PROVISION OF INFORMATION SERVICES TO THE VISUALLY IMPAIRED STUDENTS AT THIKA SCHOOL FOR THE BLIND IN KENYA

BY

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTERS OF SCIENCE IN LIBRARY AND INFORMATION STUDIES, DEPARTMENT OF LIBRARY, RECORDS MANAGEMENT, AND INFORMATION STUDIES, SCHOOL OF INFORMATION SCIENCES

MOI UNIVERSITY

ELDORET

2019

DECLARATION

DECLARATION BY THE CANDIDATE

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DEDICATION

I dedicate this work to God the Almighty, for His grace and guidance throughout the study; to my Prophet Teresa Wairimu of Faith Evangelistic Ministry, who spoke a word of hope, encouragement and faith to my heart; and to my sons, Joshua, Elisha and all my friends. Special thanks go to Hannah Rengera for upholding the vision in her prayers. Finally, I thank my nieces Judy Thumbi and Charlene Thumbi, my nephew Joshua Njoroge and my sister Teresa Mbugua for their incredible support.

ACKNOWLEDGEMENT

It is indeed a journey for academic goals. I deeply appreciate all men and women who made the completion of this study successful.

My appreciation goes to my research supervisors, Prof. Cephas Odini and Dr. Andrew Chege for their guidance and encouragement throughout the study. Their critique and invaluable input was instrumental in shaping the final document.

Sincere thanks are attributed to the Board of the Kenya National Library Services for giving me the opportunity to pursue the course and Moi University's School of Information Sciences for the diversity of lecturers who imparted so much knowledge to me.

Finally, I acknowledge my former classmates, Master of Science class of 2011 for their moral support to me.

ABSTRACT

Provision of information services enhance learning and instructional processes in schools including those of the visually impaired students. However, in most instances, the design of the subject materials and learning activities is done with normal sighted in mind. Although great improvements have been made in terms of teaching techniques and facilities, the visually impaired students still face challenges accessing the ordinary curriculum which has been further worsened by use of technology. This study sought to investigate the provision of information services to the visually impaired students at Thika School for the Blind and propose strategies that can be used to improve the services. The objectives of the study were: establish information needs for visually impaired students; identify information sources that the students consult when seeking information; determine type of special skills required by visually impaired students; to identify different activities that visually impaired students undertake while seeking information; to establish enabling and inhibiting factors for accessing information by visually impaired persons while seeking information ; and to propose strategies that can be used to enhance the provision of information services to visually impaired students at Thika School for the Blind. The study was anchored on the Moore's Model of Social Needs and Wilson's Model of Information Behaviour. The study employed both qualitatively and quantitatively approaches. Qualitative data were analysed thematically and quantitative approach data were analysed using descriptive analysis in line with the research objectives. The study population was 720 and targeted a sample size of 97 respondents. Both probabilistic and non-probalistic sampling methods were used. Random stratifies sampling was the probabilistic method used while purposive method was the non-probabilistic sampling method used. Primary data was collected using face-to-face interviews; focus-group-discussions and documentary analysis. Data analysis involved descriptive analysis and narratives. The study found that some of the information needs were met and others are not; information materials were inadequate and outdated; some of learning skills were introduced to students; activities undertaken by visually impaired students were based on academics. The study concluded that there were: activities undertaken by the students based on curriculum; all information needs sample were not fully met; information materials were inadequate and outdated; students also lack some of special skills among others. The study's recommendations included were: offering different activities; additional reading equipment; availing different sources of information; employing more professionally trained staff and broadening of information services. This is expected to impact on the information services offered to the visually impaired students at Thika School for the blind in Kenya as this is a key strategy that is part of the Kenya Vision 2030.

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LIST OF ABBREVIATIONS AND ACRONYMS

ASCII	-	American Standard Code for Information Interchange
CD	-	Compact Disc
CCTV	-	Closed-Circuit Television Camera
DVD	-	Digital Video Disk
ICT	-	Information and Communication Technology
KSB	-	Kenya Society for the Blind
NGO	-	Non-Governmental Organisation
NVDA	-	Non Visual Desktop Access
RCSB	-	The Royal Common Wealth Society for the Blind
SDI	-	Selective Dissemination of Information
WWW	-	World Wide Web
UN	-	United Nations
GOK	-	Government of Kenya

OPERATIONAL DEFINITION OF TERMS

Assistive technology - Any device used by people with disability do something that could otherwise be difficult or impossible to accomplish.

Blindness – A state in which a person cannot use their sense of sight.

Disability – One or several limitations, restrictions or impairments that have lasted or are likely to last.

Disabled – Functional limitation on physical, mental and sensory.

Information Behaviour – Activities a person may engage in when identifying his or her own needs for information, searching for such information and using or transferring information.

Information seeking behaviour - The act of actively seeking information in order to answer a specific query.

Legal blindness- The state in which individuals rely on tactile and auditory senses as their primary means of accessing information.

Low vision - Severe visual impairment, not necessarily limited to distance vision.

Partially sighted – When the level of sight loss is moderate.

Tactile – Perceptible by touch or understanding by using the sense of touch.

Talking books - Books which are recorded on the compact tape-recording cassettes, and playing back on a special designed machine.

Total blindness – A state in which a person cannot see at all.

Visual impairment- A state in which a person experiences some degree of sight loss and cannot be corrected using glasses or contact lenses.

Visually disabled – The loss or limitation of opportunity to take part in life

CHAPTER ONE: INTRODUCTION

1.1 Introduction

The blind visually impaired people should be provided with various ways of meeting their information needs as they are provided to the people with normal sight in order to partake in the information economy (Williamson and Bow, 2000).

Disability is varied in nature and therefore, it is hard to get a standard definition. However, numerous attempts have been made to define disability. According to Velleman (1990) disability refers to a limitation of function that directly occur due to impairment in one body organ or the in the body system. Barrington (2001) defines disability as defines physical, sensory or mental impairment which adversely affects the ability of an individual to undertake daily routine activities. The UN General Assembly (1994), at its 48th Session held in December 1993, defined disability as a functional restriction which occurs in any population in any nation. The Kenya Gazette Supplement (2002), the Person with Disability Bill 2002 adopts the British disability Discrimination Act 1995 which terms disability as a sensory, mental or any other form of impairment. This agrees to Raymond (2003), that disability has long term impacts on the ability of a person to conduct routine activities.

People with disability face a lot of challenges as they seek to gain their position in the modern day competitive and highly dynamic world. The mental or physical state of people with disability in a way creates a different perception of life which is likely to threaten the accepted personification of able-bodied persons (Velleman, 1990). The desired daily activities of students with disability would, among others, be to read

standard print, visually select books from library shelves, follow graphic illustration in the course of lectures and access any other information on their own.

Accessibility to varied information on different subjects gives a person a chance choose an pursue a path from the numerous available alternatives instead of being restricted to limited and possibly unfeasible and unwanted alternatives (Fullmer & Majumder, 1991). Nevertheless, not much is known regarding the wide spectrum of information requirements for the day to day life routines for the people with various impairments. Roth (1991) states possible traits and the needs of potential clients of information services focusing on the people with disability. According to her, the possible needs and requirements of people with disability includes but not limited to service information, the nature of handicapping conditions, environmental accessibility, civil rights, financial aids and advice, research and statistics, and models of service delivery. Her focus was also on the information provision by agencies.

Kenya has made great advancement in terms of information systems and has become an information society whereby information is utilised in all spheres of life. As the world becomes more sophisticated, there is greater need for information use at work places, education, and for leisure. Most importantly, there is great need for information in order to function as a social being. In such a society, inaccessibility to information leads to social exclusion. Lack of sufficient accessibility to information limits the contribution of an individual to the national good of a nation. This is because, lack of information limits the ability of an individual to make informed choices such as consumer choices. While people depend on all sensory organs to acquire information, sight is the most important:

> *It has been approximated that about 80% of the information about the immediate environment of an individual is received through sight (Willetts, 1997).The visually impaired are thus, at greatest risk of being socially excluded as a result of limited access to information.*

Libraries, due to their role in information provision and the role they play in the institutions of higher learning, should be in the forefront in the removal of all forms of barriers that hinder access to information. The study was informed by the social model by Wilson (1999) and Moore's (2000). Moore model has been endorsed by royal school for the blind. Wilson model rests on the recognition that people are disabled by social blockades such as physical, or attitudinal, or behavioural, "If no barrier exists" then a person with impairment is not prevented from using services" availability of assistive technologies such as Closed Circuit Television (CCTV), Braille embossers, Screen magnification and JAWS should have been enactment. In summary, the libraries should be equipped with facilitates that promote easy mobility and easier intellectual access for those who have visual impairment (Deines-Jones 2007).

1.2 Background to the Study

Information, as a basic need for human existence, is recognized as a vital commodity. It is undoubtedly and increasingly being recognized as a vital resource. Crawford (1978) was right when he argued that information as the fifth basic necessity fundamental needs. It is also described as an vital raw material required for right decision making and a significant resource needed for the development of a country. If information is put in effective use, it contributes to the progress of the society. It plays an important role in all spheres of many activities. The modern society depends on it for its growth and development, as well as for its survival. The importance of

information sought varies from person to person, and from discipline to discipline. In general, information seeking behaviour depends upon a person's level of education, age, subject background and nature of their job, urgency of information and availability of sources (Singh, 2009).

1.2.1 Visually Impaired Students in Kenya

In the Kamunge Report (1988), the Government of Kenya (GOK) advocated for equal existence of persons with impairments among its citizen. The Koech report (1999) gives attention to this by emphasising on the need for special education for all categories of disabled people and mode of assistance given to each group to enable them participate fully in the regular human activities with independence. It charges the National Council for Persons with Disability, as the statutory body, with the responsibility of developing policies promoting equality in this regard. This shall ensure equality in their access to information, education and employment. For visually impaired people, particularly the students, the range of reading materials offered has been restricted as well as access to information.

The GOK has not established any National Library for the blind. However, a Braille and Large Print Section which was established in 2000 at Kenya National Library Services (KNLS) are found only at the library's headquarters in Nairobi. This section is therefore not available at branch libraries. An equivalent disadvantage observed is that, none of the daily newspapers published in Kenya can be read by the visually handicapped. The Kenya Institute for the Blind, the Kenya Institute of Special Education, and the Special Education Unit in the Ministry of Education are some of the institutions established to aid the physically challenged. However, these

institutions operate independently and have no form of collaboration and co-operation in rending services to disabled persons. The book production in The Kenya Institute for the Blind, Audio Visual Unit at Kenyatta University and Kenya Institute of Special Education each operate independently in production of books for the physically challenged (Person with Disability Bill, 2002).

According to Ochoggia (2003), library and information services for the visually handicapped students in Kenyatta University, a public university with the largest number of visually handicapped students, has inadequate materials and a handful of recorded books for the physically challenged. In addition to this setback, the library staff members lack the necessary skills which are used to serve the visually handicapped students. Muya (1990) asserts that the current state of library and information services for visually handicapped in Kenya is a sad story to tell due to lack of adequate funding. However with the impending promulgation of the bill (2010), an accurate record of all institutions established with the aim of assisting this special group of people shall be maintained and it shall form the basis for cooperative activities of library and information services for the visually handicapped students.

1.2.2 Categories of Visually Impaired in Kenya

Heiman (2004) states that in Kenya, the Low Vision Project, which was established and operated by the German-based Christoffel Blinden Mission, group's students with visual impairments into five categories. The first four of these are based on the working definition of the World Health Organization and the fifth is based on the need to create a category for children attending special schools and programs who are not visually impaired but are mono eyed or wear heavy power glasses. The first

category of students with visual impairments under the Low Vision Project of Kenya (Verweyen, 2004) consists of totally blind. These refer to those who have no perception of light, who need training in orientation and mobility and who should be educated in Braille. The second category consists of those described as children with low vision which is not enough to read print. They require visual stimulation, functional vision training and/or training in visual orientation and should also be educated in Braille. Children in the third category are described as those with low vision who can be trained to use their sight for reading and writing print with the aid of optical low vision devices. This means that these children require magnification to cope with regular print. The fourth category consists of children described as those with low vision who can be educated in print using special techniques and methods without optical low vision devices to read and write regular print efficiently and fluently. Under the fifth category are children who are not low vision because their sight is above 6/18 (means the student sees at 6 metres what a person with normal vision can see at a distance of 18 meters) and they do not have a severe visual field defect. These children can almost function like normally sighted students and do not necessarily need special education as long as their sight is constant.

1.2.3 Information Providers

Information professionals and information centres provide access to essential information that people need to participate in the emerging information society. Information professionals therefore, have a moral obligation to make information available to all categories of users regardless of their gender, age, race, political affiliation or disability. Such inclusive, non-discriminatory service however still remains the ideal rather than the norm as some people remain underserved in terms of

access to information (Winnie, 1994). Among this disadvantaged group are the visually impaired. Inaccessible information is a major barrier facing blind and partially sighted people, massively restricting life chances and quality of life. All too often, relatively small adjustments can mean the difference between inclusion and exclusion. One of the most common adjustments is to provide information in accessible formats - large print, audio, Braille and on accessible website that people with sight loss RNIB (2010). According to Friend (2009), 'visually impaired' is a general term used to describe people who are partially-sighted or completely blind. According to the World Health Organization (WHO) (2009) statistics, there are about 314 million visually impaired people globally with 45 million totally blind. Of these, 87% live in developing countries. Women and people above 50 years of age are at higher risk. Although visually impaired people cannot read the conventional print, they have the right to access to information. That is, the right to read information in formats that are accessible to them. The burden is therefore on the librarians who should make information available in alternative formats, for instance, audio, Braille and large prints that can be easily accessed by the visually impaired. Due to advances in Information and Communication Technologies (ICTs), information is currently available in different formats that can be accessed through various media. Nevertheless, Friend (2009) stated that less than 5% of the information materials available to sighted library users are accessible to the visually impaired.

1.2.4 Challenges in Providing Information Services to the Visually Impaired

The real challenge in this information age is not in producing information or storing information, but it is in getting people to use information appropriately. As noted earlier, information is an indispensable raw material for right decision making and

key resource for the development of a nation. Effective and efficient utilization of information has contributed largely towards the progress and sustainable development of the society. The modern society depends on it for its growth and development, as well as for its survival. In other words, modern society is characterized by the ability to identify, interpret, produce, process, transform, disseminate, use and re-use information; to make informed choices; and to share information and knowledge through effective networking mechanisms. The ability to take part in these processes has become an even more crucial pre-condition to participate in social life, being able to use, read, understand and communicate to individual. Not being able to read or write at the same level as everybody else is a serious disadvantage in the knowledge society. The importance of making information accessible to the visually impaired people has become a priority in different sections in many countries.

The visually disadvantaged are likely not to participate as actively as they should in the development of a Community, owing this largely to their limited access to information. The products which could guarantee their access are scarcely available and very specialized. This is a contrast to the availability of a wide range of systems developed for the sighted population. The information needs of individuals with disabilities are likely to include, but not limited to service information, the nature of handicapping conditions, environmental accessibility, civil rights, financial assistance and advice, research and statistics, and service delivery models. "Recreation", includes listening to talking books supplied by organizations for the blind and sight impaired, is very important.

Everyone has a different set of strategies for searching for the information that they need for their daily livelihood. This similarly applies to the blind or visually impaired

persons. It applies to life's circumstances, which include; living alone, nurturing a family, working, unemployed, retired, the type of vision impairment or individual information-seeking preferences, influence the ways in which people seek, or incidentally acquire information. There is need to provide appropriate information facilities, materials, equipment and a cadre of trained teachers, professional and support staff to address their needs at all levels. It also makes provision for Kenyans with various disabilities and pay due attention to previously marginalized communities. The medium term priorities and policies as outlined in the main Kenya Vision 2030 blue print will be anchored on strong science and technology foundations.

The successful participation of citizens in a complex modern society depends largely on the provision and use of relevant, reliable, accurate and timely information. However, giving the complexity in the human nature, the achievement of the above realistic situation is often not feasible.

Today it is common knowledge that access to information is a prerequisite towards enlightenment and meaningful development at all levels of human endeavor. Any part of society that deny a section from enjoying the benefits accruing from access to information is likely to suffer from exclusion and decadence in this modern society which is largely controlled and driven by information.

Students who are visually challenged encounter certain constraints in accessing library and information services. This is due to the fact that most of the library collections are in standard print format. This situation presents a major access problem to visually student as they cannot read standard print format.

Therefore the situation draws the researcher to carry out a study that investigates the provision of information to the visually impaired with an aim of providing solution to access information. This is likely to achieve a state of equal opportunity for the visually disabled in accessing information as inferred by the Kenya Vision 2030, thus producing an informed society without partiality.

1.2.5 Thika School for the Blind

After the Second World War, the Royal Common Wealth Society for the Blind (RCSB) wanted to help the war veterans who developed visual impairments. The colonial government then decided to develop a legal framework that would help the RCSB to assist Kenya which led to the enactment of the Kenya Society for the Blind Act (1956) which was also to domesticate the Universal Declaration of Human Rights (UDHR 1948). There was high need to cater for the education needs of the visually challenged people, to promote their education, training, and employment provision for the blind and to assist in the prevention and alleviation of blindness. RCSB could thus forward support to the Kenyan Office which was to work with KSB to support the plight of the visually impaired in Kenya. The KSB Act was later reviewed in 1988 (KSB, 2012).

