accords the researcher with firsthand experience with the participants. Consequently, the researcher gets detailed information concerning the phenomenon being investigated. Also, observation method of data collection provided the researcher with an opportunity to verify genuineness of data obtained by other data collection tools such as questionnaires. Observation as a method of data collection is expensive and time consuming (CDC, 2018b). In addition, it is susceptible to the bias of

the observer. This may result into data obtained not depicting the true picture of the reality on the ground.

There are different ways of collecting observation data. According to CDC (2018b), checklist is the most standard way of collecting observation data. The checklist is generally compost of preset questions and responses. Also, observation guides can be used to obtain observation data. The guide lists the intervention, process, or behaviour to be observed (Punch, 2014).

This study used infrastructural observation checklist mainly to collect qualitative data on the infrastructural modifications done on the building, physical environment, and facilities in the institution to accommodate students with visual impairments. The modifications that should be done on the tertiary institution's infrastructure include presence of pavements connecting various buildings, appropriate rails on staircases and balconies and sliding doors and windows. Also, the checklist was used to assess the level of illumination in the classrooms and halls of residence of students. Students with low vision generally require high level of illumination to perform visual tasks.

4.8 PILOTING QUESTIONS

Piloting has been defined as simulation of the formal data collection process on small scale to identify practical problems regarding data collection instruments, session, and methodology (Hurst et al., 2015). It involves administering interviews to a group of individuals who have similar characteristics with the target population; and in a manner that replicates how the data collection session will be conducted and the type of study materials to be used (Hurst et al., 2015). On the same idea, Mugenda and Mugenda observe that the purpose of pre-testing of the instruments is to ensure that the items in the instruments are clear and have the same meaning to all the respondents.

The practice of pre-testing is highly regarded as an effective technique for improving validity in qualitative data collection procedures and interpretation of the finding (Kyngas, Kaariaine, & Elo, 2020). According to Malmquvist, Hellberg, Mollas, Rose and Shevin (2019) the purpose of piloting should be to identify the necessity to modify questions and procedures that do not elicit appropriate response from respondents. Christine, Herwig

and Arne (2020) assert that the quality of research finding depends on asking the correct questions.

Researchers, therefore, should indulge in piloting to improve the research procedures and data collection instruments. Accordingly, piloting the instruments is an integral part of professionally conducted research studies. The idea is supported by Hurst et al. who remarked that piloting provides an opportunity to revise the study materials and data collection procedures to ensure that appropriate questions are being asked, and that the questions do not make the respondents uncomfortable.

During piloting, a common approach is to conduct a limited number of piloting interviews and perform an evaluation of the small dataset based on statistical criteria such as accumulation of non-response to varied questions (Christine, Herwig & Arne, 2020). Also, pre-testing should be conducted systematically and should include all personnel who will be involved in data collection procedures (Hurst et al., 2015). Although pilot studies are frequently conducted to assess the efficacy of the research instruments, they provide the novice researchers with opportunities to build their confidence, to be well informed and prepared to face the challenges likely to arise in the substantive study (Malmquvist, Hellberg, Mollas, Rose & Shevin, 2019).

The respondents on which the instruments are pre-tested should have similar characteristics as those of the target population (Orodho, 2015; Mugenda & Mugenda, 2019). However, the sample population for piloting research instruments must not be part of the sample for substantive studies. During piloting, the researcher should be able to assess the clarity of the instruments; assess the time taken by the respondents to complete answering the questions as well as identify the items in the instrument which are not clear and require to be reworked (Malmquvist, Hellberg, Mollas, Rose & Shevin, 2019; Mugenda & Mugenda, 2019).

In this study concerning the inclusion of students with visual impairments in the tertiary institutions, the researcher piloted the instruments at the Kenya Institute of Special Education. In this institute, students with visual impairments and those without undertake a diploma training course in special needs education. Thus, the students in the institute

had similar characteristics as students where the substantive study was done. The researcher piloted the research instruments to ensure that they function well. Also, piloting provided the researcher with the necessary experience of using the instruments, giving him more confidence.

4.9 DATA ANALYSIS AND INTERPRETATION

Data analysis is the process of bringing order, structure and meaning to the mass of information collected from the field (Mugenda & Mugenda, 2019). On the same concept the Centre for Disease Control (2018a) explains qualitative data analysis as the process of interpreting and understanding the qualitative data collected by the researcher. This study has adopted interpretive phenomenological data analysis approach to interpret the finding of the study. Sutton (2015) argued that phenomenological data analysis focuses on understanding how the human beings experience their world and provide the researcher with the opportunity to put themselves in another person's shoe to understand the subjective experience of the participants. Pietkiewics and Smith (2012) observe that interpretive phenomenological data analysis aims at providing evidence of participants' making sense of phenomenon under investigation, while at the same time documenting the researcher's meaning of the phenomenon. Mugenda and Mugenda (2019) observe that phenomenological data analysis approach seeks to discover the underlying structure or essence of human experience through the intensive study of an individual case. Thus, interpretive phenomenological data analysis approach enabled the researcher understand the inclusion of students with visual impairment from the perspectives of the participants.

The researcher engaged in manual inductive content analysis of the raw data by organizing and labeling data by use of codes to facilitate the final data analysis. According to Kyngas, Kaariaine, and Elo (2020) inductive content analysis is a widely used procedure in data analysis that involves the uses open coding to create categories, patterns and themes based on data. A code is a word or a short phase that symbolically assigns a summative salient attribute of a portion of a language (Jameel & Majid, 2018). Thus, the process of coding of an interview transcript involves identifying and labeling

themes and emerging patterns that correspond with the researcher's questions and objectives (CDC, 2018a).

The manual analysis involved several processes before final research findings were determined. Firstly, the researcher analyzed data derived from open-ended questionnaires and used code to identify emerging themes and patterns (Mugenda & Mugenda, 2019). Secondly, the researcher transcribed the data derived from semi structured interviews and focus group discussion. According to Sultton (2015) transcription of data is being arduous process; yet researchers must transcribe the qualitative data to convert the spoken words into written text that can facilitate analysis. Once the data had been transcribed, the researcher was able to engage in coding the data.

Lastly, data derived from open-ended questionnaire, infrastructural observation checklist, focus group discussion and the semi structured interview was later triangulated to gain a rich and clear understanding of inclusion of students with visual impairments in the tertiary institution. The field notes used at this juncture of data analysis to complimented data collected by other modalities of data collection.

4.10 CREDIBILITY AND TRUSTWORTHINESS OF THE FINDINGS

The credibility of qualitative research is analogous to validity in quantitative research (Mugenda & Mugenda, 2019). Credibility is established by determining the link between the data and the phenomenon the data is supposed to represent (Pathak, 2019). According to (Mamba, 2019), data is constructed in the minds of the participants and hence the researcher should let the participants tell him whether the data and the research interpretation accurately and convincingly represent realities concerning the phenomenon. Thus, credibility in qualitative research can best be explained by evaluating the accuracy of the research report. The researcher undertook varied procedures to ensure that the findings of the study were credible and trustworthy. These included the use of reflexivity, participant validation, triangulation, dependability, and transferability.

4.10.1 Reflexivity

Reflexivity refers to the fact that social researchers are part of the social world they study (Punch, 2014). Accordingly, social researchers will bring their personal background, culture, and experience in the qualitative studies (Creswell, 2014). Thus, the social researchers do not merely advance their biases and values in the studies but also reflect how their personal backgrounds have contributed to shape the direction of their studies (Creswell, 2014).

Korstjens and Moser (2018) noted that social researchers should be aware of the importance of their own role in the process of collecting, analyzing, interpreting data, and all the pre-conceived assumptions in their studies. Therefore, researchers undertaking qualitative studies should supplement their observation of FGD and interviews with reflective notes. The use of journals by qualitative researchers will help them capture their field experiences and events (Mugenda & Mugenda, 2019). The journal should reveal the researcher's underlying epistemological assumptions, prejudices, and the context of the study (Pathak, 2019). In this study concerning the inclusion of students with visual impairments in tertiary institutions, the researcher kept a detailed field note that was used to provide audit trail when necessary.

4.10.2 Participant Validation

The researcher engaged in participant validation to enhance credibility and trustworthy of the findings of the study (Lindheim, 2022). This is the process in which the researcher provides the people on whom he/she has conducted the research on with the account of his finding (Bryman, 2016; Lindheim, 2022). The goal was to seek confirmation that the research findings and impressions were congruent with the views of those whom research was conducted on (Pathak, 2019).

4.10.3 Triangulation

Triangulation research is a term used to describe bringing together of complementary methods of data collection to offset weaknesses in each (Mugenda & Mugenda, 2019). Korstjens and Moser (2018) observe that triangulation involves the use of variety of data

collection techniques and sources. Through triangulation, the researcher merges the strengths of different methods of collecting data and ultimately makes strong arguments in support of his/her findings and conclusions. The purpose of triangulation is to obtain data on the same topic or research questions to validate the results and understand research problems properly. When using triangulation, the researcher is looking for convergence of data collected through varied methods to enhance the credibility of findings (Creswell, 2014). Also, the convergences of the data allow generalization of the results (Pathak, 2019). As a result, triangulation enabled the researcher to analyze two sets of data and make interpretations and coherent conclusions.

Kyngas, Kaariaine and Elo (2020) noted that triangulation will enable the researcher to compare the findings and be sure they are authentic. In this study concerning inclusion of students with visual impairments in tertiary institutions, the researcher triangulated data derived from the questionnaire and semi structured interviews. Also, data obtained from infrastructural observation checklist was triangulated with data obtained from FGD. This enabled the researcher to have a detailed understanding of the phenomenon he was investigating.

4.10.4 Dependability

Dependability in qualitative research is similar to reliability in quantitative research (Mugenda & Mugenda, 2019). The concept of dependability assumes that a qualitative study can be repeated in another setting, under the same conditions and still yield the same results (Pathak, 2019). Therefore, dependability indicates the stability of data over time and over different environments.

The concept of dependability requires the researcher to account for the ever-changing context in which the research occurs (Korstjens & Moser, 2018). Thus, the researcher should be responsible in describing the changes that occurs in the setting, and how the changes affect the approaches adopted in the study. One way of achieving dependability of data in qualitative studies is to have two teams collect the same data and compare the similarities of the results (Mugenda & Mugenda, 2019). Another technique, Mamba emphasis, is to have inquiry audit in which the results and procedure followed during the

study are audited by a panel of experts. In addition, the researcher can keep a detailed journal of the field work on a regular basis.

In this study, the researcher kept a record of all the phases of the research process. For instance, the researcher kept a record concerning selection of research participants, field worker notes and interview transcripts. This would provide the peers with an opportunity to audit the process to ascertain if proper procedures were followed during the study.

4.10.5 Transferability

This is a term used in qualitative research to mean the ability to generalize results derived from qualitative through thick description of specific context (Pathak, 2019). The description of the context enables the reader to make the connection between the description in the study and their own situation (Mugenda & Mugenda, 2019). The same idea is echoed by Korstjens and Moser (2018) who observe that it is the responsibility of the researcher to provide a thick description of the participants and the research process to enable the reader assess whether the research findings are transferrable to their setting.

According to Mugenda and Mugenda, in quantitative studies, research findings are generalized to the larger population based on the control within the design, sample size and statistical testing of significance, yet in qualitative research data must be rich and trustworthy to be transferable to another context. The researcher enhanced the transferability of the research finding of this study by engaging in detailed description of the research context and assumption which were central to the study. The thick descriptions would provide other researchers with a database for making judgment about possible transferability of the finding in other situations.

4.10.6 Confirmability

Confirmability is the degree to which results in qualitative study can be verified or corroborated by others (Korstjens & Moser, 2018). Pathak (2019) posits that confirmability refers to the degree to which results of any inquiry can be confirmed or corroborated by other researchers. Accordingly, confirmability assumes that the findings are a reflection

of the participants' perspective as evidenced in the data rather than reflection of the researcher's own perception (Pathak, 2019). The investigator is the main data collection tool in qualitative studies, and therefore his or her viewpoint, opinion and interest must not necessarily impact on the research process itself and subsequent finding (Mugenda & Mugenda, 2019). Confirmability ensures that the research findings are devoid of biases, interest or perspective of the investigator or other persons. This calls for a measure of objectivity in evaluating results and describing how well the research findings are supported by the actual data collected as examined by other researchers (Korstjens & Moser, 2018).

Researchers must carefully document the procedure they have used in their studies to facilitate checking and rechecking of the data collection and processing throughout the study (Korstjens & Moser, 2018). They should provide a complete set of notes, decisions made, and team meetings held throughout the data collection and analysis processes (Pathak, 2019). This will facilitate the carrying out of data audit by other investigators that basically involve an examination of data collection, analysis and other procedures followed in the study; and making judgment about the potential bias and distortion of research findings (Pathak, 2019). The use of reflexives journals is one-way qualitative researchers use to uncover their underlying epistemological assumptions and reasons for conducting studies in a certain way (Mugenda & Mugenda, 2019). The journal should be updated regularly to capture field experiences and events as well as researcher's actions in overcoming the various challenges in the field. In this study, the researcher kept a journal of all the activities that were undertaken throughout data collection and data analysis. As a result, field experiences, events as well as the context of the study werel be well documented, allowing for audit trail by other researchers.

4.11 ETHICAL CONSIDERATIONS

Ethics is an integral part of research that extends throughout the entire research process – from selection of research topic to data collection and analysis, and finally the dissemination of study results (Pietila., Nurm, Halkoano, & Kyangas, 2020). According to Pietila, Nurm, Halkoano, and Kyangas, research ethics are of two distinct foundations.

One branch consists of ethical principles that aim to protect human participants from harm during the research while the other branch is focused on professional standards for ethical research and aims at good scientific practice and publicly accountable research.

The level of attention on ethical conduct has increased and broadened in response to society's expectations of greater accountability in research that deal particularly with human subjects (Fleming & Zegwaard, 2018). According to Arifin (2018), the protection of human subjects through the application of appropriate ethical principles is important in any research undertaking. Accordingly, it is mandatory in most educational institutions to get ethical approvals to carry out research involving human subjects (Fleming & Zegwaard, 2018). The idea has been confirmed by Pietila, Nurm, Halkoano, and Kyangas (2020) whose view is that any research involving human subject should be conducted in accordance with ethical codes, laws, and institutional policies. There are varied aspects of ethical consideration that deserve attention as explained below.

4.11.1 Voluntary and Informed Consent

This is the cornerstone of ethical research and is composed of two elements, namely, informed and consent (Fleming & Zegwaard, 2018). Orodho (2015) observe that educational or social research invades people's privacy. For instance, a researcher may want information of a private nature or to observe people in situations harmful or uncomfortable to the people. Such a researcher is duty bound to fully inform the participants what will be asked of them; how the data will be used and the consequences of being a participant in the study (Fleming & Zegwaard, 2018). The informed consent process respects people's right to decide whether participating in the study is compatible with their values, beliefs, and interests (Pietila., Nurm, Halkoano, & Kyangas, 2020). Thus, a valid informed consent can only be obtained if the potential study participants are well informed about the research (Lenton, Smith, Bacon, May & Charlesford, 2021). Also, participants should not be coerced to participate in a study, and they should be informed that they are free to withdraw their participation any moment they are uncomfortable (Arifin, 2018).

The informed consent becomes more significant if the researcher is involved in face-to-face interview with the vulnerable group of participants (Arifin, 2018). The vulnerable participants include the underage, persons with mental disability or illness or poverty, language barrier or other social and cultural or social factors that make it difficult for a person to make an informed consent (Pietila, Nurm, Halkoano, & Kyangas, 2020). The right to privacy demands that a legally authorized representative of the individuals who are vulnerable can provide informed consent on their behalf as long as the decision is in line with the participants' values and interests (Lenton et al., 2021). The informed consent process culminates in the signing of a document that attests that the participant voluntarily consented to participate in the study.

In the present study, the researcher applied to the College of Education (CEDU) Ethics Review Committee of the University of South Africa for clearance to conduct research by filling in the appropriate application form. Once the Ethics Review Committee was satisfied with the application and give its approval, the researcher applied for a letter of authority to conduct research from the National Commission for Science Technology and Innovation. This is the body set up by the government of Kenya to regulate research in the country. Researchers intending to carry out studies in the country must get a written permission from the body.

I also wrote a letter to the principal of the institution where the research was to be conducted to ask for permission to conduct the study. In my letter, I explained to the principal the benefits that would accrue from the study. Furthermore, I met and explained to each participant what the research was concerned with; and asked for their participation in the study. Once the participants had shown their willingness to participate in the study, then they signed a consent form to authenticate their willingness. The researcher assured the participants that high degree of confidentiality was be maintained during the study, and that they would remain anonymous throughout the study and thereafter.

4.11.2 Privacy and Confidentiality

The Privacy and confidentiality of personal data are a critical aspect of the current research practice that must be considered when planning and implementing research (Pietila, Nurm, Halkoano & Kyangas, 2020). Privacy is defined as participant's right to be free from intrusion or interference. Confidentiality means that what the investigator discussed with the participants will not be repeated or publicized in any way to associate the participants with the information (Lenton et al., 2021). On confidentiality Pietila, Nurm, Halkoano, and Kyangas (2020) observe that when participants share their personal information for research purposes, they trust that heir information will be kept confidential and that only predefined persons will have access to the data (Arifin, 2021). Consequently, the researcher is duty bound to protect the personal information that the participants have shared with them (Orodho, 2015). The protection of confidentiality is a continuous process, and various procedures must be specified by the researcher on how the participants will be kept confidential.

In this research, the researcher undertook different steps to ensure that the information given by the participants were kept confidential. Firstly, the researcher assured the participants that the information they would provide would be treated with a high degree of confidentiality; and that their participation was voluntary, and they were free to withdraw their participation at any stage of the study. Secondly, the researcher ensured that the participants did not write their names in the questionnaire and hence nobody would link them to the information provided. Thirdly, the collected data would be stored in a safe for future research for a period of five years. Collected electronic information was encrypted and stored on my laptop safeguarded by a password. The information will be discarded through shredding when it is no longer needed.

4.11.3 Anonymity

Anonymity refers to the identity of individuals being protected by using numbers, third party or pseudo names (Mugenda & Mugenda, 2019). This implies that the investigator could disclose information about a particular individual but protect their identity and privacy (Fleming & Zegwaard, 2018). Some studies may require the participant to provide

sensitive information to the investigator, and hence there is need to protect them from subsequent victimization (Peter, 2015). In this study, the identity of the participants was kept anonymous during the data collection and in the final research report. The researcher used numbers and pseudo names in the interview transcripts to keep identity of the participants anonymous.

4.11.4 Physical and Psychological Harm

Research that probes deeply into personal experience of the participants can be invasive particularly psychologically and socially (Peter, 2015). The same idea is echoed by Arifin who observes that qualitative studies are characterized by in-depth interviews of the individual participant, and so there is need to strictly observe ethical considerations. The participants may be traumatized when they re-experience a painful event or disclose highly private and shameful information (Peter, 2015).

Therefore, the research is duty-bound to consider the potential harm of the study to the researcher, wider community, and the institution before carrying out the study (Fleming & Zegwaard, 2018). The potential harm can be physical, psychological, social, and economic factors which may provide pain, cultural dissonance and exploitation, distress, fatigue, or stress (Pietila, Nurm, Halkoano, and Kyangas 2020). Vulnerable participants including students with disabilities who may have suffered psychological hurt in their social interactions should be treated with a lot of care during data collection (Arifin, 2015). According to Fleming and Zegwaard (2018), a researcher should strive to minimize risks to participants.

In this study, the researcher organized for a counseling session for the participants especially students with VI who were likely to have been provoked and psychological hurt by being reminded of nasty experiences they had encountered in the tertiary institution during the interview sessions. For instance, students with VI are likely face challenges such as inaccessible curriculum materials and negative attitudes from lecturers and other students. The counseling session was organized in liaison with the counseling department of the tertiary institution.

4.12. CONCLUSION

The chapter dealt mainly with the research paradigm, research methodology and research designed that was employed in the execution of the study. It begins with an introductory paragraph that links the chapter to the preceding chapters. Then, the chapter discussed the meaning of research paradigm, epistemological assumptions of the study as well as the ontological basis of the study. Also discussed is the interpretivist philosophical foundation on which the study is anchored. Additionally, the chapter discussed the qualitative research approach defined as a form of social action that put emphasis on the way people interpret and make sense of their experiences of social reality. In the context of this study, the best setting in which to study inclusion is the tertiary institution in which the students with visual impairments learn alongside their sighted peers. The qualitative research approach was suitable for this study since it uses multiple sources of data such as observation, open-ended questionnaire, and field notes.

The chapter discussed the various aspects of research methodology comprising of research approach, design, and methods to be employed in the data collection. Research design is considered as the blueprint for conducting a research project and the procedures necessary for obtaining information needed to solve a research problem. The research design adopted in this study is single case study. The chapter further examined the different aspects of methods used in the study that include, target population, sampling, sample size, tools and strategies used in data collection. The chapter also discussed the strategies employed by the researcher to analyze the data. The chapter mentions the use of the interpretive phenomenological data analysis approach to interpret the findings of the study. Finally, the chapter discussed the ethical issues to be taken into consideration during the study. The next chapter will deliberate on findings and results of the study.