Thika School for the Blind is located about 50km North East of Nairobi. The secondary school has 600 students and a total of 120 employees, both teachers and non-teaching staff members. The students consist of either visually impaired or blind. The school is a centre of excellence – a testament to the teaching staff and thirst of the children to learn. The opportunity the school provides to the children is amazing, setting them up to function in normal jobs or further education. The school

is dependent on financial support; the more that is given in support of it, the more opportunity is given to the children in Kenya.

1.3 Statement of the Problem

Despite the right to access libraries in the Kenyan educational institutions, in most cases, learning materials are designed with normal-students in mind, every student has the right to access libraries, to attend lectures and to participate in class activities as part of their basic right. Whilst educators have vastly improved teaching techniques and facilities, it is still the problem that visually impaired students experience difficulties accessing the ordinary curriculum. The situation is made worse when technology, such as the use of the Internet, is employed (Potter, 1993).

A visually impaired individual, who cannot read Braille, usually has access to print material by traditionally using a mediator like, a family member, a friend, a designated helper, or an organization. Apart from assisted access to print material, the visually impaired have employed the use of radio, audio cassettes and telephones to gain access to information. Braille is only used among those who have been blind from a young age, nonetheless, a large proportion of the visually impaired lost their sight ability at a later stage in life, thus, their inability to use Braille as a means to access information and as a common form of communication (Williamson, *et al*, 2000). Apart from Braille there are a very limited number of items and formats which are accessible for use by the visually impaired. One of them is the reading-assistance technology equipment, a good but too costly to be obtained by the blind, libraries and other organizations. The adaptive technologies have not been introduced to meet the needs of the visually impaired. It is not a guarantee that the available converters such

as scanners, reading machines, embossers and tape recorders, convert text to be permanently recorded in the desired format (Gallimore, 1999; Long, 1993; Porter, 1997). The occasional lack of skilled and qualified staff members who would recognize the implications of visual impairment and the complexity of its impact for basic skills adversely affects the situation (Long, 1993).

Libraries have always been faced with challenges in providing information for the visually impaired. This is due to the low levels of understanding of their needs, their information seeking behaviours, illegible print formats, lack of assistive technology equipment and very minimal assistance in using audio devices. A challenge is still posed in the libraries ensuring that the Internet is accessible to people with disabilities. The challenge of providing equitable library and information services to the visually impaired requires the cooperation of all stakeholders. Governments, Counties, Educational Institutions, academic libraries, Non-Government Organizations (NGOs) and other agencies serving visually handicapped people must collaborate and play their own parts in order to achieve this noble objective.

Visually challenged students need information materials in the form of books and other no book materials to enable them accomplish their individual academic programmes. However, instructional and learning materials are mainly presented in standard print format and rarely are the information needs of visually challenged students given any consideration (Craddock and Wallace, 2001).

Therefore there was need for a study to investigate how visually impaired students in Thika School for the Blind access information that enables them to lead a normal life without being marginalized as far as information accessibility is concerned.

1.4 Aim of the Study

The aim of the study was to investigate the provision of information services to the visually impaired students at Thika School for the Blind, with the view to propose strategies for improvement.

1.5 Objectives of the Study

The objectives of the study were to:

i. Establish information needs for the visually impaired students
ii. Identify information sources that the students consult when seeking information
iii. Determine the types of special skills required to access information
iv. Identify different activities undertaken by visually impaired students while seeking for information.
v. Establish enabling and inhibiting factors for accessing information by visually impaired persons while seeking information.
vi. Propose strategies to improve information access by the visually handicapped.

1.6 Research Questions

The research addressed the following research questions in order to meet the research objectives:

i. What are the information needs of the visually impaired students in Thika School for the Blind?
ii. What information sources do they consult when seeking information?
iii. Which type of special learning skills do they require to access information?

iv. How does the visually impaired student access need information?

v. What are the factors enabling and inhibiting factors faced by visually impaired persons while seeking information?

vi. What strategies are required to improve information access by visually handicapped students at Thika School for the blind?

1.7 Significance of the Study

The study constitutes an addition to the existing body of knowledge on provision of information services to the visually impaired student in Kenya schools for the blind.

On practical solution to the enabling and inhibiting factors of services and use of information by visually impaired students in special schools in Kenya and proposes strategies to improve information access by the visually impaired.

The research will offer guidance in policy making in regards to the provision of information and help to sensitize the government and other stakeholders to establish information system that can address the issues of information provision of the visually challenged students.

1.8 Scope and Delimitations of the Study

Visually impaired student are spread all over the country. The research nonetheless only focused on the visually impaired students at Thika School for the blind. This is because Thika School for the blind is cater for by the government of Kenya and can be used to reach others of the similar kind in the entire nation.

There was a probable limited understanding and appreciation of provision of information by some participants to the research.

1.9 Chapter Summary

Chapter one highlighted the introduction of the study, background to the study, statements of the problem, aim and objectives of the study, research questions which guided the study, significant of the study in terms of theoretical, practical and policy-related, scope and delimitations of the study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews related literature and provides a broader picture of information provision and seeking behaviour with emphasis on visually impaired people. It specifically discusses a theoretical framework highlighting models and theories pertinent to this study. Literature review was done to enable the researcher get a profound insight into other studies related to the current study. In addition, it enabled the researcher to see shortcomings of various scholars who have done similar or related studies before. Literature review assisted the researcher to identify the gaps and make proposal to bridge them. The researcher reviewed information sources such as print and electronic, primary and secondary materials, published and unpublished materials.

2.2 Theoretical Framework

Sekaran (2006) states that a theory, in essence, flows logically from the documents of previous research problem. Theoretical framework discusses the interrelationships among variables that are deemed to be integral to the dynamics of situation being investigated. In this study, the researcher considered the following theories:

2.2.1 Information Foraging

Model of information foraging by Pirolli and Card's (1999) proposed that human information foragers assess the possible benefits of a source of information relative to other potential sources by use of "information scent". The forager sniffing for

information in relation to this scent may prompt the forager to pursue that source of information with a stronger scent at the expense of others. This model is useful in the understanding of information behaviours among people who are visually impaired. This is because it utilises the sense of smell as a metaphor for seeking information and people with one sense impairment may have high awareness in their other senses. However, information foraging idea founded in connection with web searching which mostly relies on sight and therefore, people with visual impairment may not have access to information foraging.

2.2.2 Moore's Model of Social Information Needs

Moore's model of social information need is mostly applied to people with visual impairment (Moore, 2002). This is because it was founded to directly address the information needs of people with visual impairments. This model was developed to offer framework that could be utilised to analyse more than 75 research reports on the information needs of people with visual impairments. The model has been applied by the Royal National Institute for the Blind to analyse information provision (Moore, 2002). Besides use for the visually impaired, this model has also been used to determine and analyse the nature and scope of the social information needs of other people.

In essence, according to Moore (2002) social information has six varied dimensions:

a) Function (the reason why information is needed)
b) Form (the kind of information needed by people)
c) Clusters (what do people need information about)
d) Agents (the people who initiate information activity)

e) Users (the differences in needs in different categories of people)

f) Mechanisms (the mechanisms utilised to meet information needs).

Moore (2002) argues that social information is needed to aid people in two key roles; that is as consumers and as citizens. According to Moore information is vital in order for people to have a profound understanding of the world in which they live . This implies that people need to acquire answers to particulars queries that bother them. However, According to Moore (2002) action is not triggered by information alone and that, in an ideal scenario; there would be a continuum of information provision that ranges from information through advice to advocacy. According to Moore's model information activity is triggered by various initiators; that is; those seeking information, those providing the required information and those who process the information. The model however has a shortcoming in his it does not identify the actual hierarchy of information needs that people with visual impairment face. The model offers key insights into the social information needs and behaviour of visually impaired people and was thus applicable in this study.

2.2.3 Wilson Model on Information Behaviour

Wilson's problem-solving perspective on information seeking is based on the premise that information seeking starts with perceived information need by the users whereby they define the need and then seek the information required to satisfy the need and get a solution to the problem. Wilson's model as shown in Figure 1 is likely to be useful and would help to create an understanding of the information behaviour of people with visual impairments. According to the Wilson's model, information need is not a primary need and that it is a secondary need that results from more basic needs. The

revised Wilson (1999) highlights the reason why some needs prompt information seeking as compared to others, why some information are utilised as compared to others, the reason why people may, or may not, pursue a goal successfully, based on their perceptions of their own efficacy.

Additionally, a number of intervening variables were identified in the Wilson's model, which may be involved in an individual's information behaviour. Wilson's revised model also acknowledges the existence of various forms of active and passive search behaviours.

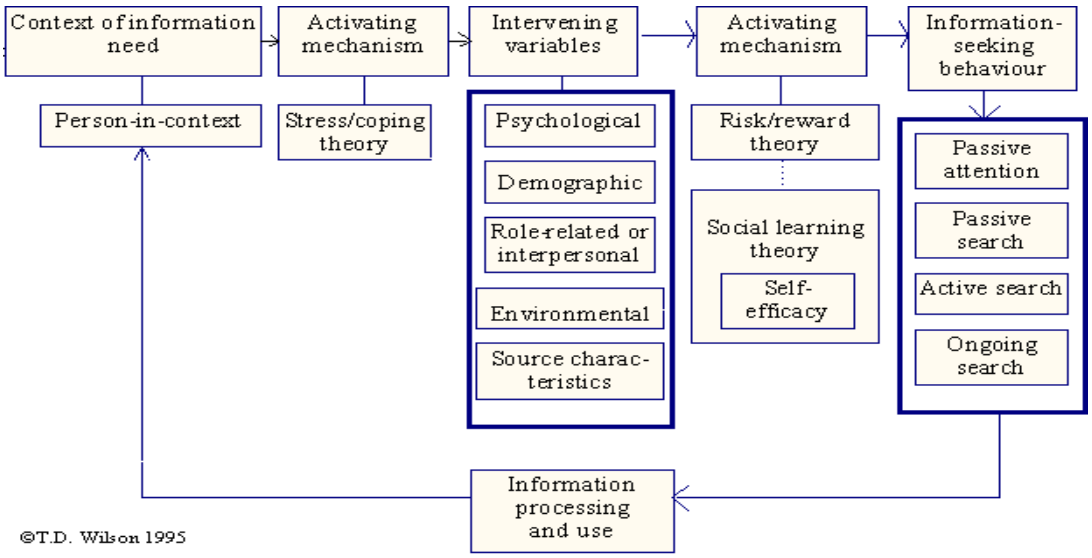


Figure 1: Wilson's Model of Information Seeking Behaviour
Source: www.information.net/tdw/publ/papers/1999/Doc.html

2.2.4 Application of the Study

The researcher deemed that Moore (2002) theory of social need and Wilson (1999) theory of information behaviour would be appropriate for the study since Moore six dimension of social information such as function, form and cluster are very useful to the visually impaired people, as they need sufficient information at critical decisions

points. This corresponds with Moore (2003) that information is necessary to support people as consumers and as citizen. The people with visual impairments, sought, processed and absorbed various information types whereby according to Moore, information alone was insufficient to trigger action but they have feelings which either limit or encourage people for keeping information pertaining to health and social care.

The Wilson theory of information behaviour was considered suitable deemed since the study can utilise a particular group of people with possibly distinctive information needs and information behaviours and also recognize that there were various forms of search behaviours.

Students with visual impairments have the information needs (context of information) to choose a path from many alternatives instead of being limited to a few perhaps unwanted or unfeasible choices (Fullmer and Majumder, 1991). Their needs are provoked by factors that can stop or support the use of information (activating mechanism), these mechanisms prompt them to seek information and integrate behavioural theories such as stress and coping theory.

Visually impaired students as they seek information are faced with barriers such as psychological due to their stigma of visual impairment, demographic of the population and characteristics of people surrounding them and their relationship with such people. Environmental factor due to location and building of the library. The type of materials both in print and none print is also a barrier to them because the products which could guarantee their access are scarcely available and very specialized. This is a contrast to the availability of a wide range of systems developed

for the sighted population (Roth, 1991) .As regards meeting their information needs, persons with visual impairment are usually faced with difficulties of using the regular information resources in form of print materials and also unable to perform the daily task or activity of reading standard print materials (Atkinson and Dhiensa, 2007). Mandesi (2007) argues that faced with impairments are faced with a lot of challenges which limits their accessibility to opportunities in their daily life. This is even worsened by the negative perceptions towards people with disabilities persons which cause social alienation and other problems that are difficult to cope with. He further insists that, for people with disabilities to be treated equally, physical barriers to accessing resources need to be removed and attitudes towards them be changed. Hence, meeting their information needs should be given adequate attention.

They always activate mechanism of risk of cost and experience as they anticipate the benefits with the information they get though they may get challenges ahead of them but complete a task successfully (self efficacy). They continue with information seeking behaviour by passive attention where they listen and get information. For them to proceed with search using other sources of information and become active and develop ongoing search to information there is need for intervention to develop strategies to support them in their effort to seek information for their studies and future life.

2.3 A Review of Related Literature

A review in literature related to the study was as follows:

2.3.1 Needs of Visually Impaired Students

Choukhande (2008) states that the information need is a factual situation in which, there exists an inseparable interaction with information and need. Information originated because there exist a need or interest. The need of information with specific information is an objective demand of the user. The visually impaired students require the following needs:

2.3.1.1 Evaluation Need of Visually Impaired

It is vital to undertake an evaluation of the needs of students with disability before the initial provision of special education and other services. This should be done with various special evaluation tools and techniques to ensure the assessment is effective. The purpose of this assessment is to collect relevant information pertaining to the students. This includes the details given by the parents and guardians and the content of the student which includes the extent of the student's involvement and the progress in the general curriculum to partake in appropriate activities (Beverley, et.al. 2004).

An evaluation of the vision status of a student usually includes the nature and the extent of the visual impairment as well as how this condition affects the student. The assessment of the impact includes the impact on the ability of the student to read, write, and do computations as well as on the ability to utilise computer system and other assistive technologies. Therefore the students with visual impairments will be able to get the necessary skills that would enable access ad utilise information (Verweyen, 2004).

2.3.1.2 Instruction in Braille and the Use of Braille

According to Kiuhu (2007) a key issue of concern to parents of children with visual impairments is that the number of students instructed with use of Braille has in recent decades been adopted to provide to students for whom it may be suitable. The use of Braille for reading and writing has been very effective for many blind students and for those with visual impairments. In the case of blind students and the visually impairment students, the use of Braille has been very effective for instruction, reading and writing and should be done by highly trained and knowledgeable in order to enable them access and utilise information.

2.3.1.3 Assistive Technology Devices Need for Access to Information

There is need for students with visual impairments to be provided with assistive technology including personal computers with speech output in order to help them get accessibility to information and as a supplement to instruction in the reading method deemed appropriate for the students. These skills that would enable them access information include the use of cassette recordings such as the use of compressed speech, personal computers with speech output or a Braille display, and optical scanners with speech output. These devices supplement print or large print for children who use print as their main means of reading (Sorenson, 1999).

2.3.1.4 Orientation and Mobility Needs

Curry (1997) argues that the students with visual impairment, lack of the ability to independently move around cab be a major blockade to their ability to take part in the different activities in school, family functions, and in their communities. It is thus

crucial to offer the visually impaired students the orientation and mobility skills which are very vital to the independence of the blind and those with visual impairments.

The people in charge of offering the orientation and mobility services should be well trained and should have a great of knowledge with high qualification standards. There is a need for students to move safely in school and lack of adequate skills in this area would adversely affect the ability of the blind students and those who are visually impaired to travel training means providing instruction, as suitable to help them to be well aware of the environment in which they live and to learn the skills that would enable them to move safely and effectively in different places within their environment.

2.3.1.5 Educational Instruction and Learning

UNESCO (1995) states that the degree of vision loss of a visually impaired student is crucial in determining the medium of reading and writing. Students who are blind and those with only light perception will only use the tactile mode as their medium of reading and writing, this means that they would use Braille. They would also use functional print such as reading notices written in big prints. Children with reduced degree of vision but who possess adequate functional vision may use print but with modifications such as low vision devices and environmental adaptations and modifications to enhance their visual functioning capacity.

2.3.1.6 Communication Devices

Hanninen (1975) states that learners require communication devices such as Braille. Learners with visual impairment can use finger tips to feel the way the dots are arranged and read them using the following devices to communicate:

i) **Slate and stylus** - used for taking notes and doing other work when the Braille is not available.

ii) **Tape recorder** –it help the student to record classroom work activities such as lectures, discussion and assignments, they also tape their verbal responses to assignment, examinations and continues assessment to be marked by teachers who do not know how to read Braille.

iii) **Typewriters** –assist learners with visual impairments to communicate in the classroom through typing academic activities.

iv) **Computers –** they type their work and store for future use and also used for voice synthesizers

2.3.2 Information Source

Singh (2009) asserts that information sources differ among the users based on availability and convenience. The user population love different types of information sources depending on the desired need and purpose. Socially, culturally and technologically, human beings and organizations alike regularly need information so as to manage daily life operations. They are classified into the following Print and Non-print formats.

2.3.2.1 Print Information Sources

These are printed materials which include:

2.3.2.1.1 Braille

The invention of Braille system occurred in 1829 by Lois Braille, a Frenchman who developed blindness due to injuries at a younger age. The Braille is a method in which text is transcribed to enable the reader to read through touching and raised dots to represent characters (Massis, 1996). According to Hampshire (1981), Braille has emerged as an effective communication medium for the blind people and those with severe visual impairments for over a century. Today, this system has been developed and can be used in all main languages across the world. Furthermore, there is a special Braille code systems that can be used to carry out mathematical computations, to read scientific symbols, phonetics and other numerous special symbolic systems.

2.3.2.1.2 Large Print Books

Large print materials are those which have enlarging existing print. This is done by numerous photocopying machines which are now available. They produce a good quality readable and straight forward. The use of large print by people with visual impairments for reading and writing has been encouraged greatly. The blind people have the most need for this provision, those with partial sight have only relatively recently been recognized as a category tar requires specialised aid. These materials which are becoming increasingly available are very useful to partially sighted people. Large prints include fiction and non-fiction titles (Deaton, 1993).

2.3.2.2 Non Print Sources of Information

Non-print materials are quickly becoming important information and learning resource materials which can be used by the visually impaired persons. They include:

2.3.2.2.1 Audio Books

The audiovisual materials are means of presenting information to students with visual impairments without the need paper and pencil. These devices are suitable as they take learning away from a textbook-only approach. They make classes enjoyable for the students when the instructors utilises music, films, and photographs for instruction purposes.

Currently the use of films in classroom teaching us very common mostky through the use of DVD players. In most instances, there is no need for a separate player as the modern day computer systems have in built DVD readers and players. The use of a computer to play DVDs involves the use of a projector, but most classrooms are equipped with the modern and highly developed audiovisual technologies and equipment (Brandon, 1999).

2.3.2.2.2 Cassettes and Tapes Recorders

Tape recordings have emerged as key methods of information recording and storage and are highly used by students with visual impairments. The use of cassette tapes is indeed much common as compared to the use of Braille and has become a key source of information (Bruce and others, 1991). According to Cole and Cheeseman (1998), the people with visual impairments have a strong desire for taped information. Similarly Deaton (1993) established that tapes are the most suitable communication methods for people with visual impairments.

2.3.2.2.3 Talking Books as Source of Information

Only a few people with visual impairment can effectively use Braille. For the majority of people who cannot sufficiently read and write, the use of talking books is particularly crucial especially to the people who are totally blind. Talking books were originated by Royal National Institution for the Blind (RNIB, 1998). The books are recorded on the compact tape-recording cassettes, and playing back on a special designed machine.

The talking book machine is simple to use, having only three switches:

i) On/off

ii) Volume control

iii) Track change

Headphones, which are very useful, are supplied for the blind people who want to hear and not to deafen their companions. There are over a thousand titles of talking books which cover wide range of subjects (Royal National institute for the blind, 1998).

2.3.2.2.4 Internet

The great benefits of information in the web sources lie in the transmission capability and the fact that the information is digital in nature and the output can be obtained in various forms. In case of visually impaired individuals, the invention of the Kurzweil machine was a huge progress on the normal Braille and magnifying technologies. The most radical change was yet to come with the current extensive use of ICT. The

computer systems other peripherals help people with visual challenges to easily convert print information to electronic format for it to be easily read on the screen and by use of either transitory Braille or by synthetic speech. For individuals with some residual sight, a screen ICT can be used different converters such as scanners, reading machines, embossers, and tape recorders to enable the recorded text to be can be recorded permanently in the needed format (Porter, 1997).

The huge accessibility to the internet has open up a large number of websites to adaptive technologies which makes the websites more friendly to the people with visual impairments.

i) **Magnification** programs magnify text or images in a manner that enable people with low eyesight to view them well. Synthetic speech systems have a synthesiser that speaks and a screen reader which directs the synthesizer what to speak (American Federation for the blind, 2013).

ii) **Braille printers** are used for the visually challenged individuals who can utilise Braille. They are used to produce hard copies and can do so from different computers. various computer systems. Other Braille Display technology enables the transportation of the information shown on the computer display to be moved to the Braille. For these devices to function, they rise and lower various combinations of pins electronically to produce the information shown on the computer display. They can be easily refreshed which implies that changes occur continuously as the user navigates around the screen (American Foundation for the blind, 2000).

The Internet, has promoted the accessibility of information to people with visual challenges (Gallimore, 1999). The equality of access to information for the people with visual challenges was increasingly improved with the invention of the computer system.

2.3.2.2.5 Telephone

The telephone presents an effective mode of communicating with the people with visual challenges. The telephones helps to eliminate geographical barriers and enable the people with visual challenges to communicate irrespective of the distance (Bruce et al, 1991). The telephone enables them to connect with friends and family members thus helping to enhance their social life (Manthorp, 1996). According to Masey (1997), the telephone is a powerful communication tool than other means such as the audio recorded and print material (Masey, 1997).The telephone-based transaction services are adequately supported to help students with visual challenges to utilise them fully (Gallimore, 1999).

2.3.2.2.6 Broadcast Media

Broadcast media has been the most effective means of communication since late 21st century. For instance, the radio has been very useful to people with visual impairment (Deaton, 1993). The broadcast media is useful due to its ability to direct particular information to a specific audience with specific information needs especially the people with visual challenges. Rather, the broadcast is among the basic channels that the visually challenged people can use to scan the information environment. The radio and the television are powerful because the visually

challenged people can get lot of information by just listening. Therefore, they are vital means of enabling the people with visual impairments to keep in touch with what happens in the society. With the introduction of digital television, the disadvantaged people such as those with visual impairments can get news from a large number of channels (Spink, 2004).

2.3.2.2.7 Personal Contact

There are different ways in which people can find the information they need for their day to day lives. The visually impaired people who live with other people get great assistance including being their sources of information. They get a great deal of information they need from family and friends. It also seems that community information seeking, generally involves regular use of friends and family members (Chen & Hernon, 1982).

2.3.3 Special Learning Skills for the Visually Impaired

Most visually impaired individuals can move independently by use of various methods. Orientation and mobility specialists are highly skilled and they train the visually impaired people how to move with ease in various environments. These individuals also assists the people with visual challenges how to move on particular routes which they mostly use such as roués from one house to another. Familiarisation with the environments and the different routes mostly used makes it easier for the visually challenged individuals to move easily and successfully to accomplish various activities (Walsh, 2006).

2.3.3.1 Mobility Skills

Mobility is perhaps the most important new skill that a blind person can acquire. This are the guide line visually impaired require for them to use the devices. For example they should be given a white cane to carry it with them when re-entering into crowded streets or when closing busy roads. They should be instructed not to poke, stab or wave it about, but carry it on their arm as a symbol of handicap. For those whose sight is very poor or absence, mobility training is needed (Desta, 1995). Mobility can also be enhanced using various tools such as the white cane with a red tip which is used internationally as a symbol for blindness. The touch sensation range can be extended by use of a long cane. However, the method for cane travel changes based on the user and the circumstances. Some people with visual impairments do not use these canes and they prefer to use the shorter and lighter identification canes. In some cases, a support cane is required (Cheseman, 1998).

2.3.3.2 Reading of Embossed Writing

Another skill for the blind person to learn is the reading of embossed writing such as Braille or moon. Braille is the most versatile of the system. Its major disadvantage is that it is bulkier and needs a special printing press to produce. Someone who can teach the embossed scripts has to be employed. Braille's are valuable aids to independent learning; they enable the blind person to read books, magazine, journals and reference books (Kengrey, 2002).

2.3.3.3 Tough Typing

Hampshire (1981) states that tough typing is another aid to independent learning for the blind. This is because the typewriter forms letters, spaces them, types in a straight

line and can be used to warn the typist of the approach of the end of line. The blind and sighted are taught to touch the typed materials, as this is the best method of corresponding with sighted person. A standard typewriter is normally used, though Braille scale can be attached for professional use.

2.3.3.4 Sighted Guiding

At times it is crucial for the people with the ability to see to offer guidance and aid to viaualy impaired people. There are also those who usually travel alone or with guide dog but would sometimes need further help from the sighted people. The following should always be borne in mind when offering help to someone visually impaired as observed by (Machell, 1996):

i) Individuals with a white cane are not necessary completely blind. A large number fo them have good vision but even the people with partial sight may require assistance particularly in unfamiliar paces and at night.

ii) The people bearing a white cane a red band could have both visual and hearing challenges.

iii) It is vital always inquire from the people with visual impairment whether they need help as some of them may not be in need of assistance or they may need independence.

iv) It is always crucial to announce your name when communicating with people with visual impairment.

2.3.3.5 Computer Skills

The invention of computers highly improved communication and information sharing. There are special keyboards with technology patterned keys which allows for information to be typed with high accuracy. There are also new programmes converts speech to written text. There are also Braille embossing printers that are used by the visually impaired individuals to print instead of using the normal printers (Hampshire, 1981).

2.3.3.6 Low Vision Aids Devices

Optical low vision devices incorporate the use of a lens or combination of lenses which in most cases are used to provide some form of magnification. They are placed between the eyes and object to facilitate seeing. Magnification makes the image appear bigger and thus enhances visibility (Klemz, 1977). Optical low vision devices are of two types:

A) Optical Devices for Near Tasks

These include:

Hand held magnifiers -They are convex lenses mounted in such fashion that may be hand held, usually designed with handle. The lens is placed as close as possible to the eye in order to get a large field of view.

i) **Stand magnifier -**This is a plus lens, or lens combined, mounted in a housing the base of which sits on the material to be viewed.

ii) **Spectacle mounted magnifier**- these are convex reading lens mounted in standard full diameter or half eye frame or attached to the frame.

B) Optical devices for far distance

They include:

i) **Handheld telescopes –** They used for observing or tracking object at distance, the view bring it to the eye for the widest field of view.

ii) **Spectacle mounted telescopes** – these are telescopes mounted on spectacle frames. They free the viewer's hand to perform other tasks (Kenya institute of special education, 2010).

2.3.3.7 Sensory Aids

Walsh (2006) asserts that sensory aids convert information normally received by one sense into a format that can be easily received by anther sense. Regarding the people with visual challenges, they usually have more controlled use, they allow accessibility to printed matters and through the environment. The Sensory aids are grouped as follows:

i) **Closed-Circuit Television (CCVT) System**. This system is flexible in a manner that provides the optimum print form in terms of magnification, illumination, and contrast.

ii) **Direct-access reading machines** – These materials have the ability to read written and printed material and then converts it to a format which can be easily perceived by the visually impaired individual when displayed..

2.3.3.8 Other Daily Equipment

Various equipments can help the people with visual challenges in their day to day lives visual impairment in their daily lives such as talking watches, writing aids, clocks, medicines dispensers among others (Chrishigh, 2012).

2.3.4 Activities Undertaken by Visually Impaired Students

Curry and Hatlen (1987) states that visually impaired students deserve the same instruction in reading, attending class, doing class exercises, class projects, doing experiments etc. They also have additional different activities other than learning. Their activities include:

2.3.4.1 Doing Experiments in Science Subjects

(i) Physical Science

Wagner (1995) states that physical sciences can be made accessible to visually impaired students through different innovative ways. For instance, tactile scale can be used by the visually challenged students to practice measuring objects. This is where in photocopy sections, a meter scale is measured onto transparencies, cut and pasted onto the sections into a meter long scale, and staple or glue is used to emboss each centimetre marking.

(ii) Chemical Science

Wohler's (1994) states that students with visual impairments can be accommodated in chemical science in different ways. For instance, Computer interfaced instrumentation tools can be used in chemical laboratories for mass-volume measurements. They have audio calculators that can be used to handle computations and they use the sense of smell to identify specific non-hazardous chemicals.

(iii) Biology Science

The blind students and those who have visual impairment have similar needs for fundamental life science instruction that children with normal sight do. Tactile modifications of preserved specimens and humanely prepared living organisms such as live Cray fish carefully placed over their pincers form excellent hands-on specimens in biology for the students (Malone & DeLucchi, 1979).

(iv) Laboratory experiments and demonstration

Wexler (1961) states that the text books can be brailed, which needs very little editing except for the diagrams and certain notations. Successful participation by blind student in physical, chemistry and biology has been adopted to make science laboratory experiences accessible to the sensory perceptions of the blind by:

i) Embossed diagrams and 3- dimensional models can be used

ii) Apparatus can be edified (modified so that its measurements can be heard rather than seen)

iii) Electronic light probes can be used for exploring parts inaccessible to fingers

(v) Math activities

A host of mathematics activities can be used to assist the blind students and those with visual impairments to understand mathematical concepts. The different methods coupled with touch and audio systems can be used effectively to help the students learn mathematical concepts. Since people with visual impairment cannot read papers, a device called a Cranmer abacus is used. The students are taught basic facts just like

those who can read before they are introduced to addition and subtraction. They are also trained on how o use talking calculators for calculations (Kenya Institute of special education, 2007).

(vi) Doing tests

Kumar (2003) asserts that visually impaired people sit for the same exam as normal sighted people but for them they are not given drawings and maps interpretation. Instead, they are given extra questions to cover for that section. Their exams are transcribed to Braille for them to do but again translated back to normal writing, mixed with other copies and marked without bias.

2.3.4.2 Physical Education & Sports

The importance of physical education, fitness, and exercise is important to the well-being of people with visual impairments, Blind students joined up with ordinary students, however different abilities, should try to learn different fields of sports (Curry and Hatlen, 1987). These include:

(i) Indoors games activities

There are varieties of indoor games equipment designed to be used by the blind. The games can be used by sighted; playing cards are available, with symbols in Braille or moon superimposed upon standard playing cards. Dominoes, droughts chess and scrabble are among the games visually enjoyed (Bruce et al, 1991).

(ii) Outdoor games activities

Fullmer and Majumber (1991) notes that blind and partially sighted people participate in sports such as swimming, snow and skiing. Some sports have been invented or adapted for the blind such as goal ball, association football, cricket, golf, and tennis. The worldwide authority on sports for the blind is the International Blind Sports Federation. The equipment and rules have to be modified. Judo, wrestling and swimming can be done by the blind on some terms as sighted opponents.

2.3.4.3 Field Work Activities

Several useful domestic skills can reach the status of a hobby, visually handicapped with useful sight remaining can continue as before, provided that they take or use their sight constructively. Those who are totally blind can perform useful activities around the house and garden such as cooking and cleaning (Pinion, 1990).

2.3.5 Factors Enabling and Inhibiting Visually Impaired Students while Seeking Information

The visually impaired students face several inhibiting factors that make them prone to powerlessness and inability to participate in decision making and development programmes that affect them and their fundamental rights. They are faced by the following challenges:

2.3.5.1 Finances

Lack of sufficient funds makes it hard for provide the grade level text books and leisure reading materials required. The maintenance of the Braille machines also becomes hard due to insufficient funds. Lack of enough funds also makes hard to

purchase the basic specialized equipments together with the teaching and learning materials that are adapted to meet the needs of visually impaired students (Gargiulo, 2003).

2.3.5.2 Collection

Students with visual impairments also face challenges in the area of adaptations of materials. Some subjects taught in secondary school such as biological sciences, home science, geography, and mathematics, have syllabi that are adapted for the visually impaired students whereby more manageable psychomotor activities replace the complex ones (Waihenya, 2000). However, the syllabi mostly utilised in general lessons lack accommodations in terms of adapted activities for visually impaired students.

2.3.5.3 Inadequate Human Resources

Inadequate trained and skilled personnel for visually impaired students poses a challenge to efficient service delivery to the people with visual problems (Karugu, 1994). In a study undertaken by Kenya Institute of Special Education in 1989 the findings showed that about 50% of teachers in charge of visually impaired students were not well trained on how to communicate with them. While it has been over two decades since then, there is dire need for trained and experienced professionals who would effectively handle the visually impaired students.

2.3.5.4 Technology

Sorenson (1999) states that one of the greatest challenges is to select the technology that will provide information to people with disability as great range of information

in print and other media. He further states that this equipment used by visually impaired persons should be available, simple to use, cost effective and durable.

The blind people have challenges pertaining to technology as well. For instance, it is impossible for a blind person to read information on web sources. For one to search information on the internet screen reading is a must and people with visual impairments therefore cannot see websites with ease and those who are blind cannot totally read the web content. Special equipment is needed for those with low vision. Such equipment enlarges the screen and the fonts significantly to enable the readers to read easily. Other technologies such as audio players that need visual music and text selection are also hard to be used by the visually challenged people and the bind. The computer systems that are currently used do not have adaptive software and hardware which could make it easier for the visually challenged people access information from the web sources, Braille and large print.