CHAPTER FIVE

FINDINGS AND DISCUSSIONS

5.1 INTRODUCTION

This chapter deals with findings and discussion based on the results that emerged from the data obtained from the participants. The discussion of the findings of the study will be done in relationship to other studies that had been done about the inclusion of students with disabilities in regular schools. The chapter begins by revisiting the overarching research question to be addressed by the study and the subsequent research questions. Thereafter, the chapter discusses the emergent themes and sub-themes derived from data emanating from the participants. The themes discussed include: accessibility of curriculum materials by students with VI; the use of inappropriate methods of teaching students with VI; the recognition of technology in the education of students with VI; and limitation on the available resources used by students with VI. Then, the chapter will discuss the policies that support inclusion of students with VI as well as strategies that can be used to improve inclusion of students with students with VI. The chapter ends with a conclusion.

5.2 REVIEW OF THE RESEARCH QUESTIONS

The overarching question the study endeavored to answer was: What are the experiences of including students with VI in tertiary institutions?

And the secondary questions the study was attempting to address include:

1) What current strategies and resources were used by the tertiary institutions to make curriculum accessible to students with visual impairments?
2) What environmental modifications had been done in the tertiary institutions to accommodate students with visual impairments?
3) What policies existed in the tertiary institutions that guide the inclusion of students with visual impairments?
4) What strategies could be used to improve inclusion of students with visual impairments in the tertiary institutions?

5.3 EMERGING THEMES

The researcher analyzed qualitative data derived from open-ended questionnaire, semi structured interview, focused group discussion and infrastructural observation checklist and seven themes emerged. The emergent themes were: accessibility of curriculum materials by students with VI; the use of inappropriate methods of teaching students with VI as well as limitations of the resources available for students with VI. Other emergent themes included support by peers, lecturers and technical staff; policy on inclusion of students with VI in tertiary institutions and strategies of improving inclusion of students with VI. The emergent themes had sub-themes as has been summarized in table 5.3 below.

Table 5.3: Themes that Emerged from Open-Ended Questionnaires, Semi-Structure Interviews, Focus Group Discussions, and Infrastructural Observation

THEME	SUB-THEME	CODES
ACCESSABILITY OF CURRICULUM MATERIALS BY STUDENTS WITH VI	• Preparation of Handouts in Braille • Use of Large Print in Learning • Preparation of tactile diagrams and maps	• Braille plays a significant role in the education • Braille transcriber had a lot of work serving • Use of modern technology to produce Braille
THE USE OF INAPPROPRIATE METHODS OF	• Limited interaction between lecturers and students with VI	• Lecturers were not paying attention to students with VI

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TEACHING STUDENTS WITH VI	• Inability by lecturers to verbalize what is written on the board • Limited exposure of students with VI to concrete experiences	• Auditory output is important for students with VI • Students with VI require models, replica or real objects to understand concepts
RECOGNITION OF THE ROLE OF TECHNOLOGY IN EDUCATION OF STUDENTS WITH VI	• Use of ICT with assistive technology to educate students with VI • Utilization of assistive devices in learning • The usage of recorded audio materials in learning • Application of low vision devices in learning	• The important role ICT plays in the education of students with VI • Assistive devices are an integral part of students' learning • Recorded audio materials allow students with VI to revise the lessons • Low vision devices enlarge images to students with low vision
LIMITATION OF RESOURCES AVAILABLE FOR STUDENTS WITH VI	• Overstretched physical facilities for students with VI • Having few specialized human resource serving students with VI • Limited financial resources by students with VI	• Congested dormitories and classrooms • Deployment of one Braille transcriber, one ICT technician and few specialist lecturers • Struggle to pay fees and other levies
SUPPORT BY PEERS, LECTURERS AND TECHNICAL STAFF	• Support by students without VI • Support by lecturers and technical staff	• Acting as guides and readers to students with VI • Assisting the students with VI

POLICIES ON INCLUSION OF STUDENTS WITH VI IN TERTIARY INSTITUTIONS	• Institutional policies on training students with VI • Institutional policies on social relationships with students with VI	• Policies on admission and examinations • Policies on how students without VI relate with students with VI
STRATEGIES OF IMPROVING INCLUSION OF STUDENTS WITH VI	• Induction of Lecturers on the methods of teaching students with VI • Procurement of more assistive devices for students with VI • Expansion of the existing physical facilities in the tertiary institution • Employment of more specialized human resources personnel • Modification of the Physical Environment used by Students with VI	• Equip lecturers with appropriate knowledge and skills of teaching the blind • Buy modern devices like Orbit Readers Note Takers and Braille embossers • Build more dormitories, bathrooms, washrooms and classrooms • Need for more Braille transcribers, ICT technicians and specialist lecturers • Adapt the buildings to accommodate students with VI

5.4 ACCESSABILITY OF CURRICULUM MATERIALS BY STUDENTS WITH VI

The accessibility of the curriculum materials by the students with VI is one of the themes that emerged from the data collected. The theme generated several sub-themes such as preparation of handouts in Braille; use of large print; and use of tactile maps and diagrams for students with VI.

5.4.1 Preparation of Handouts in Braille

The analysis of the qualitative data indicated that the lecturers prepared handouts for students with VI in Braille. This is a dotted system of writing that enables the students

with VI to read and write. This version of writing enables the students with VI to learn and do their assignments like their sighted peers (Stone, Kay & Reynold, 2019). Thus, institutions including students with VI in their programs should prepare handouts in Braille for the students to allow them access to curriculum materials. A student participant had the following sentiments:

> *"The lecturers make notes in Braille for those learners with visual impairments. It appears that the lecturers give the Braille transcriber what the lecturer has prepared in print to put in Braille,"* (SSI Student 04).

Another participant student with VI had made similar sentiments when she confirmed that indeed they received handouts in Braille:

> *"We had handouts in Braille form and others would be sent to us in soft copy to either our Gmail accounts or WhatsApp,"* (Q-open Student 01).

The sentiments by the students were an acknowledgement that students with VI learn differently compared to their sighted peers. Braille plays a significant role in their education by enabling them access information.

Lecturers for students with VI confirmed that they prepare handouts in Braille for students with VI. For instance, a participating lecturer made the following sentiments:

> *"I give the printed notes to the Braille transcriber to change into Braille for VI students. I also dictate notes to visually impaired students to write themselves",* (SSI Lecturer 05). *"We are given handouts in Braille by our lecturers who liaise with the Braille transcriber to transcribe handouts from print to Braille. Occasionally, visually impaired students are given handouts in print when the Braille transcriber is not able to prepare them in Braille,"* (FGI Student 02).

Although the handouts were often prepared in Braille for the students with VI, there were occasions when lecturers could not prepare the handouts in Braille. Instead, they gave out handouts in print. A participant lecturer said:

> *"Lecturers prepare some handouts in Braille while others are prepared in print. One may not prepare handouts in Braille all the time for students with visual impairment because the Braille transcriber has lots of work,"* (Q-open Lecturer 01).

The lecturer seemed to have recognized the need to provide students with VI with Braille version of the handouts, but the transcription could not be done since the transcriber had other duties. It is apparent that the Braille transcriber had a lot of work serving 21 students with VI. She was, therefore, not in a position to cope with all the transcription work in the institution. Probably the institution should consider employing another Braille transcriber to make it possible to serve the students with VI more effectively and efficiently.

The participant lecturer was also advocating for the procurement of modern technologies used in the production of Braille. The modern technology would increase Braille production and bring more efficiency.

He stressed:

> *"The institution should invest in low-vision based technologies; more refreshable Braille notetaker displays, to enhance easy access and storage of books and notes, considering how bulky braille paper is,"* (Q-open Lecturer 02).

The lecturer was not only acknowledging the essential role played by Braille in the education of students with VI but also recognizing the inability of the institution to prepare enough Braille materials for students with VI. Hence, the lecturer was convicted that the use of modern technology to produce Braille would help meet the deficit in Braille production. Also, the participant lecturers stressed the need for adopting the use of refreshable Braille to ease the need for storage as well as enhance access to reading materials.

The lecturer remarked:

> *"The institution should procure digital devices for the blind: ore refreshable Braille notetaker displays like; reading applications like Seeing-Artificial Intelligence; Library subscriptions like the ookshare, RNIB, etc. for more access of reading materials,"* (SSI Lecturer 02).

In some instances, the lecturers provided the students with VI with soft copies of the handouts which they accessed using the computers with assistive technology such as screen readers.

This was evident in the remarks by a participant student who said:

"It is sent in print and most times I would have a screen reader on my phone, so opening the document is quite easy because it converts the written document into speech," (SSI Student 06).

The use of assistive technology made it possible for students with VI to access curriculum materials. However, some students were unable to use such technologies to access information and hence they were not benefitting from the use of assistive technologies as was illustrated by the following sentiments:

"Sadly no. Because most of the students in school were not conversant with technology and handouts are not always in Braille, it is advantageous to some students and to others who did not know how to use their phones to access information it was a bit off," (SSI Student 01).

Thus, the presentation of the handouts in soft version was one of the ways of assisting the students access the curriculum.

5.4.2 Use of Large Print in Learning

The students with VI were also presented with curriculum materials in large print. The use of large print has enabled students with VI to access curriculum. Large prints were used during the assessment and normal learning sessions by students with VI. Thus, the use of large print not only enabled the students with VI to access the curriculum but also enabled them to learn like their sighted peers as was alluded to by the sentiments of the following participants:

"The institution is able to enlarge print used by students with low vision, while they prepare Braille for those who are blind," (Q-open Student 18).

"Students with low vision are also catered for. They are always provided with handouts in large print to use," (FGI student 03).

"We have a photocopier machine that can easily prepare large print for students with low vision. It is not difficult to prepare large print materials," (SSI Adm 01).

The preparation of examination in large print made it possible for students with low vision to access both examinations and other handouts in large print format. The use of large print to prepare curriculum materials is not as laborious and tedious as preparing written text in Braille format. It is much easier for the tertiary institution to avail curriculum

materials in large print than Braille. Moreover, preparation of text in large print does require skill and expertise required by a Braille transcriber.

A participant lecturer said:

> *"We have a photocopier that can enlarge handouts for students with VI. You know print is easy to mark as compared to Braille,"* (SSI Lecturer 07).

The view of the participant reflected a person who has had experience of teaching students with VI in an inclusive institution. According to the participant, dealing with a student with low vision was far much easier compared to dealing with the blind student. In addition, the use of large print allowed lecturers who could read Braille to mark the students' assignment without the script being converted into print by the Braille transcriber. The significance of large print in the education of students with VI has been highlighted in the literature review of this study. Scholars have emphasized the use of large prints to educate student with substantial visual loss (Klingenberg, Holkesvik & Augestad, 2019) in a regular school setting.

5.4.3 Preparation of Tactile Diagrams and Maps

Students with VI were presented with adapted diagrams and maps. This made it possible for them to access curriculum materials during learning sessions. The adaptation of assessment methods and learning materials is a serious consideration in the education of students with VI. According to McCarthy and McGuckin (2018), the standard examination procedures and formats are likely to pose a challenge to students with VI. Hence, there is need for adaptation of the curriculum materials. According to a participant student, maps and diagrams used by the students with VI had been adapted to make it possible for them to engage in map reading. The participants said:

> *"Yes, the diagrams that we used during map reading and other subjects were tactile. Some were very good, but others were not. It all depends on the person that has made it,"* (SSI Student 04).

> *"The Braille transcriber always make tactile maps and diagrams for students with VI that they use during science and social studies lessons* (FGI Student 03).

> *"We often prepare tactile maps and diagrams for students who are blind. So, most of the students are able to study social studies. The tactile maps and diagrams are*

always prepared by the Braille transcriber, but the lecturer must tell the transcriber exactly how he/she wants to use the aids," (SSI Adm 02).

The use of tactile maps and diagrams made it possible for the students with VI to access the same curriculum as their sighted peers. The sentiments by the students were recognition that students with VI have a different modality of learning. Hence, the use of tactile maps and diagrams is an adaptation to accommodate them.

There are, however, other modalities of modification of the learning materials. The adaptation of the assessment modalities is one such form of adaptation. A participant student had observed that adapting the mode of assessment was one of the ways to accommodate students with VI. Her observations were:

> *"Students with visual impairment are able to read diagrams during science lessons. So, instead of giving you a map to read in print they prepare something different, usual in tactile,"* (SSI Student 01).

A participant lecturer had the same opinion when he said:

> *"We always prepare tactile maps and diagrams for students with visual impairments. They are able to use their hands to tactually read them,"* (Q-open Lecturer 06).

Although the use of tactile maps and diagrams could be used with students with VI, other forms of adaptations used by the lectures included asking oral questions as was alluded to by a participant student who said:

> *"Yes, we are able to tackle some questions involving maps and diagrams. But in other subjects they are modified. They give us in form of questions,"* (SSI Student 03).

The use of tactile maps and diagrams and other forms of adaptation allowed the students with VI to interact with the curriculum during learning.

5.5 THE USE OF INAPPROPRIATE METHODS OF TEACHING STUDENTS WITH VI

The use of appropriate methods of teaching is one way of making curriculum accessible to students with VI in tertiary institutions. The researcher interviewed participants concerning their experiences with methods of teaching used by lecturers in their institution. The participants of the study gave varied views.

For instance, participants said:

> *"Now to a great extent because this is an inclusive setting, lecturers are using all the methods of teaching for the regular learner. Sometimes we employ individualized instruction if a student requires that. We employ a lot of group work,"* (SSI Lecturer 04).

> *"I always use a variety of methods of teaching to teach all students such as lecture, demonstration, discussions, field trips and inquire learning,"* (Q-open lecturer 06).

These sentiments indicated that the lecturers were aware that they were in an inclusive environment where they were bound to use all the conventional methods of teaching. Although the conventional methods of teaching students are appropriate in a regular institutional setting, they are not appropriate for students with diverse needs including those with VI.

A student with VI in the institution felt that the methods embraced by some of the lecturers were not appropriate and observed:

> *"I wouldn't say they were appropriate because most lecturers were not trained on special needs education. So sometimes they would ask us how we wanted to be taught instead of them knowing how they should teach,"* (SSI Student 01).

> *"Our lecturers have a lot of content to cover within a short time, so they sometimes teach in a hurry and a student end up not understanding what is being taught,"* (Q-open Student 05)

> *"The lecture method of teaching used by most of our lecturers is not very appropriate for visually impaired students. In many cases, the lecturer is in hurry to cover the content and does not care whether you have understood or not. It up to you,"* (FGI Student 07).

The remarks by the students were indications that the methods used by their lecturers were inappropriate for students with VI. The probable reason the lecturers were not using the appropriate methods and strategies to teach student with VI, was most likely lack of skills and knowledge in teaching students with VI. The methods used by the lecturers to teach students with VI are quite crucial for the success of the students. Studies have shown that quite often lecturers use inappropriate methods to teach students with VI in tertiary institutions (Sikanku, 2018; Penda, Ndhiovu & Kasonde-Ngandu, 2015). The

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inappropriate methods of teaching used by lecturers result into poor performance by the students (Penda, Ndhiovu & Kasonde-Ngandu, 2015).

5.5.1 Limited Interaction between Lecturers and Individual Students with VI

The researcher interviewed participants regarding the way the lecturers engage with individual students with VI during learning sessions. The participants provided various views concerning individualized instructions provided to students with VI undertaking training in the institution.

The students with VI said their lecturers did not involve them in the lesson. They observed:

> *"They should really involve students with visual impairments because you find in a class, a visually impaired person is seated at the back, and they do not care. They do not even bother to ask if the student has tried to grasp what is being taught,"* (SSI Student 03).

> *"Lecturers should really try to involve the students with visual impairments in their lessons by asking them questions. I think they have a lot of content to cover within a short period of time,"* (FGI Student 08).

The sentiment by the student indicated that the lecturer was not paying attention to individual students with VI and so, the student felt isolated in the learning process and that they were being left behind. It is important for the lecturer to involve the students with VI by asking them questions to ensure that they are not left behind. Also, the lecturer should ensure that the students with VI are actively engaged in the lesson.

A student with VI was of the opinion that their lecturers were using lecture methods of teaching which tended to isolate them. Lecture as a method of teaching does not actively involve engaging the students in the lesson either by asking questions or allowing the students to ask questions. Therefore, the use of lecture method would leave the lecturer with less opportunity to engage with the students especially those with VI. Another student said:

"The method used to teach the students is not bad. The students with visual impairments are actively involved. They take part in the lecture. I think they were particularly using the lecture method to teach most students. There are varieties of methods of teaching that lecturers use in their classes," (SSI Student 04).

Another participant student had the same opinion:

"They use the lecturing method to teach students most of the time. In PE sometimes they use demonstrations," (Q-open Student 03).

The views by the students that most of the lecturers were using lecture method to teach students including those with VI tend to reaffirm that lecturers had not embraced one-on-one instruction to teach students most of the time.

The assertion that the lecturers were not using individualized methods to teach students including those with VI was alluded to by the participants:

"We have many students in our classrooms, so it is difficult to use individualized methods of teaching with our students. We mainly use the lecture method and where applicable we may use demonstration like in PE," (SSI Lecturer 04).

"Our institution is an inclusive setting where we use all conventional methods of teaching. Moreover, most of us were not trained in unique methods of teaching students with VI. We need to be inducted into the appropriate methods of teaching visually impaired students," (SSI Lecturer 07).

"Our lecturers use varied methods of teaching. They may occasionally fail to pay attention to individual students with visual impairments because of limited time available to cover the course contents. Quite often they use lecture methods to teach in classes," (SSI Adm 03).

The statement by the lecturer depicted lack of knowledge and skills of teaching students with VI. The lecturer argued that large classes make it impracticable for them to individualize their teaching. Thus, when lecturers have knowledge and skills of teaching students with VI, it will enhance the delivery of curriculum to the students.

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One-on-one instruction is a strategy in which a lecturer engages with individual student during the lesson by asking him/her questions on what is being learnt. The purpose is to find out whether the student has understood what is being learnt and areas where he/she experiences difficulties (Habulezi et al. 2016). The study found that majority of the lecturers was not applying individualized instruction on students with VI. There was a possibility that the lecturers in the institution had a short time to cover the subject content hence, they were rushing to complete the syllabi. Also, there was a possibility that the lecturers were not conversant with appropriate knowledge and skills of teaching students with VI. Therefore, there is need to continuously induct lecturers into various strategies and methods of teaching students with VI.

The literature review in Chapter Two of this study provided detailed accounts concerning the avenues through which students with VI learn in the absence of sight to acquire knowledge from their immediate environments. These include the use of the sense of touch and audition which unfortunately do not provide detailed information as comparable to use of sight (Agesa, 2014). Consequently, students with VI experience a lot of challenges in acquiring and developing many concepts. Thus, there is need to provide them with individualized instruction to enable them acquire concepts at par with their sighted peers.

5.5.2 Inability by Lecturers to Verbalize what is Written on the Board

One of the strategies used to effectively teach students with VI is to provide auditory feedback on what the lecturer has written on the boards. This enables the students to know what the lecturer has written and to keep abreast with the lecture. The students with VI felt that most lecturers were not providing them with the verbal feedback. Hence, they did not know what the lecturer had written on the board. Participant students made the following remarks:

> "Yes, they should still verbalize what they are writing. But that is still a challenge because they do not come to clarify to an individual student or pay attention to an individual student. I would say is a weakness on their side because in the first place, they are fighting against time, so if they see that

they are only having two hours to cover the content, they should cover it in one hour and that would mean that the lecturer would handle a lot of content within a short time," (SSI Student 07).

"One of the mistakes the lecturers do when teaching students with VI is fail to verbalize what they are writing on the board. It becomes difficult for visually impaired students to follow," (Q-open Student 14).

The sentiments by the student with VI indicated that lecturers were not paying attention to the individual student. Also, lecturers were not verbalizing what they were writing on the board.

Students with VI made the same observation regarding lecturers' failure to individualize their lessons on students with VI and also to verbalize what they are writing or being projected on the board.

One participant said:

"While they are teaching, I wish they could verbalize what they are writing on the board. Yes, even if they are using a projector though not many lecturers are using the projectors, verbalize what is on the screen. Secondly, as the lecturers verbalize what is on the screen, they should move, because we are not many, move close to an individual learner with visual impairment and clarify the concept," (SSI Student 05).

Thus, the lecturer would be in a position to teach the students with VI more effectively if they verbalize what they are projecting on the screen. Also, they should spell out any vocabularies that the students with VI are encountering for the first time. When a person loses the sense of sight, he will mainly rely on the sense of auditory to receive information from the environment (Agesa, 2014).

5.5.3 Limited Exposure of Students with VI to Concrete Experiences

The best methods of teaching students with VI are those that will result into the students having concrete experiences of what is being learnt, and hence making learning meaningful. A student with VI complained that their Physical Education lecturer would demonstrate to other students how to execute a style of swimming without showing him the same style.

He explained:

> *"So, I used to ask, excuse me sir: what do you mean by this? So, it forced him to come to me and tell me, 'This is what I mean. I am trying to explain using the gestures." So that was one of the challenges,"* (SSI Student 06).

The same sentiments were made by a student with VI who felt that there were a lot of concepts that the lecturers discussed in class which they had limited understanding of. *"They talk about many things like in PE that we don't know. Like, they talk of a ring in netball,"* (Q-open Student 15). The use of methods of teaching such as demonstrations, field excursions, and learning by doing are known to provide the students with VI with concrete experiences that make learning real and meaningful (Fast, 2018). It is possible for students with VI to talk about many things in the environment of which they have limited understanding. The use of concrete experiences allows the students with VI to compensate for what their sighted peers can learn using sight. This concept has been extensively discussed in the chapter on the literature review.

5.6 RECOGNITION OF THE ROLE OF TECHNOLOGY IN EDUCATION OF STUDENTS WITH VI

The analyzed data in the study indicated that the participants have recognized the role of technology in the education of students with VI in the tertiary institutions. The theme technology embraced several sub-themes such as application of ICT in education, utilization of assistive devices, use of recorded audio materials and application of low vision devices. The sub-themes have been discussed in the subsequent paragraphs below.

5.6.1 Use of ICT with Assistive Technology to Educate Students with VI

The use of information communication technology has revolutionized the education of students with VI in recent years in a way that has not been witnessed in previous years. The researcher interviewed participants on their experiences with ICT resources and students with VI in their learning institution. The participants expressed different views on the use of ICT with assistive technology. For instance, students with VI recognized the

role of ICT in advancing their education. They said the use of ICT with assistive technologies has enabled them access information easily.

The students observed:

> *"Lecturers would send materials in print to individual student's cellphone and the student would be able to access it if the phone has a screen reader. The phone can open the document and convert the written document into speech for the student to grasp,"* (SSI Student 01).

> *"I am able to get a lot of information from computers with screen readers to write my assignments,"* (FGI Student 06).

The sentiments by the students implied that they could use their phones and laptops fitted with screen readers to access notes written in print. Thus, the students with VI could immediately access the same information without having to depend on the Braille transcriber to translate print into Braille. Also, it meant the student with VI would read their own notes without the assistance of a reader.

Another student making observation regarding the use of ICT said:

> *"I use Google to get information that I use to write my assignments and term papers,"* (Q-open Student 10).

The above sentiment by the student was a clear indication that the use of ICT resources had boosted the students' access to information. One of the limitations brought on a person by VI is the ability to manipulate and access the environment. Therefore, the use of ICT devices fitted with screen readers such as Job Access with Windows (JAWS) and Non-Visual Desktop Speech Access (NVDA) will assist the students with VI to access printed materials allowing them do their assignments like their sighted peers.

A student with VI had however expressed concern that ICT devices could only benefit students with skills and knowledge of using the ICT resources. Students who did not have the knowledge and skills to use ICT could not benefit from their use.

The student observed:

> *"Sadly, many students with visual impairments are not able to benefit from ICT because most of the students in the school are not conversant with technology. It is advantageous to some students and to others it was a bit off," (SSI Student 06).*

The statement by the students with VI indicated that having knowledge and skills to use ICT resources is important for students with VI to benefit from the application of technology in the tertiary institutions.

Another student with VI had made similar remarks*:*

> *"Some of the visually impaired students have inadequate knowledge and skills to manipulate the ICT devices effectively,"* (Q-open Student 08).

The sentiment by the student with VI emphasized the central role played by ICT in the education of students with VI. Tertiary institutions, therefore, should teach ICT to all the students including those with VI for them to benefit from the use of technology in their education.

A student with VI had emphasized the urgency to adopt the use of ICT in teaching students with VI. According to the student, the use of ICT in education is being embraced by many societies in the world and Kenya cannot afford to be left behind in the synergy. The students said:

> *"I was forgetting that in Kenya we are moving towards the use of technology and ICT. I think ICT should be made a compulsory subject in the first year of study,"* (SSI Student 02).

Another participant student had the same observations:

> *"The institution should put a lot of emphasis in teaching students with VI using ICT,"* (Q-open Student 19).

The students advocated for the inclusion of the ICT component in the teachers' training programs. The training in ICT will place the teachers in a better position to use such technology to effectively learn new skills and knowledge. Similarly, lecturers observed that students with VI were using ICT especially their smart cellphones to access information for learning purposes.

A participant lecturer stated:

> *"I think many visually impaired students use smart phones to access information. For example, I teach curriculum studies in the class of DECTE. I have three*

learners who are visually impaired. I noted that they have installed apps that are able to read for them the documents," (SSI Lecturer 05).

According to the lecturer, the use of ICT resources had enhanced the ability of the students with VI to learn by allowing them access the learning materials. Despite the role of ICT in assisting the students with VI access information, lecturers were concerned that inadequate knowledge and skills on ICT by the students would prohibit them from using ICT resources effectively in a learning context.

A lecturer observed:

"Some students lack skills to handle the assistive technology," (Q-open Lecturer 01).

Accordingly, the lecturers suggested that the students with VI be trained to use ICT resources:

"The in-coming students need to be taken through a training on assistive technologies, especially operating refreshable Braille note taker displays, so as to have them use the devices in the learning process," (SSI Lecturer 02).

Also, lecturers had suggested that there was need to acquire modern ICT resources to enhance the production of Braille.

A lecturer had made the following observation:

"They should acquire refreshable Braille devices, more magnifiers for the low vision, scanners and embossers for production of educational materials," (Q-open Lecturer 01).

The use of ICT resources to produce refreshable Braille was supported by lecturers in the institution. According to the lecturers, refreshable Braille would do away with the employment of Braille transcribers whose role is to translate print into Braille and vice versa. Also, students with VI would no longer require Braille papers on which to transcribe their work. As a result, the cost of including students with VI in the tertiary institutions would be reduced.

The use of ICT to educate students with disabilities is an area that has attracted several scholars in recent years (Klingenberg, Holkesvik & Augestad, 2019). The use of laptops, tablets, desktops and smart phones to access information is currently being stressed in

the education sector. This study has had an elaborate discussion on the use of ICT in education in Chapter Two on literature review.

5.6.2 Utilization of Assistive Devices in Learning

There are different equipment currently used in the tertiary institutions. These range from the simple gadgets to the complicated and sophisticated electronic equipment. However, the most widely used assistive device is the Braille machine to write Braille. The researcher interviewed the participants of the study on the types and availability of assistive devices used in their institution. The varied perspectives of the students, lecturers and other support staff have been discussed in the subsequent paragraphs.

The students with VI confirmed that they had different assistive devices in their institution for learning. They included the Braille machine, slate and stylus, thermoforming machines, scanners and photocopiers.

> *"Our institution has Braille Machines, thermoforming machines and stylus and slates,"* (Q-open Student 19).

A support staff added*:*

> *"There are Braille machines, slate and stylus, and Thermoforming machines though the Braille Machines are not adequate,"* (Q-open Support 01).

The main concern of the support staff was that Braille machines which were the most commonly used devices to write Braille were not adequate. The students were of the view that the institution should buy more machines to avoid interruptions of learning should some machines break down.

> *"The institution needs to buy more Braille machines in case one breaks down during examination,"* (Q-open Student 16).

The student was appealing to the institution to buy more Braille machines to avoid possible interruption of learning occasioned by the breakage of the devices.

The existence of various assistive devices in the institution was also confirmed by a lecturer.

> *"In my institution, we have Braille machines. We have a computer lab that supports the students. It has machines, a scanner and a thermoform machine,"* (SSI Lecturer 06).

Another lecturer made similar remarks:

> *"The specialist equipment available for use by the students with visual impairments are Braille machines, embossers, abacus and slate and stylus,"* (SSI Lecturer 01).

However, the lecturers were concerned that the institution did not have enough assistive devices to support the existing number of students with VI. They also noted that the available assistive devices were old fashioned and urged the institution to acquire modern version of the devices.

> *"There is need for modern equipment for our visually impaired students to operate efficiently during learning,"* (Q-open Lecturer 04).

The lecturers were also concerned with the noise made by Braille machines while in operation. It implied that if there were several students with VI operating Braille machines in one room, the level of noise would be too high to be tolerated by students without VI. They would therefore have to distribute students using Braille machines in different classes.

> *"Once in a while I have the other students who are sighted complaining. For example, if you place up to four students who are visually impaired, when they are writing notes, normally they become noisy for the rest. So, the institution has managed that by distributing the students with visual impairments at the time of admission, like two or three per class, whereby when they are writing notes, it does not become a challenge for the rest. So, getting solutions through experience,"* (SSI Lecturer 05).

> *"When I joined the institution for the first time, many students in my class complained a lot about the noise my Braille machine was making,"* (FGI Student 01).

Assistive devices were widely covered in Chapter Two on literature review. The discussion centered on Braille writing equipment such as Braille machines and stylus and slate. Slate and stylus are manual equipment used to write Braille. They are laborious, time consuming and tedious to use. On the other hand, Braille machines are faster and efficient mechanical machines used to write Braille (Sight savers, 2018). Although they are faster and efficient in Braille production, they have the disadvantage of being expensive and difficult to maintain. Also, the machines make a lot of noise when in

operation. The noise made by the machines causes a lot of discomfort for many students without VI in the classrooms/lecture halls. Consequently, students with VI using Braille machines are placed in a separate room during examinations to minimize the levels of noise; and to allow students without VI to concentrate in their examination. Although placing students with VI in a separate room could be considered discriminative, it has the advantage of sheltering the students without VI from excessive noise made by Braille machines.

5.6.3 The Usage of Recorded Audio Materials in Learning

The use of recorded audio materials is a strategy used by institutions to accommodate students with VI. The strategy allows the students to listen to recorded lectures during their free time. The researcher interviewed the participants of the study about their experiences of using recorded audio materials by students with VI. The participants gave their different experiences.

Students with VI said that they had recorded audio materials that a student could borrow and listen to at their free time*.*

"The tape recorders have already recorded curriculum materials that students with visual impairments can listen to. We would go there and listen to the recorders," (Q-open Student 04).

The sentiment by the student indicated the presence of a structure in place to assist the students with VI access the curriculum. Another student confirmed the presence of a structure in place in the institution of assisting students with VI access curriculum content.

> *"The tape recorders were not given to individual students. They are put by the staff in the resource room and if a student needs them, they go to the staffroom, or the resource room and get one,"* (SSI Student 04).

Another student with VI showed appreciation of using recorded audio materials.

> *"I did not have notes on content of Christian Religious Education (CRE), but I was able to pass my mid-term examination by borrowing and listening to the recorded cassettes,"* (SSI Student 03).

The use of recorded audio materials in aiding students with VI to access curriculum materials was noted by another student.

> *"The recorded audio materials will always assist you to get a better understanding of the subject. The lecturer recorded in the audio materials had a good understanding of the subject,"* (Q-open Student 02).

However, there were challenges in using recorded audio materials to access curriculum materials. One student noted.

> *"We have a recorded cassette that you can borrow from the lecturer and listen to at your free time in the dormitory. There is always interference from other students in the dormitories who would talk and disrupt you,"* (SSI Student 05).

The student said that the recorded materials were useful, but she did not have a quiet place in which to listen. Another student had a challenge of relying on the recorded audio materials to revise for her examination, she noted:

> *"I had my English examination the following day and I was prepared to revise by listening to the recorded cassettes, but lights went off and I poorly prepared for the examination,"* (FGI Student 07).

The statement by the student denoted a challenge in the use of recorded audio materials since she could not revise for her examination and therefore was ill prepared to do the exam.

Lecturers too had their own experiences in using recorded audio materials.

A lecturer noted:

> *"I encourage my students to record my lectures using their phones so that they can replay later,"* (Q-open Lecturer 02).

This was an appreciation by the lecturer on the use of technology to facilitate learning. Also, the lecturer seemed to be aware of the laborious and tasking notes writing by the students with VI hence he encouraged them to record the lectures using their cellphones. Recorded audio materials play a significant role in the learning of students with VI. Also, studies have shown that in the absence of sight, a person would mainly rely on the use of auditory sense to receive information from the environment (Agesa, 2014). Thus, the use of recorded audio materials can assist students with VI gain much information from the environment. However, the use of auditory channel of learning has limitations. For

instance, what students hear in a lecture cannot be revised later unlike what has been written down in form of notes. Recording the lecture using diskettes and cassettes can allow the students with VI revise the subject later at their free time without having to strain to read by touch.

5.6.4 Application of Low Vision Devices in Learning

There are varieties of low vision devices that can be used by students with low vision. The devices have the capacity to magnify images of objects being viewed. As a result, students with low vision can use them to read print, view board as well as look at distant objects. The researcher interviewed participants concerning their experiences with low vision devices in their institution. The participants had varied experiences which were discussed in the subsequent paragraphs.

The students with VI noted:

> *"The institution has CCTV, magnifying lenses and telescope for use by students with low vision,"* (FGI Student 02).

The statement indicated the presence of low vision devices in the institution. It implied there was a structure put in place to assist students with VI access curriculum materials. The existence of low vision devices in the institution was reiterated by another student who explained:

> *"The institution has some handheld lenses, stand magnifiers, binoculars, and a few telescopes in the resource room,"* (SSI Student 07).

There is need to buy more of the low vision devices, (Researcher's infrastructural observation).

A student with low vision narrated how the low vision devices had assisted her to read and write during her studies. She made the following remarks*:*

> *"I could not read or write in print until they brought me a handheld lens. I am now able to use my lens to read and write, but I am generally slow in writing my assignments,"* (FGI student 08).

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The student was expressing appreciation for the availability of the low vision devices in the institution that had assisted her to read and write print and hence continue with her studies.

> *"The institution should buy more low vision devices so that when one is lost, a student can be given another one. I had to stay for more than a month without a lens until they brought me one. I was not able to do my assignments; it was a difficult period for me,"* (SSI Student 06).

A lecturer observed that the institution had few low vision devices and appealed to the management to buy more devices.
He noted:

> *"The institution should acquire refreshable Braille devices, more magnifiers for the low vision, scanners and embossers for production of educational materials,"* (SSI Lecturer 01).

The lecturer was emphasizing on the essential role played by low vision devices in aiding students with low vision to read and write. Low vision devices have played a significant role in the education of students with low vision that has been given recognition by scholars (Maindi, 2018).

5.7 LIMITATION OF RESOURCES AVAILABLE FOR STUDENTS WITH VI

The presence of students with VI in the tertiary institutions necessitates for some physical resources and facilities to meet the needs of the students; and to take care of their welfare. The researcher interviewed the participants of the study to find out their experiences concerning physical resources available for the students with VI in the institution. The analyzed data generated theme depicting scarcity in resources used to teach students with VI. The researcher generated sub-themes based on the main theme such as overstretched physical facilities, inadequate skilled personnel serving students with VI and limited resources for funding of education of students with VI.

5.7.1 Overstretched physical facilities for students with VI

Students with VI said their rooms were congested and there was possibility of losing one's property. This must have frustrated some of the students who mentioned:

"Our hostels are really congested. A cubicle can be used by five or six people and that makes it very possible to lose some of your personal items. I was a bit lucky I did not lose my items, but several people lost their personal items like phones and bags," (SSI Student 05).

"There is need to expand the dormitories for all students. There is high level of congestion in the dormitories," (Q-open Student 16).

The above statements by the students depict persons who are frustrated by the congestions in their dormitories that typically characterized the living conditions of the students. Another student who stated:

"There is need to reduce congestions in the cubicles used by students with VI," (Q-open Student 04).

A student with VI thought that congestion in the dormitories could lead to insecurity whereby students lose their personal properties. The student stated:

"The rooms are congested. And maybe that can be a threat to security as far as the property is concerned," (FGI Student 04).

"The institution should urgently expand all the facilities used by the students such as dormitories, classrooms, toilets and bathrooms. The ones in use now cannot cater for the students' population and have overstretched," (SSI Student 07).

The students felt that in congested rooms, one could easily lose their items. The congestion in the dormitories could pose a threat to all students but more so the students with VI who cannot see around. Another student with VI had intimated that she had experienced theft in the institution.

"I had lost my phone in the dormitories. I reported the matter to the other students and administration, but nobody had seen it," (SSI Student 06).

Although theft could take place even if there was no congestion in the dormitories, congestion could have precipitated it.

Another student with VI complained that the dormitories were congested and she was left with no room to keep her items.

> *"I feel like we were really congested and losing your items was quite easy. If they have a room with many people like five, they will not give you enough space to store your stuff. So, if your items get lost, they still say they are not responsible,"* (SSI Student 01).

The comment by the student with VI demonstrated a boarding facility that was congested and overstretched. The student was worried about her items getting lost and the blame for not taking care of her items. The challenge of not being able to see meant that her items could easily be taken by other students.

The students with VI were also not happy with the state of the washrooms and the bathrooms in the institution. They made several remarks that depicted their disgust with the conditions of the facilities. One of them said:

"The toilets are not very comfortable. I think the toilet seats are more comfortable than the squat ones available now," (SSI Student 04).

Clearly, the student was not comfortable with the squat toilets which are prone to misuse. The toilet facility was likely to inconvenience the students with VI. Another student with VI also talked about the poor state of the washrooms and toilets. She had observed:

> *"The Institution should build more toilets and bathrooms for the visual impairments students to help them in their hygiene. You know, they should have their own rooms for their own security,"* (Q-open Student 09).

The sentiments by the student depicted a person experiencing frustrations and inconveniences occasioned by the congestion in the dormitories and the poor state of the washrooms and the toilets.

Lecturers and administrators made proposals concerning the physical facilities in the institution. An administrator of the institution had advocated for the improvements of the physical facilities. His remarks were:

"Improve physical facilities in the college such as dorms, classrooms, build better pavements," (Q-open Adm 02).

From his point of view, the physical facilities were overstretched and required revamping. The same observation was made by another lecturer:

> *"We have a very supportive social environment for students with VI. It is due to the awareness that we have created amongst our members. But the physical environment requires improvement. Of course, we have wide paths that are friendly for the blind... specifically for the learners. There is a specific hostel that has adaptations to take care of the learners with visual impairments. But hostels with adaptations are very few,"* (SSI Lecturer 04).

> *"The institution has wide pavements made of Cabros blocks with a good kerb to facilitate the movements of students with Visual impairments. The pavements absorb rainwater and hence do not hold pools of water. The pavement is hard and provides good tactile clue to visually impaired students,"* (Researcher's infrastructural observation).

The statement by this lecturer and the observation by the researcher acknowledge that the social environment of the institution is conducive for students with VI but the physical environment – bathrooms, washrooms and classrooms as well as the lecture halls – requires improvement.

5.7.2 Having few Specialized Human Resources Serving Students with VI

Tertiary institutions including the students with VI require skilled and professionally qualified staff to serve the students with VI in their programs. This study tried to find out the experiences of the participants concerning human resource serving the students with VI by interviewing the participants. The participants had different experiences regarding the issue of concern.

The students with VI were able to identify the specialized human resource serving them in the institution. A student made the following remarks: *"Our institution has a few specialist teachers who can communicate in Kenyan Sign Language while others can read Braille and Braille transcribers,"* (Q-open Student 11). The student could correctly identify the roles of the specialist teachers, that of being able to communicate in both Braille and sign language with students with diverse needs. The roles of specialized human resources were identified by another student who stated:

> *"The Braille transcriber prepares Braille reading materials and diagrams and maps for students who are visually impaired,"* (FGI Student 05).

The student's comment demonstrated the unique roles of the Braille transcriber in the preparation of Braille reading materials and tactile diagrams in learning of students with VI in the institution.

Students with VI had different experiences interacting with human resource serving them. For instance, a student with VI had stated:

> *"I could not do map reading as part of my examination because it had not been adapted by the Braille transcriber. She was sick, so somebody else was assigned to describe for me. I simply found it very difficult,"* (SSI Student 01).

The student expressed frustration for not able to access the exam in a format favourable to her. She was also frustrated for not being able to complete her examination. Braille transcribers play a vital role in the education of students with VI. They transcribe print into

Braille and vice versa. The discussions on the roles of Braille transcribers were extensively covered in the literature review section of the study.

On the experiences with specialist human resource, one student with VI observed:

"For a whole term, we did not study Braille music notation because the lecturer who was teaching it had retired, they were still looking for one from the Teachers Service Commission," (SSI Student 08).

The specialist lecturers teach specialized curriculum courses such as Braille music notation and orientation and mobility skills. Accordingly, they assist the students with VI access curriculum materials in a manner that cannot be accorded by regular lecturers who are not trained in the unique pedagogical skills. The statement by the student alluded to having few specialist lecturers in the institution.

On the role of the ICT technician, a student with VI made the following observations:

"I did know how to access learning materials through Google, but the computer technician instructed us on how to use Google drive to get information," (SSI Student 07).

The comment stressed the vital role of specialized human resource in instructing students with VI. The researcher established that the institution had one ICT technician serving the students including those with VI. The researcher felt that the ICT technician had a lot of work serving the huge number of students. It was also established that the computer laboratory had run out of the screen readers. Moreover, the computer laboratory was inaccessible to students who are blind.

Lecturers also talked about the existence of the skilled human resource in their institution. A lecturer had made the following statement:

"Specialist human resource available to serve the students with VI include ICT specialist, SNE trained teachers who are proficient in Braille and Braille Transcribers," (Q-open Lecturer 05).