2.3.5.5 Difficulty in Navigating Environment

Blind people and those with visual impairments usually have difficulties in self-navigating outside well-known environments (Alicia, 2005). In fact, physical movement is among the greatest difficulties faced by the visually challenged people. Walking and travelling particularly in crowded streets is a major challenge for these people. Also, it is vital for the visually impaired individuals to well learn every detail about the home environment. It is vital to put large obstacles such as seats and tables in one location to prevent them from injuring the visually impaired individuals. It is the responsibility of the people who live with the visually impaired people to ensure that walk ways are clear wit all items kept in designated places.

2.3.5.6 Social Isolation

Blindness causes considerable social challenges, usually in relation to the activities in which a blind person cannot participate. Blindness may also cause difficulties as they participate in activities outside of a workplace, such as sports and academics. Many of these social challenges limit a blind person's ability to meet people and access to information (World Health Organization, 2006).

2.3.5.7 Access to Documents

According to Cherono (2003), converting information to media that are viable for the visually disadvantaged is still considered a marginal activity in comparison with mainstream editing for the sighted population. Additionally, the existing resources for making such conversions are slow, complex, costly and traditionally independent from the initial process of document creation.

2.3.5.8 Professionalism

The obvious place to start is in the Library for the Blind, examining all procedures and positions. There should be an overall plan gradually to fill the positions by highly-skilled professionals as all procedures are made service-oriented and efficient. This basis for strong and professional profiling is necessary when moving to the next step, which consists of ensuring that special-format material is treated on equal terms with all other material. This implies that special-format material is available (Desta, 1995).

2.3.5.9 Copyright Act

The Copyright Act has complicated legislation. In the interest of the visually impaired students, the copyright legislation requires special-format material to be reproduced

when permissions are granted. Without the permissions this Act is then violated, due to the fact that the exemptions section does not include reproducing material for the visually impaired. These have made library service unable to provide information materials needed for blind.

2.3.5.10 National Information Policies

The information needs of all print-handicapped persons should be covered by National Information Policies (NIP). Unfortunately, this is not the case. Consequently there is also a great need for the library services providers to draw attention to the information needs and rights of all people (Devlieger, 1989).

2.3.6 Additional Methods of Providing Information for the Visually Impaired

The following are the proposal to improve the provision of services to the visually impaired. They include:

2.3.6.1 Establishment of Special Libraries for the Visually Impaired

Special libraries should be developed and be made accessible to all blind and visually impaired persons. Savolainen (1995) supports this fact when she states that "providing information is a powerful tool for economic empowerment of people with disability."

2.3.6.2 Improved ICT

People are becoming more reliant on the Internet for dissemination of information. The Internet was mostly a text-based medium easily adopted by screen reader software (Chong, 2002). The software is designed to read the text on a webpage and provide an auditory response which is synthesized to the users. The visually impaired could surf the web as easily as anyone (Edwards and Lewis, 2002). Some of the

recommendations that can increase accessibility to information for the visually impaired:

i) Screen reader software searches a web page for American Standard code for information interchange (ASCII) text. This character encodes computers and other digital devices used to communicate with each other.

ii) Graphic objects should all be labelled with a hyper text mark up language so that the graphic can easily be identified. Most visually impaired users navigate a page by jumping link to link using the tab button.

iii) Java applet, Java/Script and plug-in all restrict access to the blind users surfing with the screen reader. This type of access tool should be avoided but if required the designer should look for alternative ways accessing them.

iv) Avoid using frames in the design, for visually impaired frames can be disorienting and hard to manoeuvre.

By employing this user centred methods of design, internet and technology can overcome all limitation faced by visually impaired. Just through the interaction and instruction from their computer, the blind will navigate and move throughout the world as easily as a sighted person (Walsh, 2006).

2.3.6.3 Installation of Assistive Technologies for Information Provision

It is only possible for blind or visually impaired people to gain access to information provided through the WWW because of the availability of technologies which enlarge text or convert the information to audible or tactile media. The following presents a

brief outline of the technologies most frequently used, either for computer or other electronic access, or for computer use in conjunction with the Internet:

i) **Magnification** - programs for the computer screen allow people with some vision to view text or images which have been magnified several times and are capable of integrating hardware and software. Synthetic speech systems comprise of a synthesizer, which does the speaking, and the screen reader, which tells the synthesizer what to say (Royal institute for the Blind, 1998).

ii) **Screen reader** - is the commonly-used name for Voice Output Technology. Hardware and software produce synthesized voice output for text displayed on the computer screen, as well as for keystrokes entered on the keyboard (Adaptive Technology Resource Centre, 2000).

iii) **Optical character recognition** - OCR technology consists of three possible processes: scanning, recognition and reading text. A printed document is scanned by a camera. OCR software then converts the images into recognized characters and words. The synthesizer in the OCR system then speaks the recognized text. Finally, the information is stored in an electronic form, either in a personal computer or in the memory of the OCR system itself (American Foundation for the Blind, 2000).

iv) **Braille printers** - are available for those who can read Braille. These produce a hard copy and can do so from various computer devices. Other Braille Display technologies allow what is displayed on the computer screen to be transposed into Braille. These devices operate by rising and lowering different combinations of pins electronically to produce what appears on a portion of the computer screen (American Foundation for the blind, 2000).

2.3.6.4 Adequate collection for visually impaired

A variety of resources that provide information and materials access to persons with visually challenge should be available. Some of disability materials are non-fiction, references, periodical, and audio visual large prints, catalogues, and brochure materials. All can be expanded to increase access for this population. A large number of private and public agencies produce materials that are available free of charge to persons who are challenged as observed by (Tom and Lori, 2004). It is essential that patrons are able to access catalogues independently. Differently formatted catalogues that would allow information access and would provoke a substantial change in the visually impaired environment are, Braille catalogues, audio catalogues, macro print catalogues and Online catalogues with voiced responses (Nicholas, 2006).

2.3.6.5 Sufficient Specialist Staff

There should be sufficient staff on the establishment with special responsibility for services to visually impaired people, to ensure that services operate effectively. They should undergo basic training in visually disabled awareness and instructions in appropriate skills, through in-service programme which preferably involves local visually impaired people in the training process (Morris, 1978). All equipments, apart from the simplest low vision aids, require training in their operation if they have to be used effectively. The specialist will need to become proficient in using them and will need to train these groups of users.

2.3.6.6 Cooperation among Private Organizations

As proposed by Walsh (2006), this is where the authority can approach broadcasts such as television and radio to offer free daily reading of newspapers and other

materials for visually impaired persons and also organizations such as religious organizations to provide print recorded and brailed materials.

2.3.6.7 Operational Strategies

Some of these strategies include material adapted to Braille format, audio and digital formats for use for cultural education and training of users. Other strategies include the establishment if a central material supplier service; the cost of appropriate technology to be used by the visually impaired handicapped makes it necessary to think about the creation adapted material to supply the different services. IFLA (1999) highly recommended workshops and regular courses, other matters of interest, and technological resources for users.

2.3.6.8 Reading Aids

All visually impaired users should have reasonable access to a comprehensive aids and other equipment which will enable them to fully access the information both on print and media collections in all alternative formats, as observed by Machell (1996). Magnification and transcription equipment that enables visually student's access resources should be provided. There should be enough effort to avoid refereeing people with visual impairments to other agencies in the pursuit of an enquiry. This will enable the visually impaired people to read appointment letters, prescriptions and other writings and signs (Kuhlthau, 1991).

2.3.6.9 Integration

The equality of access concept also offers for the integration with main stream services. The visually impaired are not different but equal to the sighted. With

equivalent access to services, they are disadvantaged not by their disability but by lack of measures which compensate their disability (McQuail, 1994).

2.4 Chapter Summary

The chapter has reviewed literature related to the provision of information to the visually impaired. It explored the models that addressed information seeking behaviours and described social information needs. The study applied Wilson's Model on Information Seeking Behaviour and Moore's Model of Social Information Needs. Although literature has been carried out no adequate research has been conducted on the provision of information services to people with visual impairment to bridge the gap. The study cited literature authored earlier due to their relevance and comprehensiveness. However, current literature on information provision for the visually impaired is not adequately available.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This study adopted a case study research method to get detailed information on the provision of of information to visually impaired students. Also enabled the researcher to probe deeper into participants insight, thereby eliciting data, that otherwise would not have been readily available. Busha and Harter (1980) observed that case studies approach allows a concentrated focus on a single phenomena and the utilization of a wide array of data-gathering methods. The researcher collected data through interviews, focus group discussion and documentary review for visually impaired students.

3.2 Research Approach

This research was mainly qualitative in nature with some aspect of quantitative technique. Qualitative approach was preferred because it made it possible to explore and understand people's beliefs, experiences, attitudes, behaviour and interactions which are faced by impaired students. The data was collected through face-to-face interviews, focus group discussions and documentary analysis. Ghauri and Gronloug (2005) argues that most qualitative studies focus on unearthing in-depth information about the subject matter under investigation. Creswell (2007) States those Qualitative research techniques such as individual in-depth interviews were used to find out more about views and experiences of visually impaired persons as they access information.

3.3 Research Design

The nature of research determines the method to be used in collecting and analysing the data. Anderson (1998) asserts that there are two main research paradigms which

can be used by researchers to carry out their research – qualitative and quantitative research. He defines qualitative research as form of inquiry that explores phenomena in their natural settings and use multi-methods to interpret, understand and bring meaning to them. Quantitative research on the other hand, focuses on measuring and testing relationships between variables systematically and statistically.

The researcher employed a case study design. Punch (2008) States that case study reinforces the advantages of providing a means of covering the problem in detail at accepted cost. Garuri and Gronloug (2005), noted that, a case study is an in-depth investigation of an individual, group, institution or phenomenon. Case studies are, however, said to be time consuming and may occasionally produce massive quantities of data that are difficult to summarise. To overcome this difficulty, the study focused only on assessing the provision of information to the visually impaired. The overall purpose of case study was to obtain detailed and comprehensive information the provision of information services to visually impaired students.

3.4 Population of the study

The study population at the time of study was 720, comprising 600 students, 60 teachers, and 60 non-teaching staff. The student population constituted partially and totally blind students. The key informants included librarian, teachers and head of academic affairs.

Table 1: Sampling Frame of the Study Population

Description type	Total Population
Students	600
Teachers	60
Non-teaching staff	60
Total	**720**

3.4.1 Study Sample Size

This study targeted a sample size of 97 respondents for study. The researcher applied Yamane (1967) formula to calculate the sample sizes. A 90% confidence level and 10% was the level of precision which is sometimes called sampling error. The formula used was:

$$n = \frac{N}{1+N(e)^2} \quad N$$

Where **n** was the sample size, **N** was the population size, and **e** was the level of precision. The researcher added 10% to the sample size was predetermined or decided after failing to contact some responded.

3.5 Sampling Methods and Techniques

Qualitative procedure was applied by the researcher during the study. Qualitative techniques was used because it produce sample that are predominantly small and non-random because it emphasis on in-depth description of participants perspectives (Oso and Onen, 2005).

3.5.1 Sampling Method

Both probability sampling and non-probability sampling were used. Probability sampling was applied to both partially and totally blind students while non-probability was applied to the key informants who added and confirm the situation at hand (Kothari, 2004).

3.5.2 Sampling Techniques

The study employed purposive sampling methods or judgmental sampling to select the key informants to participate in the study and stratified random sampling for students, this allowed the selection of a sample or use cases which are believed to provide the data the researcher needs to reach the targeted sample quickly (Fraenkel and Wallen, 1993).

3.5.3 Sampling Procedure

The study employed stratified random sampling method to select eighty eight (88) students. They were stratified from form 1-4 class each with 11 students (44 partially blind and 44 totally blind) into various strata depending on their conditions. Payne (1990) argues that stratification involves the ordering into distinct groups or strata. The stratification facilitated data collections in a systematic way bearing in mind the different conditions and diverse work activities which require different type of skills, information and knowledge. The study also purposively selected nine (9) key informants who comprised six (6) teachers- (two (2) humanities, two (2) social sciences, and two (2) physical science teachers); the head of academic affairs; and two (2) librarians who were interviewed. Since this is a homogenous group sharing a common thing of not seeing to give information rich cases related to their provision of information.

3.6 Data Collection Methods

In view of the nature of this study, data collected using face-to-face interviews, focus group discussion, as well as documentary review. These methods, which are

complimentary, believed to give comprehensive and reliable data. As discussed below:

3.6.1 Interviews

The researcher administered oral interview, since communities traditionally communicate by word of mouth rather than in written form. The approach and use of oral communication gave respondents a chance to state their problems the way they perceive them, participate in seeking solutions to these problems. Slate (1990) opines that if one needs to go deeply and in details into the experience and reactions of respondents, one would do better research by using interviews. An interview schedule was semi-structured consisting of open ended questions. The semi-structured questions encourage interviewees to discuss issues more openly and exhaustively. The interview schedules were used as guides during the interviews and to standardize the interview situation such that the same questions were asked by the interview in the same manner.

Prior arrangements were made with the teachers, librarian, and head of academic affairs for interview appointments. During the booking of the interview the researcher's task was to inform the participants about the objectives and the subject of the study. The researcher recorded the respondent's answers on paper (interview schedule) as participants were responding to the questions being asked. Each interview session lasted between fifteen (15) to twenty (20) minutes. The interview method offered the opportunity to establish report with the participant, especially the reluctant ones. This was in order to skilfully get the answers by meeting expectations as required and in-depth information about the study. This is where an increased

interest was revealed by the respondent. Using this approach, satisfying and complete responses were obtained. Supplementary information that was not included in the interview but relevant to the study was also found.

3.6.2 Focus-Group Discussion

This is a special type of group in terms of its purpose, size, composition and procedures. It is usually composed of 6-8 individuals who share certain characteristics (Punch, 1998). This method was preferred because the researcher was able to work with several people simultaneously rather than just one. It also brought to the surface aspects of a situation which would not otherwise be exposed. The researcher carefully planned and designed interview schedule using structured and semi structured questions to obtain information from the participants. Also the interaction of the participant helped the researcher ensure that all issues relating to the chosen topic were covered hence provided the boundaries of the study. The researcher stratified randomly 88 students into 8 groups. The 4 groups of 11 each were partially impaired and the other 4 groups were totally blind with each 11 students. The researcher kept the discussion on the focus and the information provided by respondent was recorded.

3.6.3 Documentary Review

The researcher consulted various documented source of information as a supplementary method that was used to confirm or verify some of the data collected. Slate (1990) argues that in qualitative research, one should not neglect existing available materials. Documents and records, published and unpublished can be subjected to content analysis. In between the appointments, the researcher spent time in the institution reviewing documents which were relevant to the study. These

documents included reports, quarterly review news, and brochures and published materials by Thika School for the Blind (in house publication). Reviews of the document were generally found to be useful for gathering information relevant to the study and gaining insights into the provision of information for visually impaired which was not forthcoming from some participants due to factors beyond control.

3.7 Data Collection Instruments

The researcher employed the following data collection instruments in the study:

3.7.1 Interview Schedule

Interview schedule was one of the main data collection tools the researcher applied in accessing people's perceptions, meanings, and definitions of situations and constructions of the reality. The researcher conducted interviews with the key informants who are believed to have in-depth information.

3.7.2 Focus-Group Guide

The researcher stratified group of the students who were partially blind and totally blind into a group. The researcher collected in-depth data expressed in respondents own words and reactions, which was normally difficult to obtain using other methods.

3.7.3 Documentation Analysis

The researcher used two approaches on provision of information for visually impaired in Thika School for the blind. These approaches involved collection of primary and secondary data which are published, unpublished, periodicals, electronic and others. It was difficult to classify these data in ways that were consistent with the study at hand, but the researcher was able to do it step by step as instructed by the supervisors.

3.8 Validity and Reliability of Data Collection Instruments

Validity and reliability are the key indicators for the quality of the measuring instruments. The researcher ascertained to whether the data collection instrument are consistent and accurate (Nuguti, 2010).

3.8.1 Validity of the Data Collection Instruments

According to Mugenda and Mugenda (1999), validity is the accuracy and meaningfulness of inferences, which are based on the research result. A research instrument is regarded valid when it can measure what it is intended to measure. To ensure validity of the research instrument, the research gave the focus group schedule to the experts to examine independence for contended construction and face validity. Their suggestions and recommendation were used to improve research instrument.

3.8.2 Reliability of the Data Collection Instruments

Sermaran (2006) refers to reliability as a measure of the degree to which a research instruments yield consistent results or data after repeated trials. Reliability was ensured through formulating a research design that was efficient and appropriate, a pilot study was carried out whereby the researcher used students for focus group discussion to check for any inconsistency, ambiguity and clarity of questions and also the language used.

3.8.3 Pre-testing Data Collection Instruments

A pre-testing was done on five (5) participants, 4 students and a teacher, with similar characteristics as the selected sample. The purpose of pre- testing the instrument was to ensure that the items in the instruments are stated clearly and have same meaning to all

participants (Collis, 2003). The research instrument was pretested before the main study to ascertain the following:

a) Assess whether the instruments were clear

b) Gauge whether participant gave same answers for the same questions

c) Assess time taken to conduct interview

d) Look out for the item that confused the respondents

e) Ensure that questions are not offensive or intimidating

f) Spelling mistakes

g) Any grammatical error

h) Adequacy of recording space

Information obtained during pretesting was used to revise the instruments before the main study.