Similar sentiments were shared by one institutional administrator who said:

"The Braille transcriber plays an important role in the education of students with VI. She prepares curriculum materials for the students. We also have the ICT technician who helps them access information from the internet. The experts are not enough but we cannot employ more due to limited financial resources," (SSI Adm 01).

The observations by the lecturer and administrator reveal the presence of specialized human resource in the institution. Their role in the preparation of the curriculum materials for the students with VI is also emphasized.

"We have specialist services given by lecturers trained in education of students with VI and Braillists," (Q-open Adm 01).

A lecturer who had experienced working closely with the Braille transcriber in the preparation of curriculum materials expounded on his experience:

"In terms of the physical infrastructure, we have some equipment. In terms of preparing curriculum materials, the institution has a specific unit for the Braille related activities such as transcription where it has employed the transcriber who helps with Braille transcription. For example, I give her my examinations in print, and she transcribes into Braille. She also converts from Braille into Print to allow marking to take place. So, we have those machines that are helping in that work. Those are the basic assignments to a transcriber," (SSI Lecturer 06).

Many lecturers who are not versed in Braille would not be in a position to effectively teach the students with VI if the Braille transcriber was not present in the institution. The study found that amongst the professionals that served the students with VI in the institution included specialist teachers, Braille transcribers and ICT technicians. Specialist teachers have varied roles that include carrying out visual functional assessment of the students. This entails ascertaining whether the student uses Braille or print; and communicating the same to the authority to ensure that the student is served with the appropriate medium of learning (Otyola, Kibanja & Mugagga, 2017).

The specialist teacher also assesses the learning needs of the student to determine the intensity of lighting required in the classrooms, halls of residence and lecture halls. In addition, the specialist teacher conducts functional skills assessment of students with VI such as the ability to use appropriate ICT devices.

The participants said that the Braille transcribers are charged with the responsibility of preparing Braille materials. That entails converting print into Braille and vice versa; preparing tactile diagrams; and repairing Braille machines for students with VI. On the other hand, the ICT technicians are responsible for installing, and maintaining the online resources for all students. The roles of the specialist human resource in the education of student with VI cannot be overemphasized. The roles were covered in the literature review in Chapter Two of the study.

5.7.3 Limited Financial Resources by Students with VI

Students with VI have varied financial needs which should be met in the tertiary institutions. The researcher interviewed the participants regarding the financial resources available for students with VI in the tertiary institution. The participants gave varied experiences regarding the financial abilities of students with VI, and the financial resources of the tertiary institution.

A student with VI said that most of the visually impaired students come from low social economic backgrounds; and hence they required financial support. She had made the following remarks:

> *"As you may be aware a great number of the students with disabilities do not come from good social economic backgrounds, yeah. They could consider that and if there are avenues on how they can be helped to get support, they should be supported. One, we have the National Council for* Persons with Disabilities; they could work, liaise, or collaborate with them *and see how they could assist the students with disabilities because there are funds allocated for that support. So, if they collaborate and work hand in hand with the council, they could be helped,"* (SSI Student 05).

"The Visually impaired students are faced with a lot of financial problems. It seems that most of them come from poor social economic backgrounds," (Q-open Lecturer 05).

The remarks by the student and the lecturer concurred that most students with VI came from low social economic backgrounds with limited financial ability. The student further made an appeal to the institution to collaborate with other organizations to find ways of providing financial support to students with VI.

The need for financial support was also emphasized by another student with VI.

"The institution should give us time during the payment of fees; they should not send us home to bring money. They should be patient with us until when our parents get the money and are able to pay the fee," (SSI Student 03).

The statement by the student showed there was a struggle to pay college fees by most of the students with VI, calling for the institution's understanding. Another student with VI said:

"I almost failed my end of first year examinations. I had a serious struggle with fee payment. I was out of college most of the time due to lack of fee," (FGI Student 07).

A lecturer in support of the students' sentiments noted:

"The one challenge I noted is that quite a number of the students with VI come from humble backgrounds and we have been helping them to apply for support from the National Council for Persons with Disabilities," (SSI Lecturer 03).

There is need to put in place a good support system to help the students with VI in the institution. A lecturer observed that some students with VI were struggling to get funding from the National Council for Persons with Disabilities (NCPD). For almost a year after applying, the funds were not forthcoming.

"Now I know of two cases of students who applied last year July and to date, almost a year later they have not received support. And I see them being sent home for

fees and struggling to look for donors. Most of them come from very humble backgrounds," (SSI Lecturer 02).

The comment by the lecturer indicated limited financial abilities by the students with VI and their struggle to pay fees for their studies. Hence, there is need for a well-established support system to assist them with fees payments.

As a consequence to limited financial resources by the individual students with VI, and the scarcity of resources by the institution, a student urged the institution to collaborate with other agencies to offer financial support for the students with VI.

"The institution should source for funds maybe from donors, well-wishers and the Ministry of Education to support Braille machines and other equipment purchase for the students with VI," (FGI Student 03).

The financial difficulty experienced by most students with VI was reiterated by an administrator.

"The students with visual impairments have several challenges. Most of them come from humble social-economic backgrounds. They always face challenges when it comes to fees payment. I think it is the high time the government gave them more resources in terms of loans and assistive devices," (SSI Adm 03).

Students with VI require finances to procure different goods and services. For instance, they can use the money to procure specialist equipment used in their education such as Braille machines, Braille, note takers and Orbit readers. The specialist equipment should be owned by an individual student with VI who should continue to use the equipment to write or access information even after they have completed their studies and are out of the learning institutions. Students with VI may occasionally require the assistance of a reader to help them identify and read the content of some textbooks in the library. Therefore, they may require finances to pay for such services.

In addition, students with VI are not exempted from paying tuition fees and other levies in the learning institutions. Hence, they are expected to meet their financial obligations to the institutions of learning (Zelelew, 2018). This becomes a serious and crucial factor

considering the low social-economic backgrounds of majority of the students with disabilities. Providing the students with financial support will go a long way in helping them pay their fees and hence complete their studies. From the foregoing, the central role played by financial resources in the education of students with VI cannot be overemphasized.

5.8 SUPPORT BY PEERS, LECTURERS AND TECHNICAL STAFF

The support provided by the peers and lecturers to students with VI was one of the themes that emerged from the analyzed data. The following sub-theme emerged from the theme: support by the students without VI, support by the lecturers and other technical staff. The way the students without VI, lecturers and support staff assisted the students with VI has been discussed in the subsequent paragraphs below.

5.8.1 Support by Students without VI

Having students with VI work together with those without is one of the practices that have been embraced by inclusive institutions. The researcher interviewed participants of the study about the relationship that existed between the students with VI and students without VI. The participants had several experiences regarding the relationship.

A student with VI had indicated that students without VI read for them text materials written in print. The student made the following remarks:

> *"We used to go to the library to get books. We sit together with our friends who used to help us. Then we read bit by bit and take the relevant information for every literature we get. But I wish the VIs could access the information from the internet without seeking for help. It could be better. So, ICT knowledge is important for persons with visual impairments,"* (SSI Student 02).

> *"The students with visual impairments are assisted by their colleagues who read for them textbooks and so they are able to do their assignments"* (Q-open Student 12).

The comments by the students with VI indicated that there was support provided to them by the sighted students to access curriculum materials written in print. The use of print

made curriculum materials inaccessible to students with VI especially those who were totally blind. Therefore, the students with VI required support from the students without VI to read textbooks in print for them in most cases. The support was crucial for the students with VI to complete their assignments.

The support provided to students with VI in accessing written texts was mentioned by a student with VI.

> *"So, we just borrow the books and rely on our colleagues who are not visually impaired to read for us. We also discuss together what has been read to us,"* (FGI Student 04).

The sentiment by the student with VI denoted appreciation of the support given to her by the sighted student. The support such as reading for students with VI was crucial since they may not have had a reader handy all the time and the students had assignments to complete.

Another student with VI said that she was always guided by a sighted student to go to different places.

> *"Aaa (sic) assistance... I think they just walk the students with visual impairments to places. If they are kind, they will read for you notes, the ones that you do not have. They are really handy. They are helpful because at times you want to go to a place you are not conversant with or you need some guidance, they will walk you to the place,"* (SSI Student 01).

The students with VI would have had a lot of difficulties moving from one place to another especially in an unfamiliar environment without support by their sighted peers. Thus, sighted guide provided to the students with VI was important in navigating the environment. The student's statement was an appreciation of the support given to her in navigating the environment. Students with VI would generally require some support to undertake certain tasks even in familiar environments.

Several studies have shown that when students without VI are paired with their counterpart with VI, there are benefits that accrue to all the students. The practice promotes social interaction between the students that has long lasting effects beyond the period of schooling (Oranga, Chege & Mugo, 2020). When students with varied abilities

work together, it helps in building a cohesive society where persons with different abilities are valued and celebrated. The inclusive education must, therefore, begin at school and permeate to the society. This idea was widely discussed in the literature review in Chapter Two of the study.

5.8.2 Support by Lecturers and Technical Staff

Lecturers in the tertiary institution including students with VI have supported the students in various ways. For instance, lecturers had included students with VI whenever students were going out for a visit. A lecturer teaching social sciences was taking the students on an educational visit and he included students with VI in his entourage. He made the following remarks:

> *"Last week, I took 40 students who belong to the Wildlife Club to tour and climb Mt. Longonot. You know it is our policy to include all students in every activity of the institution. I had three students who are visually impaired in the group going out to tour. We try as much as possible to put the students who are challenged in the list of those going out,"* (SSI Lecturer 06).

The statement by the lecturer indicates a concerted effort by lecturers to include all students in all activities of the institution. This kind of support should be encouraged in all the institutions practicing inclusive education.

A student with VI who was newly admitted in the institution received support from one of his lecturers. He wanted to visit an ophthalmologist, yet he was not conversant with the environment.

> *"Our lecturers are very supportive. I did not know where to find the eye doctor but one of the lecturers drove me to the clinic in town. He even came back for me,"* (SSI Student 03).

The support provided by the lecturer showed kindness and wiliness to assist the students. Students with VI require a supportive environment in which their needs are recognized,

and they are supported. With proper support, the students with VI are likely to perform academically well.

5.9 POLICIES THAT SUPPORT INCLUSION OF STUDENTS WITH VI IN TERTIARY INSTITUTIONS

The researcher interviewed the participants of this study to find out their experiences with the policies that guide inclusion of the students with VI in their institution. The analyzed data found sub-themes on the policy of inclusion. The sub-themes that emerged from the analyzed data were institutional policies related to training students with VI; and institutional policies on social relationship between the students with VI, students without VI, lecturers and other staff.

5.9.1 Institutional Policy on Training of Students with VI

The tertiary institution had policies that guided the inclusion of students with VI. A participant lecturer observed:

> *"The institution had a policy on inclusion of students with VI in the training programs. The policy had set clear criteria for admission of students with VI in the teachers' training colleges in the old system of education. According to the policy, students with VI were admitted in the colleges with a grade lower than other students attained in the Kenya Certificate of Secondary Education (KCSE),"* (SSI Lecturer 05).

The presence of a policy of admission for students with VI was part of the government's affirmative action to ensure equity in the provision of educational services in the country. The policy accorded many students with VI an opportunity to train in teachers' training colleges and other tertiary institutions across the country.

Another lecturer said there had been a good policy on the inclusion of students with VI that worked well in the former system of education. The policy had taken into account the difficulties encountered by students with VI in technical subjects. A lecturer commenting on the criteria of admission remarked:

"Subjects studied in teachers' training colleges had been put into two groups, namely Group A and Group B. While Group A subjects comprised of Mathematics, English, Kiswahili, Science, Art and Craft and Agriculture, Group B comprised of English, Kiswahili, Social Studies, Home Science, CRE and Music. This allowed the students with VI to choose group B subjects which are more favorable to them and avoid Mathematics and Art and Craft" (SSI Lecturer 04).

Other participants had made similar observations concerning difficulties encountered by students with VI who are studying the newly introduced Competency Based Curriculum. An administrator observed:

"The CBC system of education requires the students to study all the subjects during their teacher training. However, there are subjects which pose a lot of challenges to the students with VI. Our students with VI have difficulties studying Mathematics, Art and Craft, and Science," (SSI Adm 01).

The administrator cited Art and Craft, and Mathematics as some of the subjects which pose a challenge to students with VI. The students also said they experience challenges while tackling Mathematics. The former system of education that had put the subjects into two groups and allowed the students with VI to select the group of subjects that was favorable to them was more preferred compared to CBC.

The strict admission criteria in the teachers' training colleges that is unfavorable to students with VI was pointed out by a lecturer in the following remarks:

"But we have noted areas of concern. One, is the policy of admission; the grade seems unachievable for learners with visual impairments, particularly when you require that learners should score a constant grade in several learning areas. And we know through experience, it is difficult for some of these learners to get very high grades required for admission. That one policy has reduced the numbers of students with visual impairments in the institution. Number two is this policy of ensuring that students in teachers' training colleges do all subjects. It is not friendly because we have learning

areas where learners with visual impairments cannot do well e.g., Fine Art. How do you expect them to draw and colour the pictures and diagrams? How do you expect them to do Science? We have noted that they have issues with Science and Mathematics. If they were allowed to specialize in areas they are good in, they are good to go," (SSI Lecturer 05).

The criteria of admission set by CBC have challenges. Unlike the old system of education, CBC requires the students to have attained an overall Grade C in KCSE examination and Grade C in Mathematics and at least one science subject. Also, the new system of education requires all the students to study all the subjects in the teachers' training colleges. A lecturer talked about admission criteria in the CBC system of education and had the following views:

"The strict selection criteria into diploma and degree programs have locked out many students with VI in training programs," (Q-open Lecturer 06).

There is an urgent need for the Ministry of Education to revisit the admission criteria in the teachers' training colleges to ensure equity in education.

The policy on inclusion of students with VI into the institution had set some criteria on the assessment of the students. A lecturer observed:

"I do not know of the policies, but I am aware of a few practices. About 30 minutes more is allocated to students with visual impairments during exams. In accommodation, visually impaired students are paired with a sighted students to share a room; and almost all visually impaired students are settled in rooms of their own in the hostels," (SSI Lecturer 02).

The institution's policy to give the students with VI an extra 30 minutes to take their examination on top of the set time for the sighted students means that the institution recognizes that the mode of learning for students with VI is different and therefore disadvantages the students. The students with VI need more time to accomplish the same tasks taken by sighted students.

The participants also mentioned that students with VI were put in a separate room during examination. This was an institutional policy to shield the students from disruptions by the movements of the sighted students when they leave the examination room when their set time is up.

"During the examination, students with visual impairments were separated. Yes, inclusion was there but since there was complaint that the noise made by Braille machine was disrupting our colleagues, we agreed to sit our examination in a separate room. I cannot say that it was exclusion. They had set a room where we would take our exams from," (SSI Student 02).

According to the student, the reason the students with VI were put in a separate room during examination was to shield the sighted students from the noise made by their Braille machines to write the examination. The noise would interfere with the concentration of the sighted students while taking their exams.

5.9.2 Institutional Policies on Social Relationship with Students with VI

The institution had policies on how the students with VI related with their sighted peers. For instance, students with VI were not expected to queue when being served meals. A student remarked about the policy:

"The only thing they were keen about is just giving the blind students the opportunity not to queue and giving them a room during exams. But when it came to notes, if you do not have full support before the exams, when it comes to exams, it will be upon you to work hard and pass," (SSI Student 01).

The policy was probably meant to shelter the students with VI from unfavorable competition with their sighted peers. The institution had also made a concerted effort to ensure that the students with VI were not left behind during field visits.

"When we take learners for field trips, we must include learners with disabilities including learners who are visually impaired and those with other challenges. For example, next week we will be taking our learners to a field trip to KTN and Athi River. In a group of 11 students, four are visually

impaired. So, it's quite motivating for them. The list should be inclusive of such learners. The same treatment applies to our facilities like the canteens and even the boarding and dining sections. The other learners have understood that whenever learners who are visually impaired visit the facilities for service, they normally give them priority. So, it could be a policy that is silent, but it is very clear. You will not see the other learners allowing their visually impaired colleagues to be served after them," (SSI Lecturer 06).

The explanation by the lecturer points to an elaborate effort by the lecturers to ensure that students with VI were included in all the activities of the institution. The inclusion is nurtured and supported by the presence of appropriate policies and guidelines in the country. The policies should then be cascaded downwards to individual institutions where students with disabilities are included in learning programs (Zelelew, 2018). The existence of such policies in the developed nations has led to more advanced inclusive practices in those countries.

Kenya has adopted the inclusive education policy in her quest to include students with disabilities in the mainstream of the society. The policies on inclusive education are contained in various documents that include but not limited to education commission reports, sessional papers, and education committee reports (Chikati, Wachira & Mwinzi, 2019). The policies will not translate into appropriate inclusive education practices unless they are fully understood and embraced by the individual institutions involved in the inclusion of students with disabilities. The researcher tried to find out if the tertiary institutions involved in the inclusion of students with VI had a policy on inclusive education. The institutional policies are likely to be contained in policy documents, internal circulars and guidelines given to staff.

The policy plays a crucial role in the inclusion of students with disabilities. The policies not only spell out the services to be offered to the students with disabilities but also the person responsible for provision of the service. It also stipulates what should be done to a person responsible for providing the service whenever there is failure to provide the

stipulated service. Institutions involved in the inclusion of students with VI must, therefore, have a clear policy on inclusion and make efforts to periodically induct their staff on the requirements of the policy.

5.10 STRATEGIES OF IMPROVING INCLUSION OF STUDENTS WITH VI

There are different strategies that could be used to improve the inclusion of students with VI in the tertiary institutions. These include induction of lecturers on the use of appropriate methods of teaching; procurement of more assistive devices; employment of more specialist human resources; expansion of the existing physical resources, and modification of the physical environment used by students with VI.

5.10.1 Induction of Lecturers in the Methods of Teaching Students with VI

The researcher interviewed participants about the strategies that could be used to improve the inclusion of students with VI in the institution. The participants were of the view that some of their lecturers were using inappropriate methods of teaching the students with VI. For instance, students with VI pointed out that some lecturers were writing on the board without verbalizing for them what they were writing. Consequently, the lack of verbal output by the lecturer left the students with VI mesmerized in the classroom. This was clearly demonstrated by a student participant who remarked:

> *"A lecturer gets into class and she will not talk most of the time. She will be writing quietly on the board. Mind you in the classroom, there is no one assigned to help you. So, if they want to help you, they will. If they do not want, that is just it,"* (SSI Student 01).

The sentiment by the student indicates that some of the lecturers did not take into consideration the fact that all students with VI rely on verbal output from the lecturer. While the sighted students can comfortably see what the lecturer has written on the board, the students with VI have difficulties following the lecture. In a situation where the lecturer does not verbalize as he/she writes, the students with VI are left in the dark as their sighted peers copy the notes from the board.

Another student participant felt that their lecturers were using quite inappropriate methods of teaching on students with VI.

"While they are teaching, I wish they could verbalize what they are writing on the board. However, if they are using a projector, which is quite often not used by several lecturers, they should verbalize what is projected on the screen. Secondly, as the lecturer is verbalizing what is displayed on the screen, she/he should move closer to the student with visual impairment, because we are not many, to clarify the concepts being taught," (SSI Student 02).

The idea of the lecturers writing on the board but not verbalizing did not favour the students with VI. The students also expressed concern that some of their lecturers used gestures to demonstrate a style of swimming in a physical education lesson. This method of teaching was inappropriate for students with VI who could not benefit from the gesture. While the use of gestures benefitted the sighted students, their peers with VI required the gesture to be accompanied with verbal explanation.

"The lecturer would teach and use gestures to explain their point to sighted students especially in Physical Education lessons. For example, they would demonstrate how to execute backward stroke in swimming. However, they would not explain how the activity is done to visually impaired students. That left the student wondering how the activity is done. So that was one of the challenges for us," (SSI Student 02).

The students also complained that some lecturers were teaching too fast for the students with VI to keep up with the pace. As a result, the students with VI could not prepare their notes in a systematic manner.

"There are many challenges experienced by many students with visual impairments. In many cases, lecturers use lecture methods to teach the students and in most cases they are too fast. The students with VI end up not having understood what is being taught. In some cases, the visually impaired students are not able to write the notes," (SSI Student 03).

The above comment implies that some of the lecturers were not conversant with the learning needs of the students with VI who generally require more time to execute same tasks compared to sighted students. For instance, students with VI need time to fix Braille papers into the Braille machine which takes time. Students without VI do not experience

such delays while writing their notes. Hence, a lecturer needs to teach at a reasonable pace that allows the students with VI to adjust his/her Braille machine and feed Braille papers into Braille machine during the lesson.

The lecturers should always try to involve the individual student in the lesson. The individualized attention to students enables them to learn better. Participants felt that the lecturers were not paying attention to individual students with VI.

> *"The lecture method is not appropriate for students with visual impairments. They should involve learners who are visually impaired. They should not just give us a lecture. When they teach, they should at least use resources and involve us in the lesson. I think it will be more practical,"* (SSI Student 05)

> *"Some lecturers are very fast for students with visual impairments who need time to insert Braille papers in the Braille machine. Thus, although lecture method is the most widely used, it is not very appropriate as students with VI lack individualized attention from the lecturers,"* (FGI Student 05).