3.9 Data Presentation, Analysis and Interpretation

Data analysis was done with objectives and research questions of the study in mind. It was done qualitatively and quantatively. Qualitative data was analyzed by content analysis which is defined as any technique for making inferences by objectives and systematically identifying specific characteristics of messages (Holsti, 1978). Data was coded, put into theme categories which were frequently used by participants. It was then analysed and presented using tables to display information.

Data sheet summaries of the data were prepared. Slate (1990), in support of this, observes that to detect trends and patterns in case of unstructured interview material, constructive of interview summary for each respondent, systematically and categorizing the content is useful. Analysis was further enhanced by use of tables and percentages.

3.10 Ethical Considerations

The study observed confidentiality for all participants during the time of study and the resources available was exhausted to ensure collection of accurate and authentic data and that participants were not embarrassed or ridiculed during the study.

The researcher gave credit, appreciated, respected, recognized and acknowledged other authors works to avoid lifting, plagiarism and any falsification and formal request.

3.10 Chapter Summary

Chapter three highlighted the research design of the study; it described the population and sampling procedures that were used. Data methods used in this study were interviews, focus groups and documentary review which were focused with the area of study. The study used interview schedule focus group guide as instrument for data collection. The pilot study was carried out before the actual study to check the consistency and actuality of the data. Ethical consideration was followed throughout the study to maintain the confidentiality of the respondent during and after the study.

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This study sought to investigate provision of information to visually impaired students at Thika School for the blind in Kenya. Presentation of the finding was organized according to the objectives that were formulated in chapter one of this study. Data collected through interviews and FGDs was analyzed using content analysis technique, data was coded, put into theme categories and tallied in terms of the number of times it occurred. It was then analysed and presented using descriptive statistics in the form of frequencies and percentages.

Table 2: Distribution of Respondents by Categories and Students (N = 97)

Categories	**Class/key informant**	**Targeted population**	**Actual No interviewed**	**%**
Totally blind students	Form 1	11	9	81.8
	Form 2	11	8	72.7
	Form 3	11	6	54.5
	Form 4	11	7	63.6
Partially blind Students	Form 1	11	8	72.7
	Form 2	11	9	81.8
	Form 3	11	8	72.7
	Form 4	11	9	81.8
Key informants	Humanity teachers	2	1	50
	Social science	2	2	100
	Academic affairs	1	1	100
	Librarian	2	2	100
	Physical science	2	1	50
Overall response		**97**	**71**	**73**

The population of the study comprised of students who are partially blind and totally blind. The population was homogenous with similar conditions. In addition, the principal, head of academic affairs and teachers for various disciplines were included as informants. Table 1 shows the distribution of the respondents by category and class/key informants.

4.2 Information Needs

The study sought to find out the students information need.

Table 3: Response regarding Information Needs (n=71)

Information Needs	No of respondents	%
Evaluation needs	51	72
How to use Braille	52	73
Assistive devices	52	73
Orientation & mobility	53	75
Tape recorder	27	38
Type writers	27	38

The study shows that 51 (72%) of students stated that their needs were evaluated on admission, 52 (73%) of them said they were trained on how to use Braille, 52 (73%) were oriented on how to use assistive devices, 53 (75%) were trained on orientation and mobility. However training on use of recorders and type writers were not available to most participants whereby the students participated stated that they were inadequate and others are broken. In addition, the participant stated they were trained on how to use assistive devices at home by parents and others trained by their friends as it recorded 52(73%) The table indicates that only 27 (38%) on each of them were trained. This corresponds with Heineman (1975) that students requires tape recorders

to record classroom work activities such as lectures, discussion and assignments, they can also tape their verbal responses to assignment, examinations and continues assessment to be marked by teachers who do not know how to read Braille.

The key informants said that they give priority to the above four needs and they were also inadequate as per students population, and for the broken ones repair has not been done due to inadequate finances they receive from the government. One of the teacher interviewed stated that:

> *We would rather not repair the broken typewriters and tape records because the grant we receive from the government and well wishers cannot cater for the repair, so we normally feed the students first.*

4.3 Library Services

The study sought to establish the library services offered to the student and whether the services meet their expectations.

Table 4: Library Services Accessed at Your School (n=71)

Library Services	**No of respondents**	**%**
Borrowing services	55	77
Selective dissemination of information	7	10
Reference services	10	14
Reading assistance	47	66
Library Orientation	44	62
Motivational speakers	16	22
Debates or discussion of given topic	22	31
Clubs	12	17

The study established that the students usually access borrowing services of print resources such as large print books for the syllabus but they are inadequate for them. The participants stated they are assisted in reading by sighted students and others do not 47(66%) one student in discussion group complained that:

> *There are some sighted students that are very negative to us when you ask for help – it's like you are disturbing them. But some are positive and helpful and when you ask for help, you get assistance*.

The students are taken through library orientation only the first day they arrive at school but the librarian stated that they do not arrive at the same time due to their conditions. These appear to be the core functions of the library.

The offering of other services were low as 7(10%) stated they have SDI services but could not mention any, it was affirmed by librarian that she do not undertake selective dissemination of information, apart from 10(14%) who stated they access reference services, others stated they do not because the materials are in print form and become difficult especially for the totally blind to access them. Also the partially blind students could not access them fully for some require magnifying glasses. This was observed by the researcher that totally blind could not access the reference materials. On the other hand few of the participants recorded that clubs are available in schools and that the school invites motivational speakers. The researcher confirmed from one of the teacher that clubs and motivational speakers are not available in school.

The key informants affirmed that they have never organised other services for the students and they only have reference materials in form of print which are not accessible by blind students. According to world health organisation (2000) state that

although visually impaired people cannot read the conventional print, they have the right to access to information. That is, the right to read information in formats that are accessible to them.

4.4 Information Sources and Support Equipment

The study investigated whether Thika School for the blind stock relevant reading materials for their students.

Table 5: Response Regarding Information Sources and Support Equipment (n=71)

Sources of Information	**No. of respondents on (Utilize)**	%	**No. of respondents on (Do not utilize)**	**%**
Print	59	83	12	17
Non-Print	10	14	61	86
Educational material	55	77	23	13
Informational materials	58	82	13	18
Recreational	53	75	18	25
Supported Equipment	17	24	54	76

As shown in table 4, the participant reported that the information materials available are print resources such as Braille, large print, text books for syllabus, journals, magazines though some are outdated and the currents ones are inadequate to cater for all students. They further indicated that syllabus book in Braille are in bulk but they cannot get the complete copy for next set. Consequently, as a result of inadequate incomplete copies, students have to share what is available. Sometimes they have to

move the next class without having some part of Braille which has hampered their studies. The participant interviewed further stated that they have no non-print resources apart from cassettes and do not have enough players for them. Cole and Cheeseman (1998) state that there is quite a strong desire for taped information among visually impaired students. Similarly Deaton (1993) found that visually impaired students require tapes because they were the most popular medium of sourcing for information. Rea Maglajlic and David Brandon (1999) also found that students were quite keen on taped information. One of the students in group discussion said:

> **……** *tapes are good - you can run them back and forth.*

The researcher also noted only encyclopaedia and dictionary are available in Braille form and totally blind could not access them.

The findings of the study show that the citizen and members of the family have negative attitudes assisting the visually impaired which directly cause them to be social exclusion, another student with visual impairments complained:

> *My family said [that] I have already died because I'm visually impaired and [that] I can't do anything, but after my struggle and performing well in my studies ... they started realizing that I can do something and be helpful to the family.*

The key informants further stated that the little grants they receive from the government and well wishes is not adequate to purchase enough books for all students. This is with conformity with Muya (1990) that the current state of library and information services for visually handicapped in Kenya is a sad story to tell due

to lack of adequate funding. However they strongly felt that the information materials are educational, informational and recreational and of great help to them.

4.4.1 Support Equipment

The study also established that the students have support equipment such as Braille machines, few magnifying glasses and tactile. The participant indicated that the Braille machines are inadequate, broken and they have only a few diagrams for tactile worse still, the school has inadequate reading equipment such as embossed Braille machine, Computers, tape recorder, magnifier and sensory aids. However, there is one Television and a Radio for learning. These are also inadequate for the whole school. The libraries would need to stock more large print books as well as audio-cassettes and on a wider range of subjects if they were to encourage greater use by the visually students (Chartres, 1998).

4.5 Types of Special Learning Skills

The study sought to establish whether the students require special learning skills.

Table 6: Responses regarding the Learning Skills (n=71)

Learning Skills	**No. of respondents (Skilled)**	**%**	**No. of respondents (not skilled)**	**%**
Mobility skills	53	75	18	25
Reading Embossed writing Braille	50	70	21	30
Tough typing	22	31	49	69
Sighted guiding	50	70	21	30
Computers	23	32	48	68
Low Vision aids devices	26	41	45	59
Sensory aids	21	29	50	70
Internet	20	28	51	72

The study revealed that the special skills of the students such as mobility 53 (75%), reading embossed writings of Braille 50(70%), sighted guiding 50 (70%) were carried

out immediately one reports to school. However, majority of the students stated that they were not trained on how to use low and high vision Aids devices, Sensory Aids, computers and the Internet. This was affirmed by Masey (1997) that there are several ways of providing information to newly visually impaired people. There is a need for easy access to a number of different media which allows informed choice about the information required by each individual. In additional with personal computers and peripherals like, visually impaired people can easily convert print into electronic text and read it from the screen with either transitory Braille or through synthetic speech. If the reader has some residual sight, a screen ICT has also made it possible to link different converters such as scanners, reading machines, embossers, and tape recorders so that a converted text can be permanently recorded in the desired format (Gallimore, 1999).One student stated that:

> *Am now in form three but I have never being taught how to use a computer and my friends who are blind like me has been taught at Machakos School for the blind*

The key in formants stated that slow paced learners are sent to Machakos School for the blind for further training because they lack skills to help them become more efficient. These special skills help the students to search for information, know their school compound, and become effective in reading in Braille, tough typing and access internet for additional knowledge.

4.6 Activities Undertaken by the Visually Impaired Students

Table 7: Responses Regarding Academic Activities by Visually Impaired Students (n=71)

	Students Activities			
Academic Activity	**No. of respondents on students (who participate)**	**%**	**No. respondents on students (who do not participate)**	**%**
Attending Class	64	100	0	0
Doing Class assignment	64	100	0	0
Reading	64	100	0	0
Class Project	64	100	0	0
Doing tests	64	100	0	0
Doing Examinations	64	100	0	0
Doing Lab Experiments	34	53.1	30	46.9
Doing Field work	34	53.1	30	46.9

The study revealed that all students attend classes, do class work, read, perform class projects, do tests and examinations. However only 34 (53.1%) specifically the partially blind do laboratory experiments and field work. The totally blind student which consisted of 30 (46.9%) stated that they do not do laboratory experiments and field work. These were because they are not able to manipulate the specimens, chemicals and apparatus because they are dangerous to be handled without sight. Field work requires observations which are done through sight. Hence they cannot participate but this can be done as tactile modifications of preserved specimens and humanely prepared living organisms (for example live Cray fish with rubber tubing's carefully placed over their pincers) form excellent hands-on specimens in biology for the students (Malone and DeLucchi, 1979).

It was further emphasized by the 7 key informants that mixing of chemicals by the totally blind is hazardous to them.Visually impaired students in Thika use the library mainly for educational purposes. This finding agrees with the report of IFLA (2005), which states that students with visual impairment need the provision of learning resources and environment in library to support their process of their education.

4.6.1 Co-curriculum Activities

Table 8: Responses Regarding Co-Curriculum Activities (n=71)

Co- Curriculum Activity	No. of respondents on (Participate)	(%)	No. of respondent on (Do not participate)	(%)
Playing cards	3	4	61	96
Drought chess	13	18	58	82
Scrabble	24	34	47	66
Table tennis	12	17	59	83
Swimming	20	28	51	72
Athletic	44	62	27	38
Cricket	13	18	58	82
Golf	13	18	51	82

From the findings shown on table 7 the students indicated that they do not participate much in co-curriculum activities: both indoor and outdoor games. However the students' population that participated in athletics was relatively high at 44 (62%).The high participation in athletics according to the students participated were because they have an adapted field and efficient trainers. The researcher confirmed that the field was adopted according to their standard. The key informants stated that a well wisher visited the school and volunteered to rectify the field for the students at his own cost.

This has facilitated the impaired student participate in games as opposed to sighted ones (Thika School for Blind, 2009).

A low participation in playing cards, drought chess, table tennis, cricket and golf as explained by the students is because the equipment required for these activities such as tennis ball, cricket and golf need to be adapted to have some sound which helps the blind students to locate them but those playing cards and drought chess had residue sight.

The key informants emphases that the student participate in athletics because they have adapted the field but low participation in playing cards, drought chess, table tennis, cricket and golf is because they do not have equipment required for such activities. Fullmer and Majumber (1991) affirm that according to International Blind Sports Federation, the equipment and rules have to be modified. Judo, wrestling and swimming can be done by the blind on some terms as sighted opponents.

4.7 Enabling & Inhabiting Factors for Accessing and Using Library Resources

The study attempted to establish enabling & inhabiting factors for the accessing Library resources.

Table 9: Inhabiting Factors in Accessing and Using Library Resources

Library Use	Strongly agree	Agree	Undecided	Disagree	Strongly Disagree
Inadequate library orientation	13	11	8	16	16
Inadequate library materials	18	9	13	10	14
Inadequate reading equipment	11	14	6	16	17
Inadequate reading support	9	11	11	15	18
Lack of technology	11	14	9	16	14
Inadequate personnel	17	13	16	9	9
Lack of professionalism	11	12	10	13	18

Common inhabiting factors were identified and the students were asked to confirm on a scale of strongly agree, agree, undecided, disagree or strongly disagree. From Table 8 it was found that an average 13(20%) of the participant strongly agree, 12 (19%) stated that they face most of the challenges that were identified. On the other hand 14 (21%) disagree, 14 (21%) strongly disagree and 11 (17%) remained undecided on whether they were facing such challenges in accessing and making use of the library.

The participant stated specific challenges which relate to the access and use of library resources as stipulated as summarized in the table above and discussed in the subsequent paragraphs.

4.7.1 Absence of Library Orientation Programs

The study revealed that the students were not oriented as they join the school, so that they are conversant with how library provide them with services, its layout, the time they should visit, benefit of the library and also being made aware of rules and regulations of the library.

The key informant said that students are admitted at different times. They have to wait for a certain number of new students to be admitted in order to organise for orientation since they do not report the same day.

4.7.2 Insufficient Library Materials

The study found that both print and non-print materials available in the Library are inadequate. The available Braille's were bulky and students were forced to share those books in group of five. This was a challenge because and sometimes they will have discontinuity of information since they do not get the next copy. There was only one non-print format of cassettes but with outdated information. The key informants agreed with the students little grant they receive were not enough to purchase enough materials for the students. Also they said that the donations of the materials they get are outdated.

4.7.3 Inadequate Reading Equipment

The school has inadequate, Braille machine printers, stylus, slate, magnifying glasses, talking books, CDS, DVDs, tape recorder which were of benefit to student as they carry out daily activities. According to key informants the student's population was higher than the available equipment in the school.

4.7.4 Lack of Technology

The students stated that the school has no computers; they do not have connectivity for them to access the internet and interact with others in the world. The technology can make them aware of the trends in the world and give them other sources of information. The key informants revealed that they have received donation of computers which were not synthesized with VDU for the voice and they were to plan on how to start computer classes with the incoming form ones.

4.7.5 Inadequate Personnel

The study established that the school was in dire need of science teachers and an additional librarian. The school had only two science teachers who were not able to cope with the whole school since these students require a lot of attention. The science teachers assist in selecting science books for the relevant subjects. The books must be adapted to have embossed diagrams. Since they were few they were not able to cope with the task.

The study noted that students who are blind need a lot of assistance to be competent in science subjects. The school has only one Librarian who could not cope with provision of information services.

4.7.6 Inadequate Library Space

It was observed that the library does not have enough space and it was difficult for the librarian to shelves all the books, these hindered the organisation of materials in the right order. It was further noted that there was no space for new materials and students could not do their studies in the library.

4.8 Proposed Strategies to Improve Provision of Information Services to Visually Impaired

The study sought to find out from the participant their proposed strategies to improve information service provision. Some of the proposed strategies recommended by the students are discussed hereafter.

4.8.1 Proper Library Orientation

The participant proposed for prompt and proper planning of library orientation soon after they gain enrolment in the school. This would enable them access information independently and be familiar with the layout of the library and its procedures. Information on the hours of library operation and type of resources, their importance and benefits should be made known to students to enable them access and utilize the resources effectively.

4.8.2 Increase Information Materials

The participant proposed that the Government of Kenya (GOK) reduce the cost of materials for the disadvantaged groups like the visually impaired persons so that more books for their needs are procured. They further proposed the institution to seek assistance from donors and well-wishers. It was suggested that requests be made to book publishers to provide books in Braille format in electronic format.

4.8.3 Alternative Reading Equipment

Considering the high cost of these materials, it was suggested that the school proposes to the GOK to automate their information resources for easier access. Most participants still felt the need that the school should solicit for financial support for

this cause from well-wishers in order to supplement the grants they receive from GOK.

4.8.4 Information Communication Technology

The participant suggested that the computer lessons be introduced at primary and secondary levels and that they should be considered as mandatory in all schools. They also suggested that free Internet facilities be installed and accessed at minimal or no cost. The participants prefer to be equipped with few computers equipped with assertive technology which they can share rather than several computers not equipped with the technology.

4.8.5 Increase Human Resource Capacity

The participant unanimously retorted that the school does not have enough science teachers and suggested for an increase for their employment by the GOK. Another suggestion was that the institution should seek extra labour to cope up with the work. They suggested those teachers can be approached for internship programs and others the retired ones who can volunteer their services to disadvantaged groups. The science teachers assist in selecting science books for the relevant subjects. The books must be adapted to have embossed diagrams. Since they were few they were not able to cope with the task, therefore resulted in limited scientific information in the library. If the number of science teachers are increased they can offer individual attention to students to help them in challenging scientific tasks, they can help them to complete the syllabus on time. This could encourage Students can opt for science subjects

4.8.6 Expansion of Library

The students acknowledged the significance of the Library to them despite its small size. They suggested that the computer room which is currently empty be stocked with reading materials for first and second form students so that the main library is left with reading materials for third and fourth form students. Outdated materials can be weeded to create more space. The Library needs to automate its services whereby when a student reach a particular section the computer sensitizes him or her. Sections can also have embossed labels of the different subjects. The walking space need to be made wide for easy mobility. This can be achieved by the school seeking support in providing resources from religious organization and private organization.

4.9 Chapter Summary

Appropriate data were collected through face-to-face interviews, focus group discussion and documentary review. Data was gathered on the academic/learning activities carried out by students, sources of information consulted, information needs for the students, the types of special skills required, and challenges faced while seeking information and strategies to improve the provision. The findings provided a true picture of provision of information to the visually impaired students.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the main findings of the study. The summary is provided in reference to the aim, objectives, and research questions of the study. The research findings are briefly discussed to offer overview of the major revelations. Conclusions and recommendations of the study are also presented in this chapter as well as suggestions for further research.

5.2 Summary of the findings

The study set out to investigate provision of information services to visually impaired students at The Thika School for the Blind. The findings of the study are summarized below:

5.2.1 Information Needs for Students

The study revealed that the students' most common needs were related to academic issues, with the most pressing being where to find relevant sources of information for assignments. For all visually impaired students, time was a critical problem. Once received, an assignment had first to be read to them by a volunteer or a teacher. Only after the students understood what the assignment required of them could they approach the library to start finding the relevant sources of information. The end result was a backlog of assignments and missed deadlines.

All students are taken through instruction to Braille and its uses, which requires fast learners. However, the slow paced learners are usually sent to Machakos School for the Blind to receive further instructions which make them prolong time in school as

opposed to sighted ones. Those with low vision use magnifying glasses for reading. It was established that needs requiring communication devices such as slate, stylus, tape recorders and computers with assistive technology, typewriters are not met within the school.

5.2.2 Information Sources

The study showed that the print resources available in the school include textbooks for the school's syllabus, journals and periodicals, reference materials such as encyclopaedia and dictionaries. The reference materials are all in Braille and can only be used by totally Blind students. It was established that the library is equipped with text books and Braille. Students admitted that a book used for the syllabus is shared among five students. The science, language and Kiswahili subjects solely rely on the teachers' input due to the lack of textbooks. Non-print resources are in Braille, tactile (bones, diagrams) forms, talking books only in CD form. The students specified that they are educational, recreational and informational, but inadequate. From the findings of the study, equipment such as computers, CCTV, audio players were inadequate. For instance there was only one CCTV available in the school. The equipment supporting the library service such as Braille machines for typing, tactile only for diagram and specimen, computers and CDs are not enough. The study also revealed that the library does not have talking books and no computers for the Blind during the time of study. Nevertheless there is anticipation in receiving computers for the blind with Voice in VDA program which could help only the students in the first and second form.

The study found that the totally blind students do not search for information independently. They require assistance from the sighted students when reading newspapers, revision books and when they are in unfamiliar places such as outside the school. They are not skilled enough to access information. On the other hand partially blind students search for information more independently using the library books; searching and browsing using the computers. They occasionally ask for assistance from teachers.

5.2.3 Type of special Learning skills

It was found out that the students receive orientation on how to read Braille and white cane at Kenya Society for the Blind (KSB) two months before they join high school. However on arrival the totally blind students learn how to read Braille, primary environment skills but if during evaluation the students are identified as slow paced learners, they are referred to Machakos School for the Blind for further instructions. These skills have assisted students in reading the Braille books, in being familiar with school environment and their social interaction with other students and teachers. The students were able to get the same information like sighted, develop their career, and adapt to new technology.

However the students need to learn skills in using computers and browsing the Internet for the purpose of academic and social interaction. Other skills required were playing musical instruments, wildlife club activities, and playing goal ball.

5.2.4 Activities Undertaken by Visually Impaired Students

The study established that academic or learning activities are undertaken by both partially and totally blind students at the school in attending classes, doing class

exercise, reading, doing test, and examinations. However, laboratory and agriculture lessons are meant for the totally blind students who carry out experiments. For instance, they do field work and study biology using tactile diagrams which were available in the school. The totally blind students take cookery or knitting classes which were optional for the partially blind. It was also revealed that as a class project, the totally blind students usually conduct presentations while the partially blind ones do it practically. Also, the totally blind students do not participate in indoor games such as card games, drought chess and scrabble. Neither do they participate in outdoor games such as table tennis, swimming, cricket, golf but they however take part in athletics.

5.2.5 Challenges Faced in Accessing Information Materials in the Library

It was established that some of the students do not receive orientation on how to access the information materials, thus always being dependent on the librarian. The students cited the inadequacy of materials and equipment such as reading assistance like NVDA Internet software. It was stated that study space in the library is not enough. The students, in particular, the girls, do not have enough time to visit the library and it is not acceptable for them to study together with boys under no supervision of the teacher. The students train themselves with the help of others as a result of a lack of proper library orientation program to familiarize themselves with skills in searching for information. The totally blind students require the help from the sighted students in reading print materials.

5.2.6 Proposed Measures to Help Alleviate the Challenges

It was proposed that proper library orientation program be developed and adopted by the school to benefit the new students as they join the school. The library's hours of operation should also be increased with the assistance of the teachers. The school should source for additional science teachers who can volunteer. Also a qualified librarian trained in special education that would be equipped in serving the students better. The school should also purchase more books covering the syllabus and equipment such as victor readers, printers and computers. Other sources of acquisition would be by approaching the donors as well as well-wishers by the school. Another suggestion was to make a proposal to the GOK to reduce the cost of materials and equipment for disadvantaged groups which include the blind. They could also seek assistance from non-governmental and charitable organizations. A proposal that the books be made available in electronic form. This would also reduce the bulk and save on space.

5.3 Conclusions

Based on the study's findings, the following conclusions were drawn. The students undertake different activities in school. However the totally blind ones who do adopted biology; home science and agriculture do not have adequate materials for these activities, such as tactile diagram, skeletons. The Students do not participate in co-curriculum activities apart from athletics. It was established that not all information needs were met which have been hindering effective studies. The students get skilled in using the Braille and other devices during their studies. However they struggle searching for assistance and using communication devices which are of importance to them. The school has a Library with information materials which are

informative, educational and recreational but these materials are inadequate and outdated. The students have not been trained to retrieve information and the librarian in charge does not have professional qualifications in Library Science or Special Education. There was no library program available for the students who would motivate them in different fields like politics and various club activities.

The school has print resources which were inadequate and for non-print resources they have only CDs encoded with information which was not current. The students cannot search information independently and especially the totally blind. They require assistance of the sighted people as they seek information.

The study found out that the students lack skills in computers and internet. Also program for leisure such as, goal ball, music and wildlife club which are educational are not available.

5.4 Recommendations

The study recommends the following to improve the provision of information services to the visually impaired students at Thika School for the Blind.

5.4.1 Diversity of Activities that can be Undertaken by Visually Impaired Student at Thika School for the Blind

The study recommends that the school adds three dimensional models; apparatus to be modified, electronic light probe to be used for exploring parts inaccessible to fingers, skeleton, pictures which shall be useful to the totally blind students. On the other hand adapted physical education and sports should be considered as part of their co-curricular for their well being. Indoor games such as playing cards with symbols in

Braille or moon should be introduced to them (Bruce, 2001). The outdoor games such as swimming, snow and skiing, goal ball, cricket, tennis and rules need to be modified to nurture their talents and reduce monotony from normal curriculum.

5.4.2 Additional Reading Equipment for Visually Impaired Students

The study found that the school emphasizes only on evaluation needs, instruction to Braille and orientation and mobility. The students have need. Assertive devices including personal computers with speech output to access to information. Furthermore communication devices such as slate and stylus can be used for taking notes, when Braille's are not available. Additional tape recorders may assist students to record lectures, discussion and do their assignments. They can also tape their verbal responses to assignment, examination and continuous assessments to be marked by teachers. Computers can be used for voice synthesizers.

5.4.3 Broadening of Information Services

The school has established library but it has limited services. The study recommends the introduction of other library services such as Selective Dissemination of Information (SDI), reading assistance, and increased library orientation programs for new students.

The study further revealed the need for library to come up with programs such as, motivational talks by inviting motivational speakers to give talks to the current trends, debates or discussions on topics affecting their day to day lives. In additional there is need to form clubs in the school with the aim of identifying and using students talents. All these are supposed to encourage this group of students as well as develop a sense of belonging to the society.

5.4.4 Lending out Some of Specialised Information Resources

The study found out that the print resources which were available are inadequate. Materials in Braille are available in bulk of volumes but students are given in groups of five and are not guaranteed getting the next set. Consequently the students experience discontinuity in learning. The study recommends that the school introduces a program where the students are provided with the resource for a specific period such that when they return the resource, they are given to the next group.

Non-print resources have become important and they should be properly utilized by visually impaired students. These materials include audiovisuals; teachers can use films, and music to bring content to life. Recently DVDs are used to project a given topic in the classes offered. Talking books will be useful for the totally blind. They would enjoy listening to the audio information. These machines are simply designed only with three switches thus, on/off, volume control and track change which they can operate easily.

The school should make a formal request for increased funds from the GOK in order to purchase enough books for the students since these are special groups. They should also seek for permission to be exempted by Copyright Act so that they could freely reproduce special-format material from original printed versions. This would make library to provide information services materials that are required for the blind. In addition the school should have a budget allocated for Library's needs from the grant they receive from GOK. Also, the concerned authority can source the materials from publishers, non-governmental organisation, religious groups and well-wishers to increase the stock. The outdated and irrelevant materials should be weeded to create

space for new materials. It is also proposed that the school can convert one class to a storage space for the library materials that are less frequently used. Equally important is for the school management to approach donors and well wishers to digitize information material that are only available in print.

5.4.5 Specialised Equipment for Visually Impaired Students

The study recommends for additional support equipment in the library such as more Braille machine, talking books recorded, more tactile, computer for the blind, magnifying glasses and stylus, embossed Braille machine, Computers, tape recorders and sensory aids among others which are currently inadequate. It must be further emphasized that the school makes equipment such as magnifying glasses, slates and stylus, white canes to be compulsory for students to use while the rest could be procured.

The study further proposes networking of the Library for easy access to the internet and vas resources. With the advancement in ICT technologies, this would benefit the visually impaired by converting the print. The visually impaired students require specialized software programs installed for them to access information on the web, for instance, it requires screen reading software to read the information on a website, students with limited vision require special equipment that significantly enlarges the screen, access online information in voice, Braille and large print. They can also adopt broadcasting media such as radio, television, which will help them in keeping in touch with current global happenings and trends.

5.4.6 Recruitment of Staff with Special Skills

The study recommends that the school should request for qualified personnel with special skills to teach those students with visual impairments. They would train them on how to move safely, confidently, and independently within school and the community. This would provide an environment whereby the students are trained on the special skills, properly oriented and taught how to play games. The study also recommends further training on tough typing, computer use; low vision aids devices and sensory aids which would benefit the students.

5.4.7 Strategies to Improve Provision of Information Services to the Visually Impaired Students

The study recommends the following strategies to improve provision of information to visually impaired students.

5.4.7.1 Proper Library Orientation

Mobility training would be needed as stated by Desta (1995). Library orientation should be carried out for the form one students immediately report to school. They should be made aware of the resources available them, the layout of the library, and how materials are arranged. Students should be introduced to different access points available and how to search and retrieve information materials independently. This in long term is expected to reduce the time taken by the students using the Library. The school also need to prepare a program for students to visit library regularly and a teacher need to be assigned to them every evening for proper utilization of library services.

5.4.7.2 Increase information materials

The study recommends the school to do the following:

5.4.7.2.1 Budget Allocation and Donations

The school, in all circumstances, should make budget allocation of part of the grant from the government to the Library as a high priority. The school should also seek support from both local and international NGOs to improve the services. The may be monetary or non-monetary.

5.4.7.2.2 Cooperation with Private and Public Organizations

The school through the relevant authority should approach broadcasters to offer free daily reading of newspapers and other materials to the visually impaired. Organizations can also offer to print Braille materials or digitize the materials for them.

5.4.7.2.3 Unity of Organizations

All the bodies in charge of virtually impaired should work in consultation with another for the benefit of the visually impaired students dream. These bodies includes: Kenya Institute of the Blind, Kenya Institute of Special Education and ministry of education who currently work as single entity yet they are set to assist people with disability.

5.4.7.2.4 Integration

Visually impaired are not different, they are the same as other people, with equivalent provision of services, they are disadvantaged not by their disability but by lack of

measures which compensate their disability, they can also get their materials in different format.

5.4.7.3 Equipment

A proposal should be made to the government to provide these groups with relevant equipment for free. Also the study recommends the school to embark on application of ICT to minimize cost of using analogue equipment. Communication devices such as slate and stylus, tape recorders and typewriters may be made use of.

5.4.7.4 Technology

Currently we have computers with adaptive software and hardware. The study recommends installation of such software which is designed to read the text on webpage and provide an auditory response which will be synthesized for visually impaired. This will enable visually impaired student access information in voice, Braille and large print.

Several respondents suggested that the GOK lower the cost of equipment and materials for the disadvantaged groups for it would assist these groups to purchase enough for them. This can be done by lowering tax on equipment. It was also proposed that the organisation can extend a hand of collaboration with NGOs, religious organizations as well as publishers. Maintenance and repair for the equipment available should be prioritized. The school could approach the large charitable organizations, religious groups and NGOs for acquisition of computers and also approach GOK to install bandwidth connectivity. This could assist the students in accessing and sharing information using ICT technologies alongside assistive technology.

5.4.7.5 Employing more Professionally Trained Staff

The study recommends that qualified science teachers to be sourced by either approaching the government or the principal to look for volunteers or those looking for practical experience. A teacher can also be taken for further training on the students' special needs in order to address their physical fitness challenge. The Librarian should equally be trained in either in library science or special education. This will enable the staff to work better with the virtually impaired as the staff will understand students' needs.

5.4.7.6 Library Space

The study proposes that the library can opt to automate materials, for in this the space would be adequate. The library can also carry out weeding process for the outdated materials to remain with relevant information. This would defiantly create the space for reading and for the new books. However, there is still need to put up a modern library building designed for the visually impaired for ease of access and use.

5.5. Suggestions for Further Research

Since this study focused on provision of information for student at Thika School for the Blind, there is need for further research on the role of information services for the visually impaired in other institutions in Kenya. The study can also focus on private centre's to facilitate comparison. This would enhance appreciation of provision of information concept and the role of information to the society. The study established low application of ICT in provision of information in the school. There is need for appreciation of the role ICTs play, not only as an enabler of provision of information, but also as a facilitator of information and stakeholders to establish web

accessibility to provide wider information to visually impaired people. Finally digitization of information for visually impaired should undergo new legislation to ensure barriers to access to information services by the visually impaired are all removed.

REFERENCES

Alicia, Todaro J. (2005). Library services for people with disabilities in Argentina, *New library world, 106* (5), pp.253-268.

Anderson, G. (1998). Fundamental of education research, 2nd ed., London, falmer press

American Foundation for the Blind. (2013). Available at: http:// www.afb. org/ section.aspx?FolderID=3&SectionID=44&TopicID=189&DocumentID=2646. Accessed on 19 March 2013.

Atkinson, M. T. and Dhiensa, J. (2007). Improving library services to people with disabilities*: the role of technology in public libraries*. Oxford: Chandos Publishing.