Since the methods of teaching cited in the above paragraphs were inappropriate to use with the students with VI, it is important to periodically induct lecturers on the appropriate methods of teaching the students with VI. This will equip the lecturers with the appropriate skills and knowledge that will benefit the students with VI by having access to the curriculum materials in an inclusive setting.

5.10.2 Procurement of more Assistive Devices for Students with VI

One of the strategies that can be used to enhance the inclusion of students with VI in the tertiary institution should be procurement of more assistive devices. According to a participant lecturer, the assistive devices in the institution were not sufficient for all the students to use. The participant made the following observation on the status of assistive devices:

> *"We really require a lot of Braille machines. The ones available are not adequate. We also require spacious rooms for the learners with visual impairments. We require magnifying glasses for those who have low vision*

as well as enlarging machines. We are only using one. But it is insufficient
because it is also used by the other students,". (SSI Lecturer 06).

"There is dire need for more assistive devices for students with visual
impairments. We do not have enough Braille machines, low vision devices,
and ICT resources. These devices are essential in the education of students
with VI. Perhaps, the government should increase annual capitation for
these cadre of students," (SSI Adm 03).

From the above statements, it is clear that the assistive devices and other equipment used in the education of students with VI were not sufficient and hence the institution needs to procure more. The assistive devices would enable the students with VI to have more access to curriculum materials and gain more in their learning experiences. It is important to note that the sentiments by the participants were in consonance with the data obtained from the infrastructural observation checklist. Based on the checklist, I found that the resource room did not have adequate working space for the Braille transcriber and storage for other equipment. I also found out that there were only a handful of Braille machines in good working condition. There were several Braille machines which were broken down and required repairs but due to lack of spare parts the machines could not be salvaged.

A student participant observed that the institution should invest more in ICT resources, since technology has been embraced by the whole world; and so, students including those with VI must be trained in its application and utilization.

> *"ICT should be taught to all students in teachers' training institutions due to*
> *the significant role it plays in the present life. It is used in almost every*
> *industry and Kenya cannot be left behind in adopting the use of ICT. I think*
> *ICT should be made compulsory in the first year of study if the students are*
> *to be competent in using it,"* (SSI Student 02).

The remark by the participant resonates well with the data I derived from the infrastructural observation checklist. I found out that the institution had a computer laboratory with hardly 15 computers and only four had been designated to students with

VI. Although the computers used by students with VI are generally fitted with screen readers, the softwares were obsolete during the time of collecting data for this study. Therefore, there is need to buy more computers especially those used by students with VI. This will enable them leverage on the advantages of the ICT technological innovation.

The participants gave more reasons why they were advocating for more investments in assistive technologies. They believed that the use of modern assistive technologies brings more efficiency in the production and access to curriculum materials by students with VI. A student participant noted:

> *"The institution should buy the note takers and orbit readers. I think they are the best because they are easy to carry around. Despite the fact that they are expensive, when we get those ones, it would be easier for us to use. And as you are aware we are in the era of inclusion, we need technologies which are more efficient, that do not make a lot of noise. You know that Orbit readers and Note takers are very efficient and they are not noisy when in operation,"* (SSI Student 05).

The same observation was made by a lecturer participant:

> *"The institution needs to invest in low vision technologies; more refreshable Braille Note taker displays to enhance easy access to information and avoid storage of books and notes. Braille books and papers can be very bulky to use and require large storage,"* (Q-open Lecturer 02).
> *"The institution should buy modern equipment such as Orbit readers, Note takers, Smart Braille machines and low vision devices,"* (Q-open Student 18).

The participants also believed that the use of modern assistive technologies would enable the students with VI to have more access to curriculum materials, thereby enhancing inclusion of students with VI.

> *"The institution should buy Note takers and Orbit readers. They are more efficient in Braille production and are easily portable. They don't make noise when in operation. Braille machines are becoming obsolete,"* (SSI Student 08).

"The institution should buy modern equipment used for writing Braille such as Orbit readers and Smart Braille machines. They are more efficient to use and do not make noise while in operation. They are also more potable to carry around," (FGI Student 04).

Based on the above discourse by participants regarding the use of modern technology, the institution stands to gain by investing in the procurement of modern technologies used to educate students with VI. The use of modern assistive technologies will enhance the participation of students with VI in both curriculum and extra curriculum activities in the tertiary institutions.

5.10.3 Expansion of the Existing Physical Facilities in the Tertiary Institution

The expansion of the existing physical facilities in the institution is one of the strategies that can be used to enhance the inclusion of students with VI. The participants of the study stressed that the existing physical resources were not adequate for the number of students currently being admitted in the institution. They argued that students with VI use bulky books and assistive devices that require a large working space. The institution should establish spacious classrooms and dormitories with lockers or cupboards to assist the students with VI keep the devices they often use such as Braille machines and Orbit readers.

"…We also require rooms for these learners which are spacious…" (SSI Lecturer 06).

A student participant commenting on the available physical facilities made the following remarks:

"I feel that the dormitories are really congested and it is very difficult to have any working space. Also, it is very easy for one to lose his/her items," (FGI Student 08).

Another student participant cited the lack of a resource room where they can safely store their assistive devices after use.

"Students with visual impairments sometimes do not have a cabinet to store their machines. Other students will put other things on top of your Braille

machine especially when you live in a congested room. This may spoil your
machine. A resource room would really come in handy," (SSI Student 02).

Similar sentiments were aired by a participant administrator:

"Improve physical facilities in the college such as dorms, classrooms, and better
pavements," (Q-open Adm 02).

There is need to build more classrooms and hostel facilities used by the students as a strategy to improve inclusion.

The participants were also concerned about the students with VI sharing washrooms with their sighted peers in a crowded environment. They said the congestions in the hostels could easily predispose them to contracting diseases.

"The institution should build more classrooms, lecture halls and spacious
resources centre for the students. In fact, congestions witnessed in the hostels can
easily predispose students to diseases. The administration should know that
students with visual impairments require their own rooms for their own security
while they are in the institution," (FGI Student 01).

"The institution should put up washroom facilities with toilets with seats for the
visually impaired students. I think the toilet seats are more appropriate for students
with visual impairments," (Q-open Student 17).

The participants also appealed for the expansion of other physical resources such as sporting facilities as well as the ICT infrastructure in use in the institution. The expansion of the facilities, they argue, will help ease the congestions in the students' hostels and better accommodate the students with VI in the institution.

"The institution should put up more sporting facilities for students with VI. They
should be fully engaged like the normal student," (Q-open Student 18).

The discourse by the participants concerning the conditions of the physical facilities in the institution clearly demonstrates the need to improve the existing facilities such as classrooms, hostels, abolition blocks and sporting facilities.

5.10.4 Employment of more Specialist Human Resource Personnel

The employment of more specialized and skilled personnel to serve students with VI is perhaps another strategy that can be used to improve inclusion. According to a student participant, the institution does not have adequate number of specialist staff to serve the students with VI.

> *"The institution should consider employing more specialist lecturers, Braille transcribers and ICT staff to efficiently serve the students with visual impairments. They should employ lecturers who are conversant with Braille Music notation, Braille Mathematics and Braille. Currently, the institution does not have a lecturer for Braille music, so it is taught by a regular lecturer,"* (SSI Student 01).

Another student had a similar opinion on the position of specialist staff.

> *"We need more braille transcribers, ICT specialists, and more specialist teachers to serve the students with visual impairments,"* (Q-open Student 13).

Similarly, participating lecturers advocated for more specialist lecturers and Braille transcribers to serve the students with VI.

> *"The institution needs some more specialist resource persons. We have only one specialist teacher for the visually impaired students. We also need another Braille transcriber who can assist in Braille transcription as well as preparation of Braille learning materials which often take a long time to prepare,"* (SSI Lecturer 03).

> *"We need more … and ICT technicians. You know that their work is demanding,"* (Q-open Lecturer 09).

> *"Yes, there are other human resource specialists required by our institution. We need experts to train the students in computing,"* (Q-open Support 02).

The central role played by the trained and skilled personnel in the education of the students with VI cannot be overemphasized. A tertiary institution should have an appropriate number of skilled personnel to serve the students effectively (Hewett et al., 2018). Perhaps the most disabling factors that militate against acquiring the appropriate number of skilled staff is the lack of finances to pay their salaries and other emoluments.

This calls upon the institution to have a clear source of funding from the government and donors as was stressed by several participants in the study.

5.10.5 Modification of the Physical Environment used by Students with VI

The modification of the physical environment is one way to boost the inclusion of students with VI. Although the institution had wide and safe pavements connecting its various buildings, the stairs in most of the buildings did not have appropriate modifications. Most of the buildings were old and hence it was difficult to make modifications on the structures. The stairs in the administration block leading to the offices of the principal and the Learning Resource Centres (LRC) were steep and did not have the appropriate colour contrast to ease movement by students with VI.

> *"We have some buildings like the LRC where the stairs are not disability friendly. In future they should come up with pavements that do not disadvantage the movement of these learners. If a building is put up tall in future, we request that the lifts are included to serve the learners who find it hard,"* (SSI Lecturer 02).

> *"To a great extent, the institution has a very supportive social environment. We have created awareness about visual impairments and other disabilities amongst our members. But the physical environment requires improvement. Of course, we have wide paths that are friendly for the students with visual impairments. We also have a specific hostel that has been adapted for students with visual impairments. But I feel that is just very little adaptation,"* (SSI Lecturer 01).

The need for modifications of the physical structures of the institution was confirmed by data from infrastructural observation checklist. I found out that there are appropriate staircases that lead to both the administration block and the Learning Resource Centre. Although the staircases had good rails to facilitate the movement of the students with VI, they were too steep. The staircases in the administration block were narrow and proved a challenge for the students with VI in accessing the principal's office. The modification

of the physical structures will ensure that students with VI are able to move more efficiently and safely in the environment.

Furthermore, the institution did not have adequate lightning to enable students with VI especially those with low vision function effectively in their environment. For instance, the lightning systems in some classrooms were broken down.

> *"We have various classes where the lights are spoilt, so not comfortable for some of the students especially those with low vision. Other lights need improvements,"* (SSI Lecturer 03). A student also made a similar observation: *"Lighting is not adequate. The paths and corridors are also a challenge because some areas have ditches which can be dangerous to students with visual impairments,"* (Q-open Student 04).

Based on the sentiments and observations made by the researcher, lighting in the streets and some classrooms was inadequate for students with VI. There is need to put in place an adequate lighting system to enhance the functioning of all students.

> *"There is need to make modifications in some facilities in the institution. For instance, the doors of the washrooms should be widened to facilitate easy access by the students with VI. The toilets should be modified to have wider doors that can allow students with disabilities use them. The toilets should also be clean to cater for the students with visual impairments,"* (SSI Lecturer 05).

The institution had well written signages that could easily direct students without VI and other sighted persons but there were hardly signages in Braille for students with VI. This was quite evident on the doors of the classrooms which were well labeled in print but did not have Braille equivalent to facilitate orientation and ease of movement by students with VI. A participant student had suggested that labels written in Braille should be stuck on the doors. She stressed:

> *"All rooms should have well labelled doors. You see, they should label the rooms in a way that students with visual impairments can access. They should use braillion to write in Braille to enable learners with visual*

impairments to read. The braillion paper should be stuck on all the doors so that students with visual impairments can read without difficulties. The braillions papers do not wear out easily. So sticking braillion papers labeled with numbers and then orienting the students with visual impairments to know where to locate the room numbers can address the issue of access by them. It would really help the students locate the rooms easily; it is something that is doable," (SSI Student 06).

The inclusion of students with VI necessitates modifications on the social and physical environments where the students with VI operate. Thus, tertiary institutions including students with VI should strive to achieve reasonable levels of modification in their physical and social environment to achieve effective inclusion. Most of the participants viewed modification of the physical environment of their institution as a sure way of enhancing inclusion.

5.11 CONCLUSION

This chapter covered presentation and interpretation of data derived from questionnaires, semi-structured interviews, and observation checklist. Data collected was used to answer the four sub-questions set by the study. It also formed the basis for providing answers to the overarching question which was the main concern of the study. The study found that tertiary institutions can enhance the inclusion of students with VI by periodical induction of lecturers on the appropriate methods of teaching students with VI; procurement of more and advanced assistive devices; expanding the existing physical resources and modifying the physical environment of their institutions. The next chapter will focus on summary, conclusion and recommendations.

CHAPTER SIX

SUMMARY, RECOMMENDATIONS AND CONCLUSION

6.1 INTRODUCTION

This chapter deals with summary, recommendation and conclusion of the study. It provides the summary of the four preceding chapter of the thesis as well as the themes and the sub-themes derived from the research findings. Then, the chapter will discuss the varied recommendations to tertiary institution including students with VI in their program and other stakeholders who are concerned with the welfare of students with VI in the society. Also, the chapter will discuss the possible contribution of the study to body of Knowledge and provides a framework that can be used to improve inclusion of students with VI in tertiary institutions. The recommendations made by the researcher are those concerned with strategies of improving inclusion of students with VI in tertiary institutions. Finally, the chapter provide conclusion of the study.

6.2 SUMMARY OF THE STUDY

Chapter One comprised the introduction of the study and provided its background. The chapter discussed the paradigm shift in the education of students with disabilities including those with visual impairments from segregated special institutions to regular institutions all over the world (Henkebo, 2018). The shift that is popularly known as inclusion has witnessed more students with disabilities enroll in regular classrooms at all levels of learning in recent years (McCarthy & Shevlin, 2017). While the shift has been supported on human rights grounds that segregated schooling is inhuman (Hornby, 2015), it has been opposed on the grounds that regular school placement may not provide all the necessary resources to students with disabilities (Papuda-Doliska, 2017). However, several studies have shown that inclusion has several merits that outweigh its demerits (Hayes & Bolat, 2017). Thereafter, the chapter discussed the statement of the problem which necessitated the study. The chapter recognized that despite the merits of inclusion of students with disabilities in regular institutions, placing them without proper social and physical adjustments to the environments may result into more exclusion.

Thereafter, the chapter discussed the rationale of the study which constituted the justification why the study was carried out and the benefits that would accrue from it.

Chapter Two constituted the literature review of the study. It began by discussing the concept of inclusive education, considered as a philosophy that advocates for the education of students with disabilities in the same classroom with other students without disabilities (Omukwuor & Uchechi, 2017). Then the chapter discussed the various international protocols on which inclusive education is anchored such as the Universal Declaration of Human Rights, the World Conference on Education For All (EFA), the Salamanca Statement and Framework of Action on special needs education and the Millennium Development Goals of 2000 (Hankebo, 2018). Thereafter, the chapter discussed the development of inclusive education in Africa as well as in Kenya (NGEC, 2016). The chapter had emphasized on the role of the African Charter on the Right of Children in the realization of inclusive goals. Also, the chapter noted that the policy of inclusive education in Kenya is contained in varied policy documents such as Education Commission Reports as well as Sessional papers (Chikati, Wachira & Mwinzi, 2019). The chapter also discussed the rationale and the benefits of inclusive education. It was noted that educating students with disabilities in an inclusive setting enabled them make social and educational gains that outweigh the gains made in special classroom placements (Hayes & Bolat, 2017).

The chapter also discussed the concept of VI and tertiary education for students with VI. It was noted that the transition of the students with VI to tertiary education remained consistently low, with barely 50% of them transiting from secondary schools into tertiary education (McCarthy & Shevin, 2017). In addition, the study discussed the inclusion of students with VI in tertiary institutions in the Western world and recognized that the presence of policies and the availability of resources have played a key role in the success of the practice in those countries compared to the developing countries of Africa (Correa-Torres, Conroy, Rondle-Kahn and Brown-Ogilvie, 2018). Also discussed in the chapter is the inclusion of students with VI in Rwanda, Ethiopia and Kenya. Also discussed are the various strategies used to make curriculum accessible to students with VI such as the

use of appropriate methods of teaching and assistive devices (Stone, Kay & Reynold, 2019).

Chapter Three dealt with the theoretical framework on which the study is anchored. It began with discussions on the meaning of a symbol and defined a symbol as a stimulus abstract or arbitrary to which meaning is applied (Redmond, 2015). Accordingly, symbols have meaning solely by virtue of consensus among groups of people using them. Consequently, language can be considered as a collection of symbols that is organized according to the rules of communication (Carter & Fuller, 2015). Also, the chapter discussed how symbols are created by the society which depends on the same symbols for interaction and communication. Thus, the interaction between the society and symbol creates a vicious cycle in which society creates symbols which are used by the same society for communication and for creation of meaning.

In this chapter, it was noted that the inclusion of students with VI in the tertiary institutions accords lecturers, students and other members of staff an opportunity to interact with each other and gain experience and knowledge from the interaction (Green, 2015). Thus, meaning arises from the interaction process between the people and hence symbolic interactionism can be used to describe meaning related to teaching students with disabilities in an inclusive setting. The chapter also discussed the historical perspectives in the development of symbolic interactionism theory. It emphasized that the philosophical foundation of the theory could be traced back to analytical, inductive and interactive, and pragmatic thoughts of classical Greek philosophers such as Plato and Aristotle.

However, the theory as it is known today must have originated from Herbert Mead who had extensively discussed it in his book *Mind, Self and the Society* (Redmond, 2015). Herbert Blumer (1900-1987), a student of Herbert Mead is famed with coining the term symbolic interactionism theory. The chapter also discussed the three premises of the symbolic interactionism theory. They are human acts towards things based on the meaning those things have for them. Secondly, meaning of things is not intrinsic in the things themselves but meaning comes from interaction with other people. Lastly, meanings of things are modified through interactive process used by people dealing with things (Abakah, 2015). The chapters also discussed the various studies in which symbolic

interactionism theory had been applied. For instance, Nwankwo and Nnatu (2018) studied inclusive education of students with disabilities in Nigeria using symbolic interactionism theory. Their study noted that human beings live in a world of meaningful objects consisting of things, actions, other people and symbols. Consequently, discrimination against people is associated with varied meaning such as inferiority complex, dehumanization, inhuman care and sense of inadequacy. The study found that inclusion was benefitting students with disabilities, however, teachers' negative perception of the students with disabilities tended to affect the students' academic performance. The chapter discussed other studies in which symbolic interactionism theory has been applied before making a conclusion.

Chapter Four comprised of the methodology and methods used in the study. It began with discussions on the meaning of a research paradigm which is defined as a general philosophical orientation about the world and the nature of research the researcher brings to a study (Creswell, 2014). Thereafter, the chapter discussed the roles of a research paradigm in research. A research paradigm provides beliefs and dictates which influence what should be studied and how the results should be interpreted by scholars in a particular discipline. Then the epistemological assumptions of the study followed. Epistemology is defined as the theory of knowledge (Mugenda & Mugenda, 2019). Also covered is the interpretivist research paradigm embraced by the study. Research paradigm will generally determine the research approach, research design and methods to be used in the inclusion of students with VI (Kivunja & Kiyini, 2017).

The chapter went on to discuss the tenets of interpretivist paradigm and noted that reality is socially constructed (Redmond, 2015). The chapter emphasized that lecturers, students with VI, students without VI and other members of staff interact with one another in learning institutions and scribe different meaning to inclusion. Thus, based on the idea that people can interact and construct meaning of a phenomenon, the paradigm is also known as constructivism. Next, the chapter discussed the methodology used in the study and noted that research methodology refers to the research design, methods, approaches and procedures used in the investigation that is well planned to find out something (Khatri, 2020). Besides, the chapter discussed the qualitative approach used to collect data.

According to Jameel, Shaheen and Majid (2018), qualitative research is a systematic study that seeks to document individual perspectives, experiences, thoughts and behaviour. Also, the chapter discussed reasons for using qualitative research approach in the study and noted that qualitative research approach uses multiple sources of data from the participants in their natural setting (Mugenda & Mugenda, 2019).

The chapter also discussed research design and described research design as a blueprint for conducting research projects and specific procedures necessary for obtaining information needed to solve a research problem (Creswell, 2014). Also covered was target population and described it as the entire group of individuals, units or objects having certain observable characteristics (Kothari & Gerg, 2019). The chapter went on to discuss the target population and emphasized that it is the population on which the researcher wants to generalize the results of the study (Mugenda & Mugenda, 2019).

The chapter described purposive sampling technique as sampling process of selecting a number of individuals or objects from the population such that the selected group contains elements representative of the characteristics found in the entire group (Young, 2016). Qualities of research tools that would be used in the study such as open-ended questionnaire, semi-structured interviews, Focus Group Discussion and infrastructural checklist were also discussed. This was followed by a discussion on the piloting of the instruments and defined piloting as simulation of the formal data collection process on small-scale to identify practical problems with regard to data collection instruments, sessions and methodology (Hurst et al. 2015). The chapter discussed data analysis and interpretation which is defined as the process of interpreting and understanding the qualitative data collected by the researcher (CDC, 2018). Interpretive phenomenological data analysis approach to interpret the finding of the study was adopted.

Chapter Five covered findings and discussions. The chapter began with a review of the overarching question and the subsequent secondary questions the study was striving to address. Thereafter, the chapter provided a discussion of the themes and sub-themes that emerged from finding derived from the data. The themes that emerged from findings 0f the study were accessibility of curriculum materials by students with VI; the use of inappropriate methods of teaching students with VI; recognition of the role technology in

education of students with VI; limitation of resources available for students with VI; support by peers, lecturers and technical staff; policies that support inclusion of students with VI in tertiary institutions and strategies of improving inclusion of students with VI.