Barrington, G (2001). *The Disability Discrimination Act 1995 and its implications for the provision of library services*. Manual. Available at: www.nlbuk.org/bpm/cphter3.htm

Beverly, C.A and Bath, P.A (2004). *Healthy information need of visually impaired student: a systematic review of literature in health care and social care*.Vol 12 No.1 pp. 1-24

Brandon, D and Maglajlic, R (1999). *Support and information needs of older visually Impaired people*. Cambridge: Anglia Polytechnic University.

Bruce, I, Mckennel, A, and Walker E (2001). *Access for written information: the view of 1000 people with sighted problems.* London: RNIB.

Bruce, I, Mckennel, A, and Walker E (1991). *Blind as partially sighted adults in Britain*: London, RNIB survey.

Catherine A, Beverly P, Rosemary B (2011). Health and social care information for visually impaired people, *ASLIB Proceedings, 63*(2), pp. 256-274

Cheeseman A. F. (1998). *A study into the need of people with visually impaired from ethical communities,* London, See ability.

Chong, C. (2002). *Web accessibility*: making your Web site accessible to the blind, http://204.245.133.32/tech/webacc.htm.

Cherono, M. (2003). *National plans of education: How the rights and needs of persons with disabilities are catered for.*

Choukhande V.G. (2008). *Information needs and seeking behavior: library and information science research)* Delhi: Shivneri.

Cole, M and Cheeseman, C. (1998). *Understanding the needs of people from ethnic communities* with *visual impairments* (draft report).

Collis, J. (2003). *Business research: a practical guide for undergraduate and post graduate*. 2nd ed. New York: Palgrave Macmillan.

Craddock, P and Wallace, M. (2001). *Alternative format Material. Library service for the Blind*: A manual of Best Practice. National Library for the Blind.

Crawford, S. (1978). *Information need and uses*. *A manual review of information science and Technology,* PP. 13, 61-81.

Creswell, J. W. (2007). *Qualitative inquiry and research design: choosing among five approaches,* Thousand Oaks, CA: Sage Publications.

Curry, S.A and Hatlen, P.H. (1987). Meeting *the Unique Educational Needs of Visually Impaired Pupils through Appropriate Placement*.

Deines-Jones, C. Ed. 2007. Improving library services to people with disabilities. Oxford: Chandos Publishing.

Desta, D. (1995). *Needs and provisions in the area of special education: the case of Ethiopia*

Davies, J. E. (2007). An overview of international research into the library and information needs of visually impaired people. *Library Trends 55*(4):785–796.

Deaton, H (Turner, M ed). (1993). *Out of sight, out of reach, out of bounds: access to information. For visually disabled people*. London: Greater London Association of Disabled People.

Devlieger, P. (1989). *Culture-based concepts and social life of disabled persons in sub-Saharan Africa: The case of the deaf.* Paper presented at *The Deaf Way: an International.*

Disability Discrimination Act (UK, 2005). Available at http://www. www.official-documents.gov.uk/document/.../9780108508066.pdf (Accessed 20 April 2013).

Dorothy, O. (2003, November 19). *Handicapped children hiding no more. East African Standard. Report on the 2nd South-South-North Workshop*: Kampala, Uganda.

Edwards, B.J. and Lewis, S. (1998). The use of technology in programs for students with visual impairments in Florida. *Journal of Visual Impairment and Blindness,* May, 302-312.

Ellis, D. Cox, D. and Hall, K (1993). A comparison of the information seeking patterns of researchers in the physical and social sciences. *Journal of Documentation*, 49: 356-369.

Frankel, J.R.N and Wallen, N.E. (1993). *How to design and evaluate research in education*. Newyork: McGraw-Hill.

Friend, C. (2009). "Meeting the Needs of the Visually Impaired Persons: What Challenges

for IP?" Paper presented at a meeting hosted by WIPO in Geneva, July 13, 2009. Accessed: July, 2014. Available at http:// www. wipo. int/ meetings/ en/2009/ vip _ge/presentations/chris_friend.html

Fullmer, S. and Majumber, R.K. (1991). Increased access and use of disability related information for consumers. *Journal of Rehabilitation*, 57, July-September, 17-22.

Gallimore, A. (1999). When special becomes every day. *Library Technology, 4*(1), 13, 16.

Gargiulo, R.M. (2003). *Special Education in Contemporary Society: An introduction to exceptionality*. Wadsworth Learning Inc.

Ghauri, P. and Gronloug K. (2005). *Research methods in business studies: a practical guide*. - 3rd ed. - London: Prentice Hall.

Hartley, J. (2006). *Disabled students in higher education*. *British Journal of Educational Technology, 37*(5), 808-809.

Hampshire, B. (1981). *working with Braille: a study of Braille as a medium of communication*. UNESCO.

Hanninen, K.A (1975). *Teaching the visually handicapped*, Columbus, Charles E.Merrill http://kidseducationkenya.org/thika-school-for-the-visually-impaired-opportunities/: http://ksblind.org/site/KSB%20Annual%20Report%.pdf: Accessed on 7th July 2012) http://www.who.int/msa/mnh/ems/icidh/brochure/whatis.htm Access on 26 July, 2012).

Heiman, T (2004). International Journal of Special Education: *teachers coping with changes: Including students with disabilities 2004,* Vol 19, No.2.

Holsti, O (1978). *Content analysis for social sciences and humanities*. Reading, Addison Wesley

IFLA (1999). *The Public library manifesto*. The Hague: united Nations.

Kamunge, J.K. (1988). *A report on the presidential working party on education and manpower development in Kenya*, Nairobi: Government Press.

Karama, B. (2003, July 12). *Disabled Children Denied Education*. East African Standard.

Karugu, G. K. (1994). *Special education trends and issues in relation to teacher education curriculum*. A paper presented at the third teacher education seminar at Egerton University.

Kengrey, K. P (2002). Concept of information seeking and their presence in the practical library literature, Library *Philosophy and Practice, 4(2).*

Kenya gazette supplement (2002). No 48 bills no 16

Kenya Society for the Blind (2012). KSB Annual Report 2012. Available at: http:// www. ksblind.org/images/pdf/Annual%20Reports/KSB%20Annual%20Report%202012.pdf

Kiuhu, (2007). *Open Distance and electronic – learning (module ID 004),* Kenya: Nairobi: Kenya Institute of Special Education (KISE).

Klemz A (1977). *Blindness and partial sighted: care of visually impaired handicapped*. Wooded: Faulkner.

Koech, K.D. (1999). *Total integrated education and training*, Nairobi: Government Press.

Kothari, C.R. (2004). *Research methodology: methods and techniques***.** New Delhi: New Age International.

Krikelas J. (1983). Information seeking behavior: patterns and concepts. *Drexel Library Quarterly*, *19*(2), pp.5-20.

Kuhlthau, C. (1991*).* Inside the search process: information seeking from the user's perspective, *Journal of the American Society for Information Science*, *42* (5), pp. 361-71.

Kumar, D. (2003). *Science for student with visually impaired*: teaching suggestions and policy implications for secondary educators.

Long, C.A. (1993). *Making information available to partially sighted and blind clients.* Electronic Library, pp. 373-384.

Machell, J (1996). *Library and information services for visually impaired people.* London: Library Association.

Malone, L., & DeLucchi, L. (1979). Life science for visually impaired students. *Science and Children, 16*(3), 29-31

Mandesi, G.K. (2007). *Manual on HIV/AIDS awareness and disability rights*. Dar es Salaam: Rehabilitation International, Disabled Organization for Legal Affairs and Social Economic Development (DOLASED).

Manthorp, H (1996). South Worcestershire Visual Impairment Project: *Survey Report Worcestershire Association for the Blind.*

Masey, H (1997). *The information and support needs of newly visually impaired people*. London: RNIB.

Massis, B. (ed.) (1996). *Serving print disabled library patrons: a textbook for facilitators of library service to people with visual or physical impairments*. Jefferson, N.C.: McFarland.

McQuail, D. (1994). *Mass* communication theory: *an introduction,* 3rd. ed. London: Sage.

*Meeting the needs of the handicapped**:** a resource centre for teachers and librarians* (1980) London: Oryx Press.

Moore, N. (2003). *The information needs of visually impaired people: A review of research*. London: RNIB.

Moore, N. (2002). A model of social information need. *Journal of information science, vol.28 no 4,* pp. 297-303.

Morris, D. (1978). *Man watching. A field to human behaviors.* London: Panther

Mugenda and Mugenda (1999). *Research methods: qualitative and quantitative*. Nairobi: ACT Press.

Muya, E.W. (1990). *Development of library services for visually handicapped: a basic strategy'. Proceeding of Kenya library association annual seminar 27th feb-2 march* (unpublished).

Nicholas J. (2006**).** Libraries digitization and disability, *Library Review, 55*(3), pp. 168-172

Nuguti, O. (2010). *Understanding project monitoring and evaluation*. - 2nd ed. – Nairobi: Ekon.

Ochoggia, R.E. (2003). '*Provision of library information services to visually handicapped students in Kenya public university.*

Oso W.Y. and Onen D. (2005). *A general guide to writing searches proposal & report: A handbook for beginning researchers*. Nairobi: Option Printers and Publishers.

Payne, P (1990). *Sampling techniques and recruiting respondent in research methods in Library and information studies*/ed. by Margaret slate. London, the Library Association.

Person with disabilities bill (2002). Nairobi: Government printers.

Pinion, C. (1990. *Audio services for the blind and partially sighted in public libraries*. Audiovisual Librarian, 16 (1) 24-28.

Pirolli, P. and Card, S.K. (1999*).* Information foraging, *Psychological Review*, 106, pp.643-75.

Porter, P. (1997). *The reading washing machine*. Vine, 106, 34-37.

Punch K. F (1998). *Introduction to social research: qualitative and quantitative approaches*. London: Sage.

Raymond E. O (2003). Persons with Disabilities bills 2002**:** implications concerning Visual disabilities for academic libraries and information services in Kenya, *New Library World,* 104(7), pp 307-312.

Royal National Institute for the Blind (2001). *Accessible Web design available at:* http://www.rnib.org.uk/digital/hints.htm.

Royal National Institute for the Blind (2001). *The main UK organization representing the needs and interests of blind and visually impaired people*. Provides a wide range of information and advice, and lobbies on behalf of the community it represents: Available at: http://www.rnib.org.uk/.

RNIB (1998). Informed: Royal institute for the blind. London: *Campaign report 7.*

RNIB (2010). *Access to Information – Reports.* Available at: http://www.rnib. org.uk/ campaigning-policy-and-reports-hub-access information/ access-information-reports.

Roth, H. (1991*). Planning information services in the disability field: some essential steps, Link-Up 66, February.*

Royal National Institute for the Blind (1998). *The Internet and How to Access It*. Peterborough: RNIB.

Royal National Institute for the Blind (1999). *How RNIB can help*. URL: http://www.mib.org.uk/services/welcome.htm Accessed Dec 20 1999.

Saunders, M. (2007). *Research methods for business students*. - 4th ed. - London: Pearson Education Limited.

Savolainen, R. (1995). Everyday life information seeking: approaching information seeking in the context of way of life, *Library and Information Science Research*, 17, pp.259-94.

Sekaran, U. (2006). *Research methods for business: a skill building approach*. - 4th ed. - New Delhi: John Wiley and Sons.

Singh J (2009). *Library and information science in digital age: essays in honour of Prof. M.P. Satija.* New Delhi: Ess Publications.

Slater, M. (ed.). (1990). *Research methods in library & information*. London: The Library Association.

Sorenson L. S. (1999). *Accessible library services: taking action to enhance services for persons with disabilities*. Illinois: Skokie public Library.

Spink, A. and Cole, C. (2004). human information behaviour: integrating diverse approaches and information use. *Journal of the American Society for International Science and Technology*, *57* (1), pp.25-35.

Tom, P. and Lori, B. (2004). Info eyes**:** a virtual references and services for visually impaired. *Library Hi Tech News*, *21*(6), pp.5-11.

U*N General Assembly (1994) a/res/44/96 Standard rules on the equalization of opportunity for person with disabilities.* Available at: www. un.org/ documentation/ ga/res/ 48r096.htm.

UNESCO (1985). *A Guide to teacher training programmes in special education in Africa: Ensco Sub-Regional Project for Special Education in Eastern and Southern Africa*. Nairobi, Kenya.

Velleman, R.A. (1990). *Meeting the needs of people with disability: a guide for librarians, educator, and serve professionals.* Phoenix, AZ: Oryx Press,.

Verweyen, P. (2004). *Low Vision Services Provided by the Low Vision Project-Kenya*. Available at: http://icevi.org/publications/icevix/wshops/0262.html.

Wagner, B. V. (1995). Measurement for students who are visually impaired. In: Egelston-

Dodd, J. (Ed.). Improving Science Instruction for Students with Disabilities: *Proceedings of a Working Conference on Science for Persons with Disabilities. IA: University of Northern Iowa, 7.*

Waihenya, K. (2000, May 22). *8-4-4 locks out disabled children*. East African Standard.

Walsh J. (2006). Improving web accessibility for visually impaired, *Library Hi Tech News, 23* (8), pp. 29-31.

Warner, E. S., Murray, J. and Palmour, V. E. (1973). *Information Needs of Urban Residents*. Final report from the Regional Planning Council of Baltimore and Westat Inc. of Rockville, MD to the U.S. Department of Health.

Wexler, A. (1961). *Experimental Science for the Blind*. Pergamon Press, New York. 108 pp.

Willetts, G (1997). Services for people with visual impairments in Lotion - *a review report for the social services department*. London: RNIB.

Williamson K, Schauder D and Bow, A (2000). *Information seeking by blind and sight impaired citizens: an ecological study, Information Research, 5(4*). Available at: http://informationr.net/ir/5-4/paper79.html.

Wilson, T.D (1999). Models in information behaviour research, *Journal of Documentation, 34*(1), pp. 63-73.

Wilson, T.D (1999). *Wilson model of information*. Available at: www.information.net/papl/papers/doc/html.

Winnie, V (1994). Managing national library for Blind and print handicapped persons, *Library Management, 15*(7), pp. 23-28.

Wohler's, H. D. (1994). Science education for students with disabilities. In Egelston-Dodd, J. (ed). A future agenda: *Proceedings of a working conference on science for persons with disabilities. IA: University of Northern Iowa*, pp. 52-64.

World Health Organization (1999). *Beginner's guide to ICIDH-2*.

Yamane, T. (1967). *Statistics: An Introductory Analysis*, 2nd ed. New York: Harper and Row.

Appendix 1: Discussion Guide for Students who are Totally Blind

Provision of information services to the visually impaired student at Thika School for the Blind.

Section A: Self Introduction

My name is Esther N. Mbugua; I am a student at Moi University (Nairobi Campus) undertaking a Masters Degree in Information Science. The purpose of this discussion guide is to collect information to assess provision of information services to the visually impaired students at the Thika School for the Blind.

This information will be treated with confidentiality and will only be used for research purposes.

Section B: Student Profiles

1. No of girls? ---------- No of boys? ----------
2. What caused your blindness?
3. Did you become blind before birth or after birth?
4. What were the measures taken to prevent blindness?

SECTION C: INFORMATION NEEDS

1. Which information needs does your school conduct and how?

   (Evaluation need, Instruction in Braille, how to use Braille, assistive technology, orientation & mobility, communication devices such as slate & stylus, tape recorder, Type writers, and computer).

   ---

2. Kindly explain how is your information needs met? ----------

   What are the information needs that are not met? ----------

---

SECTION D: SCHOOL LIBRARY

1. Does your school have library? ----------

2. Have you been trained how to use the library? ----------
---

3. What is it for? ----------

4. How does the library support your academic and learning activities?

---

5. What services does your library provides in terms of?

(Borrowing services, Selective dissemination of information, reference services, reading assistance & orientation)

---

6. Who offers you services in the school library?

---

7. Explain how your school organize programs for you in terms of?

(Motivational speakers, Politician, debates or discussion of given topic, clubs)

Others? (Specify) ----------

SECTION E: INFORMATION SOURCES AND SEEKING ACCESS

1. What are the print resources available at your school library in terms of?

(Large print, Braille, text books, newspapers, journals and magazine)

---

2. Which ones do you consult during your studies?

---

3. What are the non-print resources available in your school library?

(Audio books, Cassettes, tapes, talking books)

---

4. Explain how you utilize the resources?

---

5. How can you classify the information materials at library in term of?

   (Educational, informational, recreational)

---

6. Are the information materials adequate? ----------

SECTION F: SUPPORT EQUIPMENT

1. Briefly explain reading equipments that are available in the library and how you use them?

   (a). Braille machine? ----------

   (b) Any taking book recorded? ----------

   (c).Any tactile? ----------

   (d).any computer for the blind? ----------

   (e).Magnification glasses? ----------

   (f).Stylus? ----------

2. How do you utilize reading equipment available in school? (Embossed Braille machine, computers, tape recorded, type writers, broadcasting media such as TV, Radio, magnifier, sensory aids)

   ---

3. Is the equipment adequate for the school? If no explain which ones are inadequate?

SECTION I: INFORMATION SEEKING

1. Briefly narrate how you look for information? ----------
2. Where did you turn for assistant? ----------

3. What are the skills you require to access information independently? ----------
4. Do you require assistant and who assist you? ----------

SECTION J: TYPE OF SPECIAL LEARNING SKILLS

1. What are the special skills available in your school in terms of?

   (Mobility skills, reading embossed writing Braille, tough typing, sighted guiding, computers, and low vision aids devices)

   ---

2. Which special skills were you trained? ----------
3. What are the benefits of the skills that you have learned? ----------
4. Explain which ones you have not learned and why you require them? ----------
5. How has the skills affected you while seeking information? ----------

SECTION K: ACADEMIC/LEARNING ACTIVITIES

1. What activities do you participants in your school?

   (Attending class, doing class exercise, reading, class project, doing texts, doing examination, doing experiments-laboratory and doing field work-agriculture)

   ---

2. What are the difficulties you experience while participating the activities?

   ---

3. What are the indoors games available in your school?

   (Playing cards, drought chess, scrabble)

   ---

4. Which ones are not available?

   ---

5. What are the outdoor games available in school?

   (Table tennis, Swimming, Athletics, cricket and golf?