Chapter Six is the final chapter of the study. It covers the summary, conclusion and recommendations by the researcher. The chapter begins by providing an account of the summary of the varied chapters covered by the study. Thereafter it provides varied recommendations to the Ministry of Education, Science and Technology and the tertiary institutions involved in the inclusion of students with VI. The recommendations are meant to improve the inclusion of students with VI in the tertiary institutions. The chapter also presents conceptual framework and limitations of the study. Finally, the chapter presents a conclusion.

6.3 SUMMARY OF THE FINDINGS

The summary of the study will be provided based on the secondary research questions the study was seeking to answer. It will provide summaries on: the current strategies and resources the tertiary institution is using to enable students with VI access curriculum; environmental modification done in the tertiary institution to accommodate students with VI; policies that exist in the tertiary institution to support inclusion for students with VI; and strategies that could be used to improve inclusion of students with VI in the tertiary institution.

6.3.1 Strategies and Resources Used to Access Curriculum by Students with VI

There were various strategies that the institution had employed to ensure the students with VI were accommodated in their programs. The strategies included making the curriculum accessible using different strategies and the use of technology. These strategies have been discussed below:

6.3.1.1 Accessibility of curriculum materials by students with VI

The institution had put in place different strategies to ensure that students with VI accessed curriculum materials easily. These included the preparation of handouts in

Braille version, use of large prints for students with low vision and provision of tactile maps and diagrams for students with severe VI.

While Braille enabled the students with VI access curriculum materials, its preparation is tedious and laborious. The study found that the lecturers made good attempts to prepare text materials in Braille but there were occasions when they could not prepare handouts in Braille because the Braille transcriber was either busy or occupied with other duties. The study found that the institution had only one Braille transcriber and so she was overworked. The work of preparing the curriculum materials in Braille was tedious because it was done manually. The study found that there was an urgent need to employ modern technologies in Braille production in the institution to ease the work of the transcriber and the students.

The institution also used large print for students with low vision. It was found that the use of large print had several advantages. Firstly, it is not as laborious to prepare as Braille materials. Moreover, large print does not require a lot of technical skills to prepare as Braille. It also allows lecturers to mark the students work without having to go through the tedious process of converting from print to Braille. As a result of using large print, the Braille transcriber has adequate time to perform other duties.

One of the accessible versions the handouts are issued to students with VI is Braille (Stone, Kay & Raymond, 2019). This mode of presentation of the handouts enables the students with VI access useful information like their sighted peers. Despite being useful to students with VI, reading Braille is slow compared to reading print (Louren & Swartz, 2016). Students with VI, therefore, should be given extra time to execute tasks that would take their counterparts with sight a relatively short time to execute. Students with VI also require adaptation of the learning materials (McCathy & McGckin, 2018). Thus, Maps and diagrams used by students with VI should be adapted to allow touch reading. Students with VI, especially those with low vision may require enlargement of the prints they use (Sight savers, 2018).

The researcher used symbolic interactionism theory as the lens through which to study how lecturers in the tertiary institution including students with VI made curriculum

materials accessible to the students. The study found that lecturers were presenting curriculum materials to their students in large print, Braille and tactile diagrams and maps. The Braille transcriber had the responsibility of preparing tactile maps and diagrams for students with VI. Although tactile maps and diagrams made it possible for students with VI to engage in map reading and interpretation as well as diagrams, some of the tactile maps and diagrams were inappropriately prepared. This could be attributed to the Braille transcriber being busy with other responsibilities and lack of skills by the lecturers.

6.3.1.2 Recognition of the role of technology in education of students with VI

The study found that the lecturers used various technologies in the education of students with VI. They included the use of ICT with assistive technology, assistive devices, recorded audio materials and low vision devices. The moves enabled students with VI access curriculum materials and complete their course.

The study found that the institution had ICT infrastructure in place with computers fitted with screen readers for use by students with VI. However, it was found that the number of computers fitted with screen readers were too few for the existing students with VI in the institution. Moreover, the screen readers in some of the computers had expired and could not allow the students with VI access information through the internet. The presence of ICT resources enabled the students with VI easy access to information they required for learning. In addition, some students used their smart phones to access information. However, the study found that some students with VI did not have the requisite skills to easily navigate the smart phones and other available gadgets to extract materials for their studies. Participants therefore proposed that ICT becomes compulsory for all students.

The use of ICT resources has revolutionized the education of students with VI (Stone, Kay & Raymond, 2019). Computers fitted with screen readers have enabled the students access information in a manner that has not been witnessed before (Mboshi, 2018). Screen readers are softwares that convert text to speech once they are installed in a computer (Stone, Kay & Raymond, 2019). Mboshi (2018) noted that Non-Visual Desk and Speech Access (NVDA) and Job Access with Windows (JAWS) are some of the notable screen readers used by students with VI.

The study used symbolic interactionism theory as the basis of interrogating the various assistive devices used in educating students with VI in the tertiary institution. It was found that there were several assistive devices used in the institution. These included Braille machines, low vision devices, thermoforming machines, scanner, long cane, and photocopiers. The study, however, revealed that the devices used were inadequate to cover the number of students with VI in the institution. Some of the equipment also were older versions. The institution should acquire modern devices especially for Braille production. The participants in the study proposed that the institution buys Orbit readers and note takers for the students with VI to write Braille.

The use of recorded audio materials to enable the students with VI access information was a strategy used by the institution to accommodate the students. The recorded audio materials allowed the students to listen to curriculum materials at their own time and hence able to revise at their own pace. Although the recorded audio materials were useful for students with VI, it was found that the institution did not have recorded audio materials with relevant content on the newly introduced CBC system of learning. The institution should therefore move with speed and make recorded audio materials with content focusing on CBC. The students with VI also lamented about disruption by other students when listening to recorded audio materials in their dormitories. The study has proposed setting aside an exclusive room which can be used by the students to listen to recorded audio materials.

The study found that the institution was using low vision devices to enable students with VI access the curriculum materials. The low vision devices used consisted of handheld lens, stand magnifiers and binoculars. The study, however, found that the low vision devices in the resource centre were barely adequate for the existing students with low vision. The institution should network with other stakeholders to increase the number of low vision devices to ensure easy access of curriculum materials.

6.3.1.3 The methods of teaching students with VI

Studies have shown that lecturers of tertiary institutions with students with VI quite often use inappropriate teaching methods to teach students (Sikanku, 2018; Penda, Ndhiovu

& Kasonde-Ngandu, 2015). The use of inappropriate methods of teaching has been known to have contributed to poor academic performance amongst students (Sikanku, 2018). The inappropriate methods of teaching used by lecturers in tertiary institutions have resulted in low participation in academic activities by students with VI (Penda, Ndhiovu & Kasonde-Ngandu, 2015).

To interrogate the methods of teaching used by lecturers in the tertiary institutions including students with VI, the study adopted the symbolic interactionism theory. The study found that the institution was an inclusive setting in which lecturers were bound to use diverse methods of teaching. It was found that most lecturers were using conventional methods of teaching such as lecture, demonstration, explanation, and field visits. Although these methods were quite appropriate for sighted students, they were inappropriate for students with VI. The students indicated that their lecturers did not expose them to concrete experiences.

The study found that most of the lecturers were not engaging in individualized instruction while teaching students with VI. The use of individualized methods of teaching is meant to find out whether the student with VI is following what is being taught. Also, the individualized instruction method of teaching is meant to provide the student with VI with an opportunity to ask the lecturer questions on what they have not understood. Lecturers may not have engaged in individualized instruction with students with VI because of the limited time set to cover the content.

It was also revealed that most lecturers did not verbalize what they were writing on the board. This affected the students with VI as they failed to follow the lecture. In addition, the students indicated that their lecturers did not provide them with verbal outputs about what they were projecting on PowerPoint on the board. The students would like the lecturers to verbalize any new vocabulary they write on the board during lectures.

The study also found that most lecturers did not provide concrete experiences to students with VI while teaching. For instance, it was cited that a lecturer could be teaching about a ring in netball during a PE lesson, and may assume that the students with VI know a netball ring like their sighted peers. It would be important to expose the students with VI

to a real netball post and the ring to have a concrete imagination about it. The best method of teaching the student with VI should include providing them with real objects, field visits and demonstrations to provide them with concrete experiences. Furthermore, the use of models and specimen by lecturers during lessons will enable the students with VI have concrete experiences about the concepts taught.

6.3.2 The Environmental Modifications Done to Accommodate Students with VI

The placement of students with VI in tertiary institutions necessitates adjustments of the physical and social environments of the institutions (Zelelewa, 2018). According to Omede (2015), the presence of curved stairs, high steps and narrow walkways make buildings in many tertiary institutions inaccessible to students with VI. Also, classrooms and lecture halls in the tertiary institutions including students with VI should have proper planning and organization to facilitate safe and efficient movement of students. (Otyola, Kibanja & Mugagga, 2017; Fast, 2018). Furthermore, the level of lighting in the buildings is an important consideration in the accommodation of students with VI in the inclusive institutions (Hankebo, 2018). Fast (2018), argues that the ability of students with VI to carry out a task increases with increased illumination. There should be appropriate lighting to enable the students with VI operate efficiently and safely in their environment.

The study showed that some physical and social adjustments had been done on the environment to accommodate the students with VI. The modified environment had made the tertiary institution more conducive and accommodative. Also, this improved accessibility and participation by the students with VI.

6.3.2.1 Modification of physical environment

The compound of the institution had wide pavements connecting the administration block with classrooms, dining halls, library, and the dormitories. The pavement was made of well fitted Cabro blocks, and thus, it seeped rainwater easily without making the pavement slippery. Also, there was a kerb at the edge of the pavement that facilitated efficient movement of students with VI within the pathway. The Kerb was painted in white and black colours that provided a good contrast for students with VI.

In addition, the compound of the institution had varied landmarks placed strategically to assist the students with VI ascertain their locations. The landmarks consisted of posts along the buildings to facilitate mental orientation of the students with VI as they moved about. Also, some places within the staircases had rails that students with VI could hold on as they climbed or descended the staircases. However, they were too steep for the students with VI to navigate easily.

6.3.2.2 Adjustment in social environment of the institution to accommodate students with VI

There was a conducive and supportive social atmosphere in the tertiary institution. This was clearly manifested in the various ways that indicated a good working relationship between the students with VI and their sighted peers. For instance, sighted students acted as guides to their peers with VI to assist them move from one place to another. Thus, students with VI were able to move comfortably within and outside their institution.

6.3.3 The Policies that Support the Inclusion of Students with VI

The government of Kenya has enacted various laws and policies to promote the inclusion of students with disabilities. For instance, the right of citizens of Kenya to receive quality education is guaranteed by the Constitution (2010), (NGEC, 2016; Elder, 2015). According to Elder, Article 54 of the Constitution specifically safeguards the rights of students with disabilities to access quality education in institutions and facilities that are integrated into society to the extent compatible with their interests. This implies that students with disabilities have a right to receive their education in regular schools (Elder, 2015). To investigate the policies that support inclusion of students with VI in the tertiary institution, the study used symbolic interactionism theory.

The institution had put in place policies to support inclusion of students with VI. There were policies on the training of students with VI as well as policies to guide interaction between the different cadres of students. Although some of the policies had been cascaded from the national policies dealing with admission and training of students by the Ministry of Education, Science and Technology, other policies had been enacted within the institutions. The institution policies are contained in guidelines, memos and

circulars. The national policies, on the other hand, are contained in various policy documents by the Ministry of Education.

6.3.3.1 Policies on training of students

The study found that students with VI were admitted into teachers' training colleges at a grade lower than their sighted peers. While students without VI were expected to have scored a mean grade of C to be admitted to the teachers' training colleges in the former system of education, those with VI joined with a mean grade of C-minus in the Kenya Certificate of Secondary Education. The current CBC system requires the students without VI to have scored a mean grade of C in the Kenya Certificate of Secondary Education and a C in Mathematics and one Science subject to be admitted. On the other hand, students with VI are expected to have a mean grade of C-minus and C-minus in Mathematics and one Science subject. This is a departure from the former system of education that did not make attainment of a mean grade C in Mathematics and Science compulsory for admission in teachers' training colleges. The study found that the present criterion of admission has disadvantaged the students with VI who are unlikely to attain grade C in Science and Mathematics.

The institution had a policy on the examination for students with VI. The policy mandates the personnel involved in the administration of the examination to give the students with VI extra 30 minutes above the time stipulated for students without VI. The policy recognizes the different learning mode of the students with VI which is comparatively slower than that of their sighted peers.

Moreover, the students with VI were made to sit their examination in a separate room. This was done to minimize disruptions occasioned by noise by other students who would leave the examination room 30 minutes earlier. The set-up also shielded the sighted students from the noise made by the Braille machines.

6.3.3.2 Policies on relationship between students without VI and students with VI

The tertiary institution had policies on how students without VI related with their sighted peers. For instance, students with VI were exempted from queuing during mealtimes

when students were being served. This policy was meant to safeguard them from unfavorable competition from the sighted students. The institution also had a policy of involving the students with VI in all the activities undertaken by other students.

6.3.4 Strategies of Improving Inclusion of Students with VI

Several strategies have been mooted for improving the inclusion of students with VI in the tertiary institution. The strategies include induction of lecturers in the use of appropriate methods of teaching; procurement of more assistive devices; employment of more specialist human resources; expansion of the existing physical resources; and modification of the physical environment.

6.3.4.1 Induction of lecturers to use appropriate methods of teaching students with VI

The study found that some of the lecturers were using inappropriate methods to teach the students with VI. For instance, some lecturers did not verbalize what they were writing on the board. Others were teaching too fast making it difficult for the students with VI to follow because they have to continuously keep fixing new Braille paper into the machine during its operation.

Some of the lecturers also were not using individualized methods of teaching the students with VI. This implied that the lecturers were not engaging individual students by asking them questions or finding out if they had understood the concept being taught. As a result, students with VI were often left behind in the acquisition of knowledge and skills. It meant that the lecturers did not apply knowledge and skills to teach the students with VI. There is need to periodically induct lecturers in the appropriate methods of teaching the students with VI. The induction workshops will go a long way in equipping the lecturers with the appropriate skills and knowledge of teaching the students with VI to enable them access the curriculum materials easily.

In some instances, the lecturers failed to provide concrete experiences to the students with VI while teaching them. This meant that sometimes they were teaching concepts that the visually impaired students had little understanding of.

6.3.4.2 Procurement of more assistive devices for students with VI

One of the strategies that could be used to enhance the inclusion of students with VI in the tertiary institution is to invest in the procurement of more assistive devices for students with VI. The participants of the study emphasized the need for procurement of advanced technologically assistive devices such as Orbit readers and note takers. The adoption of refreshable Braille to replace the use of hard Braille is one of the ways to improve the learning of the students with VI.

The study found that the use of ICT facility had assisted students with VI to access print materials easily. Students with VI were able to use computers fitted with screen readers that produced an auditory dialogue to access the curriculum materials in a significant way. Also, it was found that students with VI were able to use smart phones to access information during learning sessions. Thus, the use of smart phones allowed the lecturers to send soft copies of the notes to the students with VI which they were able to access by use of screen readers with auditory dialogue. Although the use of ICT devices had enhanced the ability of students with VI to access useful information, lack of knowledge and skills by the students to effectively use ICT devices hindered them from benefiting from the technology. Therefore, teaching the students with VI skills and knowledge of using ICT will enable them access more information and allow them to be better accommodated.

6.3.4.3 Expansion of the existing physical facilities in the tertiary institution

Expanding the physical facilities in the institution is one of the strategies of enhancing the inclusion of the students with VI. The study found that the physical resources in the institution were not adequate for the existing students. For instance, it was found that majority of the students with VI often used bulky books and assistive devices that required a large working space and storage facility, yet the institution did have such facility. The institution should build spacious classrooms and dormitories fitted with lockers or cupboards to allow the students with VI store their devices.

The study also found that the dormitories used by the students were congested and there was a likelihood of students losing their items. The institution should build a large resource room, partly where the assistive devices can be stored and as a quiet and a serene room where students with VI listen to recorded audio materials.

The students with VI had expressed their dissatisfaction with the state of the washrooms and bathrooms. There were few toilets and bathrooms in poor state that could easily predispose them to contracting diseases. The institution should build more toilets with toilet seats as the squat ones are not favourable to the students with VI. There is also need to expand the existing sporting facilities as well as the ICT infrastructure in use in the institution. The expansion of such facilities will result in effective inclusion of the students with VI.

6.3.4.4 Employment of more specialist human resource personnel

The deployment of more specialized lecturers to teach the students with VI is another strategy that can improve inclusion. The study found that most of the lecturers in the institution were not conversant with the methods and skills of teaching the students with VI. This led to a scenario where the lecturers sought advice from the students with VI on the appropriate strategies of teaching them. There is need to deploy more trained specialist teachers in the institution to effectively teach the students with VI.

The institution had only one Braille transcriber serving all the students with VI. This put a lot of pressure on her and also caused delays in preparing the Braille materials. There was also only one ICT technician serving all the students. This was overwhelming for the technician considering the number of the students being served and especially those with VI who require one-on-one method of instruction. The shortage of specialist teachers may have been caused by lack of finances to pay salaries and other emoluments. The institution should establish a clear source of funding for the education of students with VI.

6.3.4.5 Modification of the physical environment used by students with VI

Although the institution has wide and concrete pavements connecting different buildings within the compound, it was observed that the physical environment needed more modification to improve the accessibility and participation of the students with VI. Despite the fact that the institution had wide and safe pavements connecting its various buildings, the stairs in most of the buildings did not have appropriate adjustments for the students with VI. This should be addressed to ensure that the students with VI are safe while in the institution.

The institution should also improve its lighting system to enable the students with low vision operate effectively. The study found that the lighting in some of the classrooms was not adequate.

Another strategy that can be employed to improve inclusion of students with VI is to have appropriate signage in strategic places in the institution. It was found that the institution had well written signage that could easily direct students without VI and other sighted persons, but there were none in Braille for the students with VI.

6.4 POSSIBLE CONTRIBUTIONS OF THE STUDY

The study provides a detailed description on inclusion of students with VI in a tertiary institution in Kenya. It also highlights the challenges inherent in the process of including students with VI and provides views by lecturers and students with VI on how to overcome the challenges. Furthermore, the study provides insights by the lecturers and students on strategies that can be used to improve the inclusion of the students with VI in tertiary institutions. The study adds to the body of knowledge base on the inclusion of students with disabilities especially those with VI in the tertiary institutions by exploring the role of policy on inclusion; strategies of making curriculum accessible to students with VI, environmental modifications required to increase accessibility and participation of students with VI and pedagogical support needed in inclusive settings.

The study contributes to the existing knowledge on inclusion of students with VI by highlighting the challenges encountered by both students with VI and lecturers. Thus, it

provides valuable knowledge to policy makers in the Ministry of Education, Science and Technology and at the institutional level on how to improve service delivery to students with VI in the tertiary institutions. Furthermore, the experiences shared by the students with VI can provide the lecturers with tips on how to make curriculum more accessible to them. Accordingly, it is envisioned that the adoption of this conceptual framework by the tertiary institution will result in improved academic performance by the students with VI thereby enhancing the inclusion of this cadre of students in the society. The findings of the study can also inform follow up studies in the field of inclusion of students with disabilities.

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6.5 SUGGESTED FRAMEWORK FOR INCLUSION OF STUDENTS WITH VI

Figure 6.1 How to improve inclusion of students with VI
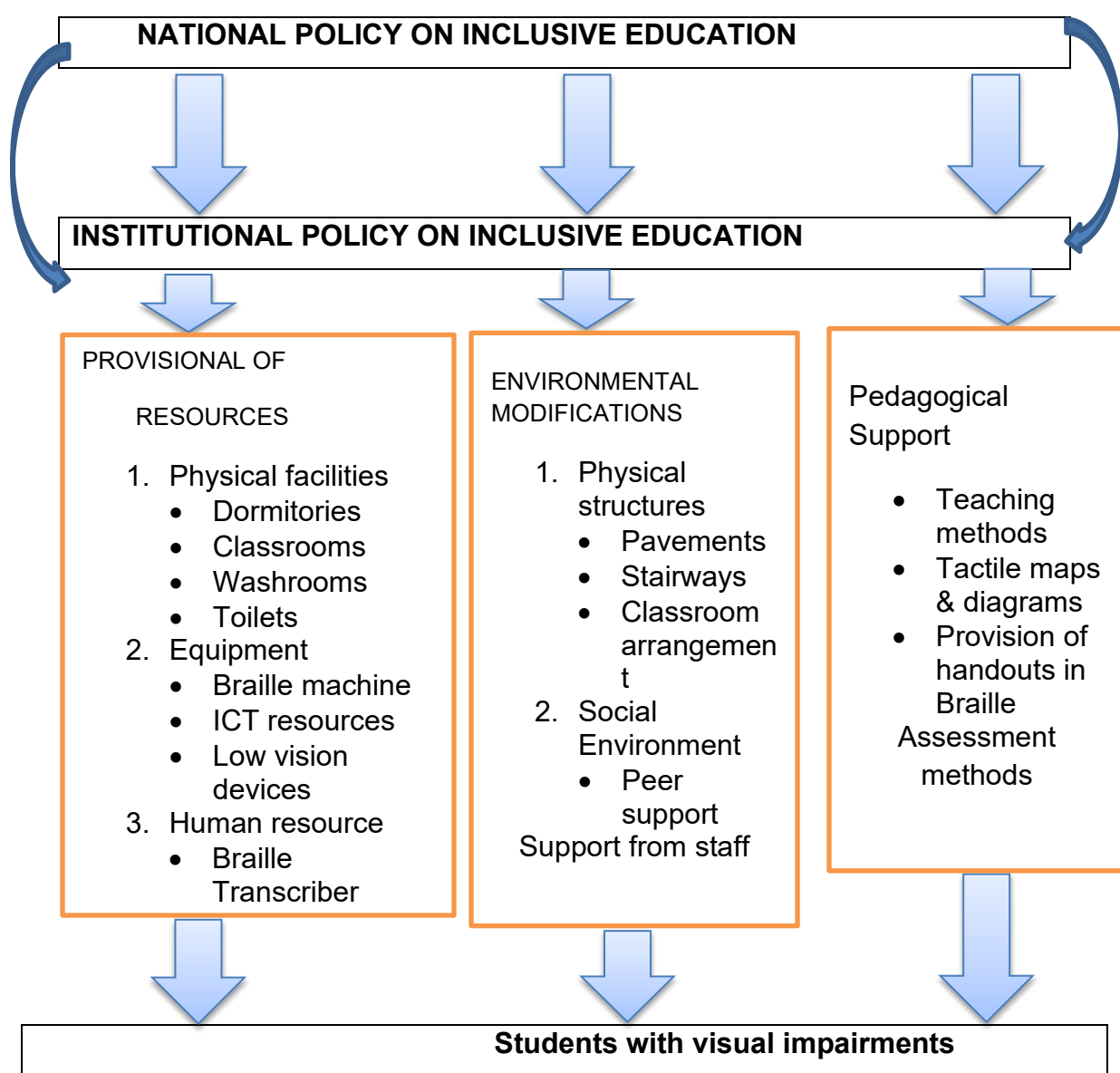
A framework has been defined by Maile (2021) as the identification and categorisation of processes or steps that constitute a complex task. Accordingly, the framework illustrated above (Figure 6.1) provides identification and categorisation of processes involved in the inclusion of the students with VI. Hence, the various components of process can be improved to enhance the inclusion of students with VI in the tertiary institution. The national policy on inclusive education should be cascaded into institutional policies on

inclusive education. The presence of policy on inclusive education provides the guidelines on the provision of the necessary resources such as physical facilities, human resource, equipment, materials and financial resources used in the education of students with VI. The policies on inclusive education are anticipated to provide guidelines on how to achieve pedagogical support to students with VI pursuing programs in the tertiary institution.

The pedagogical support required by the students with VI include but not limited to provision of handouts in Braille, provision of large print, modified assessment methods as well as modified curriculum contents. In addition, the students with disabilities require the modification of the social and physical environment of the tertiary institutions where they learn. This can only be achieved through the guidelines provided by the policy. Thus, the success of any inclusive program for students with VI is a function of the presence of the national and institutional policies on inclusive education; provision of resources; environmental modifications; and pedagogical support.

6.5.1 The Objectives of the Suggested Framework

- To indicate the significant role played by the national and institutional policies in the provision of services to students with VI
- To indicate categories of resources utilized by students with VI in tertiary institutions
- To indicate aspects of environment that require modification to accommodate students with VI
- To denote aspects of pedagogical support required by students with VI in tertiary institutions
- To indicate components of service delivery that lead to successful inclusion of students with VI in tertiary institutions
- To provide a framework that can be used for monitoring and evaluating inclusion program.

6.5.2 The importance of Provision of Resources

The inclusion of students with VI necessitates the use of various resources that include but not limited to physical facilities, assistive devices, teaching and learning materials and human resources. Students with VI in an inclusive setting would require the use of physical resources such as dormitories, bathrooms, sporting facilities, toilets, classrooms and lecture halls. While dormitories, washrooms and toilets are useful in the accommodation of the students with VI, lecture halls and classrooms are required for training purposes.

The tertiary institutions accommodating students with VI should have adequate assistive devices such as Braille machines, Orbit readers and note takers to be used by students with VI to write Braille. Also, students with VI require ICT resources such as smart phones, laptops and desktops fitted with screen readers for accessing information. Furthermore, tertiary institutions should avail items such as Braille papers, braillions and other consumables for use in the preparation of teaching and learning resources used by students with VI.

The tertiary institutions including students with VI need specialist human resources such as specialist teachers, Braille transcribers and ICT technicians. Specialist teachers working in tertiary institutions including students with VI have various roles that include functional visual assessment; liaising with external agencies on behalf of students with VI and advising other lecturers on how to make curriculum materials accessible to students with VI. On the other hand, Braille transcribers are involved in the transcription of texts from print to Braille, preparation of learning materials and repairing assistive devices among other responsibilities. ICT technicians help the students with VI to access information for learning purposes.

6.5.3 Environmental Modifications

The inclusion of students with VI in tertiary institutions necessitates modifications on the physical structures such as stairways, corridors and balconies of buildings. Also, there is need to adopt doorways and windows of classrooms, lecture halls and dormitories used by students with VI. The adaptations are necessary in making the buildings more

accessible and safe for the students with VI. Furthermore, the social environment of the tertiary institutions should be welcoming to students with VI. The institutional communities comprising of lecturers, support staff and students without VI must make concerted efforts to provide students with VI with the necessary support.

6.5.4 Pedagogical Support

Students with VI in tertiary institutions require various pedagogical support such as being taught using methods of teaching appropriate for students with VI; adapting learning materials to suit students with VI and using alternative methods of assessment appropriate for students with VI. The use of such varied pedagogical support will ensure that the students with VI have access to curriculum and hence benefit from the educational programs. Their handouts should also be prepared in accessible version. Preparing the handouts in Braille as well as having audio recorded materials will enable the students access the required learning materials.

6.5.5 Monitoring and Evaluation of the Support

Monitoring and evaluation are an essential component of program design, implementation and completion (Awuori, Bwonya, Ngala & Aosa, 2022). Monitoring is a continuous assessment throughout the implementation period of a project (Sopact, 2020). On the other hand, evaluation is the periodic including interim evaluation during implementation, terminal evaluation at the end of a project and the impact evaluation that occurs after completion (Kariuki et al. 2019). The main purpose of monitoring and evaluation is to determine the efficiency of the program and involves finding out whether there are benefits that accrue from having the program (Sopact, 2020). Accordingly, monitoring and evaluation may involve tracking the performance of a program by analyzing policies, cost, deliverables and the timeliness of the program (Owuori, Bwonya, Ngala & Aosa, 2022).

The inclusion of students with VI in tertiary institutions is a program that needs monitoring and evaluation to determine whether there are benefits that accrue from it. The program will be evaluated by using inputs and outputs such as the number of students with VI

admitted in the program in a given academic year; the number and type of assistive devices procured each year; the expansions done on the existing facilities; the number of staff and students without VI inducted on ethos of VI; and the number of students with VI who graduate from the program each academic year. The monitoring and evaluation will ensure that the inclusion program benefits the students with VI without deviating from the intended purpose.

6.5.6 Possible Limitations of the Suggested Framework

The framework presupposes that national policies on inclusive education will be cascaded automatically to institutions involved in the inclusion of students with VI. However, the national policies of inclusion may not be adopted by institutions with students with disabilities. Furthermore, the framework presumes that the presence of the policy will lead to provision of services to students with VI, yet the presence of the policy may not translate to provision of services to students with disabilities in the tertiary institutions.

6.6 LIMITATIONS OF THE STUDY

This was a case study of a tertiary institution involved in the inclusion of students with VI. As a result, the findings of the study may not be generalized in other tertiary institutions. However, the study had adopted interpretivist paradigm that utilized qualitative research design. The research paradigm is characterized with in-depth descriptions and hence the findings may be transferred to a similar context without necessarily generalizing the results.

This was a qualitative research in which the researcher is part of the social world being studied. Therefore, the social researcher is likely to bring personal biases and values in the study. To safeguard against the researcher's subjective values and biases in the study, he was involved in the participant validation of the findings. This is a process in which the researcher provides the persons on whom he/she conducted the research with an account of the findings (BryMan, 2016). The goal is to seek confirmation that the research findings are similar with the views by the participants.

Furthermore, the researcher was engaged in the triangulation of data. For instance, the data obtained from qualitative open-ended questionnaire, semi-structured interviews and Focus Group Discussion were triangulated. According to Korstjens and Moser (2018), triangulation involves the use of variety of data collection technique and sources. This is done in order to minimize the disparity in data obtained from different participants concerning a particular issue. Triangulation also safeguarded the study against the researcher's biases and inclinations.

6.7 CONCLUSION

The study used symbolic interactionism theory as the basis of studying the meaning administrators, lecturers, students with VI, students without VI and support staff derived from interaction with inclusive educational practices in a tertiary institution. It was found that the tertiary institution including students with VI had a conducive social atmosphere that supported the inclusion of students with VI as shown by the support offered to students with VI by their sighted peers, lecturers and other members of staff. The students without VI always acted as a guide to the students with VI whereby they assisted them to move from one point to another within the institution. Also, the students without VI would read print materials for their peers with VI thereby enabling them access the information useful for learning purposes. In addition, lecturers and other members of staff provided support to the students. For instance, lecturers included students with VI in all the activities which the sighted students were involved such as visits by members of clubs and societies.

However, it was found that the institution did not have sufficient resources for the education of students with VI. It lacked modern assistive devices, physical infrastructure and the finances required for special needs for students with VI. The study outlined various strategies that can be used to improve inclusion of students with VI such as expansion of the existing infrastructure; induction of lecturers on appropriate methods of teaching the students with VI; modification of the existing infrastructure and procurement of modern devices and use of ICT resources. It is anticipated that the use of these strategies will greatly improve the inclusion of students with VI.

6.8 RECOMMENDATIONS

Based on the findings of the study, the researcher would like to make recommendations to the institution and the Ministry of Education, Science and Technology on the immediate steps that can be taken to improve the inclusion of students with VI in the tertiary institution.

6.8.1 Recommendations to the Institution

a) The institution should procure more assistive devices for students with VI especially the modern Braille writing devices such as Orbit readers, note takers and embossing machines.

b) The institution should build a spacious resource room where assistive devices can be stored, a room where students with VI can listen to recorded audio materials and an ICT resources room.

c) The institution should build more dormitories with better washrooms and bathrooms which can accommodate more students especially those with VI.

d) The institution should organize workshops in which lecturers are inducted on appropriate methods and strategies of teaching students with VI and on disability etiquette.

e) The institution should employ more technical staff especially Braille transcribers to help in serving the students with VI.

f) The institution should write a policy document that specifies the rights of students with VI and the persons responsible for the provision of those rights.

6.8.2 Recommendations to Ministry of Education, Science and Technology

The Ministry of Education, Science and Technology should ensure that:

a) Students with VI are exempted from pursuing Mathematics and Science as compulsory subjects when pursuing a Diploma in primary teacher education. This will ensure that the students with VI are not locked out of training by the strict admission criteria.

b) Students with VI are provided with the modern assistive devices for writing Braille and ICT devices.

c) Institutions accommodating students with disabilities are given extra capitation for maintenance of the devices used by the students with VI.

d) Higher Education Loans Board should provide students with VI with loans at zero interest to help pay tuition fees and other levies.

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APPENDIX A: PERMISSION FORM UNISA ETHICS COMMITTEE TO CONDUCT RESEARCH

UNISA | university of south africa

UNISA COLLEGE OF EDUCATION ETHICS REVIEW COMMITTEE

Date: 2021/08/11

Dear Mr JO Adongo

Decision: Ethics Approval from 2021/08/11 to 2026/08/11

Ref: **2021/08/11/63424932/33/AM**
Name: Mr JO Adongo
Student No.: 63424932

Researcher(s): Name: Mr JO Adongo
E-mail address: 63424932@mylife.unisa.ac.za
Telephone: +254722273651

Supervisor(s): Name: Dr J.M.C. Motitswe
E-mail address: Motitjmc@unisa.ac.za
Telephone: 012 484 1121

Name: Prof L.D.N. Tlale
E-mail address: tlaleldn@unisa.ac.za
Telephone: 012 429 2064

Title of research:

THE INCLUSION OF STUDENTS WITH VISUAL IMPAIRMENT IN TERTIARY INSTITUTIONS: A CASE STUDY OF TEACHERS' TRAINING COLLEGE AT MACHAKOS, KENYA

Qualification: PhD INCLUSIVE EDUCATION

Thank you for the application for research ethics clearance by the UNISA College of Education Ethics Review Committee for the above mentioned research. Ethics approval is granted for the period 2021/08/11 to 2026/08/11.

The **medium risk** application was reviewed by the Ethics Review Committee on 2021/08/11 in compliance with the UNISA Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:
1. The researcher will ensure that the research project adheres to the relevant guidelines set out in the Unisa Covid-19 position statement on research ethics attached.

2. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.

3. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the UNISA College of Education Ethics Review Committee.

4. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.

5. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing.

6. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.

7. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.

8. No field work activities may continue after the expiry date **2026/08/11**. Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

The reference number **2021/08/11/63424932/33/AM** *should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Kind regards,

Prof AT Motlhabane
CHAIRPERSON: CEDU RERC
motlhat@unisa.ac.za

Prof PM Sebate
EXECUTIVE DEAN
Sebatpm@unisa.ac.za

Approved - decision template – updated 16 Feb 2017

APPENDIX B: PERMISSION FROM THE GOVERNMENT OF KENYA TO CONDUCT RESEARCH

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **121918**

Date of Issue: **06/May/2022**

RESEARCH LICENSE

This is to Certify that Mr.., JOSHUA ADONGO ODHIAMBO of University of South Africa, has been licensed to conduct research in Machakos on the topic: THE INCLUSION OF STUDENTS WITH VISUAL IMPAIRMENT IN TERTIARY INSTITUTIONS: A CASE STUDY OF TEACHERS' TRAINING COLLEGE AT MACHAKOS, KENYA for the period ending : 06/May/2023.

License No: **NACOSTI/P/22/17292**

121918

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR
SCIENCE,TECHNOLOGY &
INNOVATION

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THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is Guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014

CONDITIONS

1. The License is valid for the proposed research, location and specified period
2. The License any rights thereunder are non-transferable
3. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research
4. Excavation, filming and collection of specimens are subject to further necessary clearence from relevant Government Agencies
5. The License does not give authority to tranfer research materials
6. NACOSTI may monitor and evaluate the licensed research project
7. The Licensee shall submit one hard copy and upload a soft copy of their final report (thesis) within one year of completion of the research
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice

APPENDIX C: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT MACHAKOS TEACHERS' TRAINING COLLEGE

Title: The inclusion of students with visual impairment in tertiary institutions: A Case study of teachers' training college at Machakos, Kenya

20th April, 2022.

Principal,

Machakos Teachers' Training College,

P.O. Box 124-90100

Machakos.

Dear Madam/Sir,

RE: RESEARCH STUDY CONCERNING INCLUSION OF STUDENT WITH VISUAL IMPAIRMENT.

I, Joshua Odhiambo I am doing research under the supervision of Dr Jacomina M.C. Motitswe a senior lecturer in the department of Inclusive Education and Tlale L. D. N a Professor in the department of Psychology towards Doctor of philosophy at the University of South Africa. We are requesting your institution to participate in the study entitled: The inclusion of students with visual impairment in tertiary institutions: A Case study of teachers' training college at Machakos, Kenya. The aim of the study is to determine strategies that can be taken to improve inclusion of students with disabilities including those with visual impairments in tertiary institutions in the country. Your institution is known for including students with visual impairment in your training program; and would be ideal for the study.

The study will entail collection of data by use of a qualitative questionnaires, interviews guides, focus group discussion, and observation schedules. While the study is likely to benefit your institution by making suggestion on how to improve access to curriculum materials to both students with visual impairment and the regular peers, it does not pose any serious potential risk.

The research is scheduled to take place between 17th and 28th May, 2021, but I will remain flexible to comply with institution's calendar of activities as your office would advise. During the collection of data in your institution, I will request for an office as well as a spacious hall where I can conduct focus group discussion for at least 11 participants in conformity with covid 19 protocols.

The researcher intends to write a report based on findings of the study that will be shared with your institution. However, I will also readily discuss with your administration on how to enhance inclusion of students with disabilities in tertiary institutions.

I remain looking forward to a positive response from your office over this matter even as we strive to improve the life and welfare of persons with disabilities in our society.

Yours Sincerely,

Joshua Odhiambo Adongo

Cellphone +254722273651.

APPENDIX D: PARTICIPANT INFORMATION SHEET AND CONSENT

Date: 20ᵗʰ April, 2021.

Title: The inclusion of students with visual impairment in tertiary institutions: A Case study of teachers' training college at Machakos, Kenya

Dear Prospective participant,

I, Joshua Odhiambo I am doing research under the supervision of Dr Jacomina M.C. Motitswe a Senior lecturer in the department of Inclusive Education and Tlale L. D. N a Professor in the department of Psychology towards Doctor of philosophy at the University of South Africa. We are requesting inviting you to participate in the study entitled: The inclusion of students with visual impairment in tertiary institutions: A Case study of Teachers' Training college at Machakos, Kenya.

The study is expected to collect information could be used to improve inclusion of students with visual impairments in your institutions. You are invited to participate in the study because you are currently studying/working at institution; and could provide useful information concerning inclusion of students with visual impairment in the training program. I obtained your contact details from Mr Peter Luthron who has been the coordinating teachers for students with visual impairment at your Institution. The sample for the study is made of 30 participants drawn from students with visual impairments, regular students, lecturer and administrators. The study will involve the collection of data by use of questionnaires, interview guide, observation checklist and focus group discussion. During the data collection participants will be expected to respond to questions in a questionnaire as well take part in a focus group discussion where it is necessary. Whilst the qualitative questionnaire may take a participant between 30- 45 minutes, the interview session may last 1-hour. Also, the participants in the study are informed that participating in this study is voluntary and they are free to withdraw the participation at any stage of the study.

The research findings of the study will benefit the participants in several ways. Firstly, it may offer suggestion on how to improve access to curriculum materials to students with VI. The improve access to learning materials by students with VI is likely to have positive ripple effects on regular students are likely to benefit from improved strategies of teaching students. Secondly, the study will assist lecturers to determine better methods and strategies to teach students with VI. However, the study does not envisage any potential risks to the participants.

The participants are assured of confidentiality as they do not write their names in any questionnaire nor will their names appear in any information obtained from transcribed interview. The only persons who will get access the information are the members of the research team and transcribers who will be expected to sign confidentiality agreement. The participants are also assured that their responses will be used to write the research report and to publish in the journal, however, their anonymity will be observed all the time by not mentioning their names. While every effort will be made by the researcher to ensure that the names of participants will not be connected to the information they will share during the focus group, the researcher cannot guarantee that other participants in the focus group will treat information confidentially. The researcher shall, however, encourage all participants to do so. For this reason the researcher the participants not to disclose personally and sensitive information in the focus group.

The participants are assured that hard copies of their answers will be stored by the researcher for a period of five years in a locked cupboard for future research or academic purposes. On the other hand, the electronic information obtained from the participants will be stored on a password protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval. The hard copies of the information obtained from the participants will be burned after lapse of five years while electronic copies will be permanently deleted from the hard drive of the computer.

I would like to inform the participant that should they be interested in obtaining the final research findings, then they should be free to contact Joshua Odhiambo Adongo on +254722273651 or jossyadongo@gmail.com. The findings of the study will be expected to be accessible within one and half years. However, should participant require any further information or want to contact the researcher about any aspect of this study,

please contact Dr Jacomina Motitswe of cellphone …………of University of South Africa on. Also, should you have concerns about the way in which the research has been conducted, you may contact_____

Thank you for taking time to read this information sheet and for participating in this study. Thank you.

_____

(insert signature)

_____

(type your name)

APPENDIX E: A COVER LETTER FOR A QUESTIONNAIRE

Title of questionnaire:

Dear respondent

This questionnaire forms part of my doctoral's research entitled: The inclusion of students with visual impairment in tertiary institutions: A Case study of teachers' training college at Machakos, Kenya for the degree phD at the University of South Africa. You have been selected by a purposive *sampling* strategy from the population of 1000. Hence, I invite you to take part in this survey.

The aim of this study is to investigateThe aim of the study is to determine strategies that can be taken to improve inclusion of students with visual impairments in your institutions in the country. Your responses to this questionnaire will assist the researcher to complete this study. The findings of the study may benefit the students with visual impairment by improving their access to learning materials and participation in the society.

You are kindly requested to complete this survey questionnaire, comprising two sections as honestly and frankly as possible and according to your personal views and experience. No foreseeable risks are associated with the completion of the questionnaire which is for research purposes only. The questionnaire will take approximately 40 minutes to complete.

You are not required to indicate your name or organisation and your anonymity will be ensured; however, indication of your age, gender, occupation position etcetera will contribute to a more comprehensive analysis. All information obtained from this questionnaire will be used for research purposes only and will remain confidential. Your participation in this survey is voluntary and you have the right to omit any question if so desired, or to withdraw from answering this survey without penalty at any stage. After the completion of the study, an electronic summary of the findings of the research will be made available to you on request.

Permission to undertake this survey has been granted by the University of South Africa and the Ethics Committee of the College of Education, UNISA. If you have any research-related enquiries, they can be addressed directly to me or my supervisor. My contact

details are: +254722273651 e-mail:jossyadongo@gmail.com and my supervisor can be reached at _____ (insert telephone number) Department of Inclusive education, College of Education, UNISA, e-mail: _____.

By completing the questionnaire, you imply that you have agreed to participate in this research. Please return the completed questionnaire to Joshua Odhiambo Adongo before 20th June, 2021 grant consent that the information I share during the focus group may be used by _____ (name of

APPENIDIX F: FOCUS GROUP DISCUSSION STUDENTS WITH VI

I am carrying out a study concerning the inclusion of students with visual impairments in tertiary institutions in Kenya. Therefore, I am kindly requesting for your support in the study by responding to this questionnaire frankly and honestly to enable the researcher to complete the study. The study is in partial fulfillment for the requirement of Doctor of Philosophy degree inclusive education of the University of South Africa. Your response will be treated with utmost gratitude and confidentiality.

1. What facilities are available for students with visual impairments in your institution?
2. What facilities would you wish to have in your institution for students with visual impairments?
3. What equipment are available for students with visual impairments in your institution?
4. What equipment should be made available in your institution for students with visual impairments?
5. What ICT infrastructure is available for students with visual impairments in your institutions?

6. What assistive technology is used in the computers to enable students with visual impairments to access information?
7. How appropriate are the methods of teaching used by lectures in your classes?
8. What other strategies are used by lecturers to assist students with visual impairments access learning materials?
9. How safe is the physical environment of your institution for use by students with visual impairments?
10. What areas of the physical environment of your institution require modifications to accommodate students with visual impairments?
11. Are the assistive devices adequate for students with visual impairments?
12. Are the lecture halls and other buildings well illuminated for use by students with visual impairments?

13. What is the relationship between students with visual impairments and the sighted peers?

14. What resources should the institution procure for use by students with visual impairments?

15. What are policies (Guidelines and procedures) of your institution regarding administration examinations and provision of handouts to students with visual impairments?

16. What should the institution do to increase access to learning/teaching materials for students with visual impairments?

17. What physical and human resources are required to enhance the inclusion of students with visual impairments?

18. What support services should be given to students within tertiary institutions?

Thank you.

APPENDIX G: INFRASTRUCTURAL OBSERVATION CHECKLIST

(A) Strategies and methods of teaching Students with visual impairments		
s/No	Statement	Remarks/Recommendation
1.	Are paths free of hazard obstacles such as bollards, garbage bins, outward opening windows, doors, or overhanging projections?	
2.	Are the pathways made of tactile materials which are not slippery when used by students with visual impairments?	
3	Does the pathways have kerb that can guide students with visual impairment to walk independent within the pathway without hurting him/herself	
4.	Are the paths adequately well illuminated for use by persons with visual impairments?	
5.	Does the staircases and balcony have handrails to safeguard the person with visual impairments?	
6.	Does the environment provide adequate landmarks to provide appropriate cues to persons with visual impairments?	
6.	Do the lecture halls have adequate illumination for students with visual impairment?	
7.	Do staircases have appropriate colour contrast?	

8	Do students with visual impairment get support to access textbooks and other learning resources in the library?	
9	Do students with visual impairment interact and socialize with the sighted peers out the classroom sessions?	

(C) Use of appropriate technologies and resources by students with visual impairments

10	Does the tertiary institution have ICT infrastructure?	
11.	Does the institution have ICT resources with appropriate software and technologies?	
12.	Does the institution have ICT resources to enable students with visual impairments to access their emails?	
13.	Does the institution have smart Braille machine and other devices that can produce refreshable braille?	
14.	Does the institution have low vision devices for students with visual impairments.	

APPENDIX H: INTERVIEW GUIDE FOR STUDENTS WITH VISUAL IMPAIRMENTS

I am carrying out a study concerning the inclusion of students with visual impairment in tertiary institutions in Kenya. Therefore, I am kindly requesting for your support in the study by responding to this questionnaire frankly and honestly to enable the researcher

to complete the study. The study is in partial fulfillment for the requirement of Doctor of Philosophy degree inclusive education of the University of South Africa. Your response will be treated with utmost gratitude and confidentiality.

1. What are the different versions in which handouts are prepared by lecturers for students with visual impairments?

2. What are your comments about appropriateness of diagrams and maps provide to students with visual impairments during lecturers?

3. What are the methods of teaching used by majority of lecturers in classes with students with Visual impairments?

4. What are some of the strategies that are currently being used by lecturers to ensure that students with visual impairment have access to the curriculum?

5. What are some of the strategies that lecturers should use to effectively teach students with visual impairments?

6. What assistive devices do you have in your institution for students with visual impairments?

7. Are the assistive devices adequate for students with visual impairments?

8. What resources should the institution procure for use by students with visual impairments?

9. What are some of infrastructural modifications that have been done on the physical structures and facilities in your institution to suit students with visual impairments?

10. What areas of the physical structures and facilities of your institution require modifications to accommodate students with visual impairments?

11. What is your comment regarding level of illuminations in the lecture halls and other buildings for use by students with low vision?

12. What is your comment about the relationship between students with visual impairments and the sighted peers?

13. Does your institution have a policy on inclusion?

14. What are some of the highlights of the policy?

15. What should the institution do to increase access to learning/teaching materials for students with visual impairments?

16. What physical and human resources are required to enhance the inclusion of students with visual impairments?

17. What support services should be given to students within tertiary institutions?

Thank you.

APPENDIX I: QUESTIONNAIRES FOR STUDENTS

I am carrying out a study concerning the inclusion of students with visual impairment in tertiary institutions in Kenya. Therefore, I am kindly requesting for your support in the study by responding to this questionnaire frankly and honestly to enable the researcher to complete the study. The study is in partial fulfillment for the requirement of Doctor of Philosophy degree inclusive education of the University of South Africa. Your response will be treated with utmost gratitude and confidentiality.

Part A: Demographic information

1. Sex of respondent: Male [   ]   Female [   ]
2. Age bracket of the respondent
    a) Below 20 year   [   ]
    b) 20 -24 years   [   ]
    c) 25 - 29 years   [   ]
    d) 30 -34 years   [   ]
    e) 35 years & above [   ]
3. What is your year of study?
    i.   First year [   ]
    ii.   Second year [   ]
    iii. Third Year   [   ]

Section B.

Strategies and resources used to include student with visual impairments in the tertiary institutions.

4. What specialist equipment used in writing Braille are available in your institution for use by students with visual impairments?
    a) ……………………………………………………………………………………
    b) ……………………………………………………………………………………
    c) ……………………………………………………………………………………
    d) ……………………………………………………………………………………

5(b) What Low vision Aids are available for use by students with low vision in your institution?

a) ……………………………………………………………………………………………

b) ……………………………………………………………………………………………

c) ……………………………………………………………………………………………

d) ……………………………………………………………………………………………..

5(c) what are your comments about the adequacy of the specialist equipment in your institution?

a) ……………………………………………………………………………………………..

b) ……………………………………………………………………………………………..

c) ……………………………………………………………………………………………..

5(d). What specialist equipment should be made available for students with visual impairments?

a) ……………………………………………………………………………………………

b) ……………………………………………………………………………………………

c) ……………………………………………………………………………………………

6 (a) What ICT equipment are available for use by students with Visual impairments?

a) …………………………………………………………………………………………

b) …………………………………………………………………………………………..

c) …………………………………………………………………………………………

6(b) What challenges to do face in using ICT equipment?

a) ……………………………………………………………………………………………

b) ……………………………………………………………………………………………

c) ……………………………………………………………………………………………

6(c) Does your institution have a computer laboratory specifically for students with visual impairments?

Yes [   ]   No [   ]

6(d) if yes, what assistive technology is used to access information by students with visual impairments VI?

a) ……………………………………………………………………………………
b) ……………………………………………………………………………………
c) ……………………………………………………………………………………

7(a) Mention the specialist human resources to available to serve students with visual impairments?

a) ……………………………………………………………………………………………
b) ……………………………………………………………………………………………
c) ……………………………………………………………………………………………

8(a) Are methods used by lecturer to teach students appropriate for students with visual impairments?

Yes [   ]   No [   ]

8(b) If No, what should lecturers do to make their lectures appropriate for students with visual impairments?

a) ……………………………………………………………………………………………
b) ……………………………………………………………………………………………
c) ……………………………………………………………………………………………

8c) How do you get notes for various subjects taught in your course?

a) ……………………………………………………………………………………………
b) ……………………………………………………………………………………………
c) …………………………………………………………………………………………..
d) …………………………………………………………………………………………..

8(d) what strategies do lecturers in your institution use to ensure that students with visual impairments have access to curriculum materials?

a) ………………………………………………………………………………….
b) ………………………………………………………………………………….
c) ………………………………………………………………………………….

d) ……………………………………………………………………………………………

Modifications in the environment to accommodate students with visual impairments.

9(a) What modifications has been done in the physical environment to ensure that students with visual impairments are safe within the institution?

a) ……………………………………………………………………………………………

b) ……………………………………………………………………………………………

c) ……………………………………………………………………………………………....

9(b) Mentions some of the modification that should be done in the physical environment of your institution to make it safe for students with visual impairments.

a) ……………………………………………………………………………………………

b) ……………………………………………………………………………………………

c) ……………………………………………………………………………………………..

d) ……………………………………………………………………………………………..

9(c) What is the relationship between the students with visual impairments and the sighted peers?

………………………………………………………………………………………………

………………………………………………………………………………………………

9(d) What support do students with visual impairments get from their sighted peers?

a) ……………………………………………………………………………………………

b) …………………………………………………………………………………………….

c) …………………………………………………………………………………………….

d) ……………………………………………………………………………………………

Policies that support inclusion of students with visual impairments.

10 (a) What policies do your institution have regarding accommodation, examinations, hand out and seating arrangements for students with visual impairments?

……

……

………

10(b) What challenges to you face as a student in your institution?

  a) ……………………………………………………………………………………………

  b) ……………………………………………………………………………………………

  c) ……………………………………………………………………………………………

  d) ……………………………………………………………………………………………

10(c) How can we enhance accommodation of students with visual impairments in your institution?

  a) ……………………………………………………………………………………………

  b) ……………………………………………………………………………………………

  c) ……………………………………………………………………………………………

  d) ……………………………………………………………………………………………

      END Thanks you very much.

APPENDIX J: QUESTIONNAIRES FOR LECTURERS

I am carrying out a study concerning the inclusion of students with visual impairments in tertiary institutions in Kenya. Therefore, I am kindly requesting for your support in the study by responding to this questionnaire frankly and honestly to enable the researcher to complete the study. The study is in partial fulfillment for the requirement of Doctor of Philosophy degree inclusive education of the University of South Africa. Your response will be treated with utmost gratitude and confidentiality.

Part A: Demographic information

1. Sex of respondent: Male [   ]   Female [   ]
2. Age bracket of the respondent

(a) Below 21 year   [   ]

(b) 21 -30 years   [   ]

(c) 31 - 40 years   [   ]

(d) 41 -50 years   [   ]

(e) 51 years & above [   ]

1. What is your highest academic qualification

    (a) Diploma [   ]

    (b) Bachelor [   ]

    (c) Med   [   ]

    (d) PhD   [   ]

4   How long have been teaching in this institution?..

Section B.

Strategies and resources used to include student with visual impairments in the tertiary institutions.

5   What specialist equipment used in writing Braille are available in your institution for use by students with visual impairments?

    (a) ………………………………………………………………………………………

    (b) ………………………………………………………………………………………

    (c) ………………………………………………………………………………………

(d) ………………………………………………………………………………………

5(b) What Low vision Aids are available for use by students with low vision in your institution?

(a) …………………………………………………………………………………
(b) …………………………………………………………………………………
(c) …………………………………………………………………………………
(d) …………………………………………………………………………………

5(c) what are your comments about the adequacy of the specialist equipment in your institution?

(a) …………………………………………………………………………………
(b) …………………………………………………………………………………
(c) …………………………………………………………………………………

5(d). What specialist equipment should the institution procure for the service of the students with visual impairments?

(a) …………………………………………………………………………………
(b) …………………………………………………………………………………
(c) …………………………………………………………………………………

6 (a) What ICT equipment are available for use by students with Visual impairments?

(a) …………………………………………………………………………………
(b) …………………………………………………………………………………
(c) …………………………………………………………………………………

6(b) What challenges to do students with VI face in using ICT equipment?

(a) …………………………………………………………………………………
(b) …………………………………………………………………………………
(c) …………………………………………………………………………………

6(c) Does your institution have a computer laboratory specifically for students with visual impairments?

Yes [   ]   No [   ]

6(d) if yes, what assistive technology is used to access information by students with visual impairments?

(a) ………………………………………………………………………………………………
(b) ………………………………………………………………………………………………
(c) ………………………………………………………………………………………………

7(a) Mention the specialist human resources to available to serve students with visual impairments?

(a) ………………………………………………………………………………………………
(b) ………………………………………………………………………………………………
(c) ………………………………………………………………………………………………

8(a) What methods of teaching to use as by lecturer to teach classes with students with visual impairments

(a) ………………………………………………………………………………………………
(b) ………………………………………………………………………………………………
(c) ………………………………………………………………………………………………

8c) How do you ensure that students with VI get notes for the subjects you teach in accessible format?

(a) ………………………………………………………………………………………………
(b) ………………………………………………………………………………………………
(c) ………………………………………………………………………………………………
(d) ………………………………………………………………………………………………

8(d) what other strategies do you as a lecturer ensures that students with visual impairments have access to curriculum materials?

(a) ………………………………………………………………………………………………
(b) ………………………………………………………………………………………………
(c) ………………………………………………………………………………………………
(d) ………………………………………………………………………………………………

Modifications in the environment to accommodate students with visual impairments.

9(a) What modifications has been done in the physical environment to ensure that students with visual impairments are safe within the institution?

     (a) …………………………………………………………………………………

     (b) …………………………………………………………………………………

     (c) …………………………………………………………………………………

9(b) Mentions some of the modification that should be done in the physical environment of your institution to make it safe for students with visual impairments.

     (a) …………………………………………………………………………………

     (b) …………………………………………………………………………………

     (c) …………………………………………………………………………………

     (d) …………………………………………………………………………………

9(c) What is the relationship between the students with visual impairments and the sighted peers?

…………………………………………………………………………………………………

…………………………………………………………………………………………………

9(d) What support do students with visual impairments get from their sighted peers?

     (a) …………………………………………………………………………………

     (b) …………………………………………………………………………………

     (c) …………………………………………………………………………………

     (d) …………………………………………………………………………………

Policies that support inclusion of students with visual impairments

10(a) What policies does your institution have regarding accommodation, examinations, hand out and seating arrangements for students with visual impairments?

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

10(b) What challenges to you face as a lecturer for students with visual impairments in your institution?

    (a) ………………………………………………………………………………………

    (b) ………………………………………………………………………………………

    (c) ………………………………………………………………………………………

    (d) ………………………………………………………………………………………

10(c) How can we enhance accommodation of students with visual impairments in your institution?

    (a) ………………………………………………………………………………………

    (b) ………………………………………………………………………………………

    (c) ………………………………………………………………………………………

    (d) ………………………………………………………………………………………

    END Thanks you very much.

APPENDIX K: QUESTIONNAIRES FOR ADMINISTRATORS

I am carrying out a study concerning the inclusion of students with visual impairments in tertiary institutions in Kenya. Therefore, I am kindly requesting for your support in the study by responding to this questionnaire frankly and honestly to enable the researcher to complete the study. The study is in partial fulfillment for the requirement of Doctor of Philosophy degree inclusive education of the University of South Africa. Your response will be treated with utmost gratitude and confidentiality.

Part A: Demographic information

1.Sex of respondent: Male [   ]   Female [   ]

2. Age bracket of the respondent

   (a) Below 21 year   [   ]
   (b) 21 -30 years   [   ]
   (c) 31 - 40 years   [   ]
   (d) 41 -50 years   [   ]
   (e) 51 years & above [   ]

3.What is your highest academic qualification

   (a) Diploma [   ]
   (b) Bachelor [   ]
   (c) Med   [   ]
   (d) PhD   [   ]
    (e)How long have been teaching in this institution?...

Section B.

Strategies and resources used to include student with visual impairments in the tertiary institutions.

   (e) What specialist equipment used in writing Braille are available in your institution for students with visual impairments?

       (a)...

(b)………………………………………………………………………………

c)………………………………………………………………………………

(d)………………………………………………………………………………

5(b) What Low vision Aids are available for students with low vision in your institution?

(a) …………………………………………………………………………

(b) …………………………………………………………………………

(c) …………………………………………………………………………

(d) …………………………………………………………………………

5(c) what are your comments about the adequacy of the specialist equipment in your institution?

(a) …………………………………………………………………………

(b) …………………………………………………………………………

(c) …………………………………………………………………………

5(d). What specialist equipment should the institution procure in order to effectively service of the students with visual impairments?

(a) …………………………………………………………………………

(b) …………………………………………………………………………

(c) …………………………………………………………………………

6 (a) What ICT equipment are available for students with Visual impairments?

(a) …………………………………………………………………………

(b) …………………………………………………………………………

(c) …………………………………………………………………………

6(b) What challenges to do students with visual impairments face in using ICT equipment?

(a) …………………………………………………………………………

(b) …………………………………………………………………………

(c) …………………………………………………………………………

6(c) Does your institution have a computer laboratory specifically for students with visual impairments?

Yes [   ]   No [   ]

6(d) if yes, what assistive technology is used to access information by students with visual impairments?

(a) ……………………………………………………………………………………
(b) ……………………………………………………………………………………
(c) ……………………………………………………………………………

7(a) Mention the specialist human resources to available to serve students with visual impairments?

(a) ……………………………………………………………………………………
(b) ……………………………………………………………………………………
(c) ……………………………………………………………………………………

8(a) What methods of teaching are used by lecturer to teach classes with students with visual impairments

(a) ……………………………………………………………………………………
(b) ……………………………………………………………………………………
(c) ……………………………………………………………………………………

8c) How do you ensure that students with visual impairments get notes for the subjects they learn in accessible format?

(a) ……………………………………………………………………………………
(b) ……………………………………………………………………………………
(c) ……………………………………………………………………………………
(d) ……………………………………………………………………………………

8(d) what other strategies do lecturers use to ensure that students with visual impairments have access to curriculum materials?

(a) …………………………………………………………………………………..
(b) …………………………………………………………………………………..

(c) ....

(d) ....

Modifications in the environment to accommodate students with visual impairments.

9(a) What modifications has been done in the physical environment to ensure that students with visual impairments are safe within the institution?

(a) ....

(b) ....

(c) ....

9(b) Mentions some of the modification that should be done in the physical environment of your institution to make it safer for students with visual impairments

(a) ....

(b) ....

(c) ....

(d) ....

9(c) What is the relationship between the students with visual impairments and the sighted peers?

....

....

9(d) What support do students with visual impairments get from their sighted peers?

(a) ....

(b) ....

(c) ....

(d) ....

Policies that support inclusion of students with visual impairments

10(a) What policies do your institution have regarding accommodation, examinations, hand out and seating arrangements for students with visual impairments?

....

....

....

10(b) What challenges to you face as a lecturer for students with visual impairments in your institution?

(a) ....

(b) ....

(c) ....

(d) ....

10(c) How can we enhance accommodation of students with visual impairments in your institution?

(a) ....

(b) ....

(c) ....

(d) ....

END Thanks you very much.

APPENDIX L: FOCUS GROUP CONSENT AND CONFIDENTIALITY AGREEMENT

I_____ grant consent/assent that the information I share during the focus group may be used by Joshua Odhiambo Adongo for research purposes. I am aware that the group discussions will be digitally recorded and grant consent/assent for these recordings, provided that my privacy will be protected. I undertake not to divulge any information that is shared in the group discussions to any person outside the group in order to maintain confidentiality.

Participant's Name (Please print): _____

Participant Signature: _____

Researcher's Name: (Please print): _____

Researcher's Signature: _____

Date: _____

If you are and adult who gives permission you **consent** then delete assent

If you are a learner who gives permission you **assent** and then delete consent

APPENDIX M: CONSENT TO PARTICIPATE IN THIS STUDY

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable).

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to the recording of the _____ (insert specific data collection method).

I have received a signed copy of the informed consent agreement.

Participant Name & Surname (please print)

_____   _____
Participant signature   Date

Researcher's Name & Surname (please print)   _____

_____   _____
Researcher's signature   Date

APPENDIX N: CERTIFICATE OF ENGLISH LANGUAGE EDITING

INF⬤RKOMM
media services

CERTIFICATE OF EDITING

This is to certify that the document submitted was successfully edited by
our editors

Name of Author: Joshua Odhiambo Adongo

Adm No: 63424932

Date Issued :   15.11.2022

Signed By:

Florence Mukiebe
Communications Director

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