6. What do you require to participate in the outdoor & indoors?

   ---

7. Were you offered any training to participate in games?

   ---

8. Is your field modified for both outdoor and indoor games?

   ---

9. What are the other games you require and not available in school?

   ---

10. Briefly, how is indoor and outdoor games help your?

SECTION L: FACTORS INHIBITING WHILE ACCESSING LIBRARY

1. What do you say about inhibiting factors as your access information materials using the rating of?

Inhibiting factors	**Strongly agree**	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**
library orientation					
library materials					
reading equipments					
reading support					
Lack of technology					
Inadequate personnel					
Lack of professionalism					
Inadequate space					
Navigating environment					

2. Others, (specify) ----------

SECTION M: SUGGESTIONS FOR IMPROVEMENTS OF ACCESS

What suggestions do you propose to improve the above challenges? ----------

---

Appendix 2: Discussion Guide for Students who are Partially Sighted

Provision of information services to the visually impaired student at Thika School for the Blind.

Section A: Self Introduction

My name is Esther N. Mbugua; I am a student at Moi University (Nairobi Campus) undertaking a Masters Degree in Information Science. The purpose of this discussion guide is to collect information to assess provision of information services to the visually impaired students at the Thika School for the Blind.

This information will be treated with confidentiality and will only be used for research purposes.

Section B: Student Profiles

1. No of girls? ---------- No of boys? ----------
2. What caused your blindness?
3. Did you become blind before birth or after birth?
4. What were the measures taken to prevent blindness?

SECTION C: INFORMATION NEEDS

3. Which information needs does your school conduct and how?

   (Evaluation need, Instruction in Braille, how to use Braille, assistive technology, orientation & mobility, communication devices such as slate & stylus, tape recorder, Type writers, and computer).

   ---

4. Kindly explain how is your information needs met? ----------

   What are the information needs that are not met? ----------

SECTION D: SCHOOL LIBRARY

1. Does your school have library? ----------
2. Have you been trained how to use the library? ----------

3. What is it for? ----------

4. How does the library support your academic and learning activities?

   ----

5. What services does your library provides in terms of?

   (Borrowing services, Selective dissemination of information, reference services, reading assistance & orientation)

   ----

6. Who offers you services in the school library?

- ----------

7. Explain how your school organize programs for you in terms of? (Motivational speakers, Politician, debates or discussion of given topic, clubs)

   Others? Specify) ----------

SECTION E: INFORMATION SOURCES AND SEEKING ACCESS

7. What are the print resources available at your school library in terms of?

   (Large print, Braille, text books, newspapers, journals and magazine)

   ----

8. Which ones do you consult during your studies?

   ----

9. What are the non-print resources available in your school library?

   (Audio books, Cassettes, tapes, talking books)

   ----

10. Explain how you utilize the resources?

    ----

11. How can you classify the information materials at library in term of?

    (Educational, informational, recreational)

    ----

12. Are the information materials adequate? ----------

SECTION F: SUPPORT EQUIPMENT

1. Briefly explain reading equipments that are available in the library and how you use them?

(a). Braille machine? ----------

(b) Any taking book recorded? ----------

(c).Any tactile? ----------

(d).any computer for the blind? ----------

(e). Magnification glasses? ----------

(f). Stylus? ----------

2. How do you utilize reading equipments available in school?

(Embossed Braille machine, computers, tape recorded, type writers, broadcasting media such as TV. Radio, magnifier, sensory aids)

---

3. Is the equipment adequate for the school? If no explain which ones are inadequate?

SECTION I: INFORMATION SEEKING

1. Briefly explain how you look for information? ----------
2. Where did you turn for assistant? ----------
3. What are the skills you require to access information independently? ----------
4. Do you require assistant and who assist you? ----------

SECTION J: TYPE OF SPECIAL LEARNING SKILLS

1. What are the special skills available in your school in terms of?

   (Mobility skills, reading embossed writing Braille, tough typing, sighted guiding, computers, and low vision aids devices)

   ---

2. Which special skills were you trained? ----------
3. What are the benefits of the skills that you have learned? ----------
4. Explain which ones you have not learned and why you require them? ----------

5. How has the skills affected you while seeking information? ----------

SECTION K: ACADEMIC/LEARNING ACTIVITIES

1. What activities do you participants in your school?

   (Attending class, doing class exercise, reading, class project, doing texts, doing examination, doing experiments-laboratory and doing field work-agriculture)

   ---

2. What are the difficulties you experience while participating the activities?

   ---

3. What are the indoors games available in your school?

   (Playing cards, drought chess, scrabble)

   ---

4. Which ones are not available?

   ---

5. What are the outdoor games available in school?

   (Table tennis, Swimming, Athletics, cricket and golf?

   ---

6. What do you require to participate in the outdoor & indoors?

   ---

7. Were you offered any training to participate in games?

   ---

8. Is your field modified for both outdoor and indoor games?

   ---

9. What are the other games you require and not available in school?

   ---

10. Briefly, how is indoor and outdoor games help your?

SECTION L: FACTORS INHIBITING WHILE ACCESSING LIBRARY

1. What do you say about inhibiting factors as your access information materials using the rating of?

Inhibiting factors	**Strongly agree**	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**
library orientation					
library materials					
reading equipments					
reading support					
Lack of technology					
Inadequate personnel					
Lack of professionalism					
Inadequate space					
Navigating environment					

2. Others, (specify) ----------

SECTION M: SUGGESTIONS FOR IMPROVEMENTS OF ACCESS

What suggestions do you propose to improve the above challenges? ----------

---

Appendix 3: Interview Schedule for Key Informants

Provision of information to the visually impaired students at Thika School for the blind.

SECTION A: SELF INTRODUCTION

My name is Esther N. Mbugua; I am a student at Moi University (Nairobi Campus) undertaking a Masters Degree in Information Science. The purpose of this interview schedule is to collect information on provision of information to the visually impaired student at Thika School for the Blind.

This information will be treated with confidentiality and will only be used for research purposes.

SECTION B: LIBRARY DEPARTMENT

Part 1- Librarian

1. Designation----------

2. What is your academic qualification? ----------

3. How long have you worked with visually impaired students? ----------

4. State your role and function? ----------

Part II – Academic /Learning Curriculum Support

1. What is the role of library? ----------

2. How does the library support school curriculum? ----------

3. What are the challenges in support? ----------

Part III – Information Needs Of Students

1. What are the needs of students? ----------

2. How does the library meet the needs? ----------

3. Does the school meet these needs? ----------

4. Briefly, explain how the needs benefit the students? ----------

Part IV – The School Library

1. How many staffs work in the library? ----------

2. What are the qualifications of the staff? ----------

Part V – Library Resources/Facilities

1. Are the library materials available? ----------

2. Are they adequate in format and currency? ----------

3. Does the library material support learning activities in? ----------

- General information materials? ----------
- Recreational materials? ----------
- Educational? ----------

Part VI - Availability of Facilities/Equipment

1. Is the Reading space adequate? ----------

2. Do you have specialised reading aids (Braille machines, Braille copiers, talking books, computers, tactile, reading assistants? Magnifying glasses etc?) ----------

---

Part VII- Collection Development

1. How do you carry out selection process for information materials? ----------

2. How do you acquire information materials and equipments for library users? -------

3. What type of gifts and donation you receive from external sources? (Organization, associations) ----------

Part VIII – Financial Resources For The Library

1. Any funding from government? ----------

2. Funding from internal organisations? ----------

3. Funding from specialised organisations and associations? ----------

4. How adequate is funding Adequate? ----------

Part IX– Inhibiting Factors in the Provision of Information Services

1. What are the challenges in terms of?

- Location of library? ----------
- Staffing of library? ----------
- Qualification of library staff? ----------
- Reading space? ----------
- Information materials? ----------
- Specialised equipment? ----------
- Information services? ----------
- Funding of library? ----------

SECTION C: ACADEMIC DEPARTMENT

Part I – Academic /Learning Activities

1. What activities do student participants in your school?
2. What are the difficulties they may experience while participating the activities?

   ----

3. What are the indoors games available in your school? ----------
4. Which ones are not available? ----------
5. What are the outdoor games available in school?
   ----
6. What do they require to participate in the outdoor & indoors?

   ----

7. What training are the students offered to participate in games?

   ----

8. Is your field modified for both outdoor and indoor games?

   ---

9. What are the other games students require and not available in school?

   ---

10. Briefly, how are indoor and outdoor games help the students?

Part II – Information Needs of Students And Teachers

1. Needs of students? ----------

2. Needs of teachers in special education? Such as:

   - Teachers of humanities? ----------
   - Teachers of social science? ----------
   - Teachers of general science? ----------

Part III – School Library

1. How is the school library relevant to school curriculum? ----------

2. Is the library adequate in?

   - Space? ----------
   - Information materials? ----------
   - Equipment and facilities? ----------
   - Diversity of services? ----------
   - Curriculum support? ----------

Part IV – Library Resources

1. Are there teacher's instructional resources for –?

   - Humanity subjects----------
   - Social science subjects----------
   - General subject ----------
   - Recreational /supplementing books----------

2. Are resources adequate in terms of?

- Formats----------
- Currency----------
- Relevance----------

Part V – Inhibiting Factors Faced by Visually Impaired People While Accessing Information

1. What are the challenges faced by visually impaired people while seeking information?----------
---

SECTION G: SUGGESTIONS FOR IMPROVEMENTS OF ACCESS

1. What measures has the school put in place to deal with the challenges?

Appendix 4: Pre-Test Checklist

RESEARCH TITLE: Provision of information to the visually impaired students at Thika School for the Blind

(Please refer to the accompanying interview schedule attached and kindly answer the following questions after reading the objectives listed below).

Objectives of the Study

The study aims to fulfil the following objectives:

1. To identify different activities that visually impaired students in Thika School for the blind undertake while seeking information.
2. To identify information sources that the student consult when seeking information
3. To determine the types of skills required for them to access information
4. To establish challenges faced by visually impaired people while seeking information.
5. To propose strategies to improve information access by the visually handicapped

Pre-test Questions

1. Is the language used in the interview schedule clear? Yes □

   No □

2. Are the objectives of the study adequately covered in the interview schedule? Yes □

   No □

   If no, explain. ----------

3. Are the questions too many? Yes □

   No □

   If yes what do you recommend? ----------

4. What is your view on the diversity of the questions in the interview schedule?

   ---

5. Is the sequence of the questions logical and systematic? Yes □

   No □

   If no, what do you propose? ----------

6. Are the questions in the interview schedule clear for your understanding?

   Yes□
   No □

   If no, identify those that need clarification----------

7. What is your view on the presentation of the interview?

   Well-presented □ Fairly presented □ Not well presented □

   If not well presented, what do you recommend?

Thank you

Appendix 5: University Introduction Letter

MOI UNIVERSITY
SCHOOL OF INFORMATION SCIENCES
Tel. 053-43720, 43620, 43231(Dean)
Fax No. 053-4304, 43360
Telex No. MOIVERSITY 35047
Email: deanis@mu.ac.ke

P.O. Box 63056-00200
NAIROBI
Kenya

Our Ref: MU/NRB/IS/SA/14

25th November, 2013

THE SECRETARY
NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY,
P.O. BOX 30623-00100,
NAIROBI

Dear Sir/Madam,

RE: ESTHER N. MBUGUA ADM. NO. IS/MPHIL/088/011

The above named person is a bona fide student of Moi University, Nairobi Campus, School of Information Sciences, pursuing Master of Philosophy in Information Sciences.

Esther has successfully defended her Thesis proposal entitled: "Provision of information by visually impaired students at Thika School for the blind"

Any assistance accorded her will be highly appreciated.

For further information, please contact the undersigned.

MOI UNIVERSITY
NAIROBI CAMPUS
SCHOOL OF INFORMATION SCIENCES
P.O. Box 63056 - 00200
NAIROBI

James Kimutai
School of Information Sciences
Nairobi Programme Coordinator

Appendix 6: Research Authorisation

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No.

Date:

17th February, 2014

NACOSTI/P/14/7792/723

Esther Njambi Mbugua
Moi University
P.O.Box 3900-30100
ELDORET.

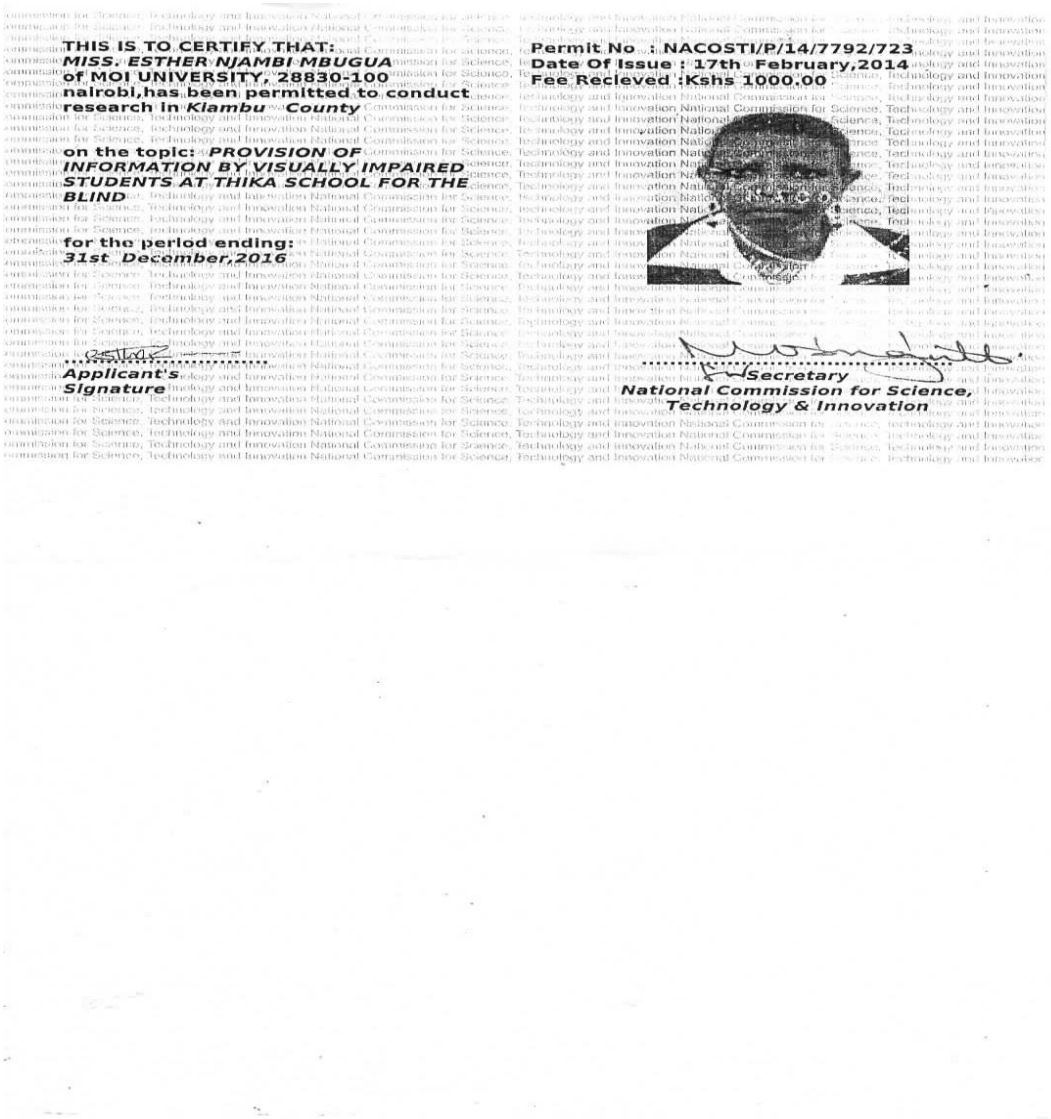
RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Provision of information by visually impaired students at Thika School for the Blind,"*** I am pleased to inform you that you have been authorized to undertake research in **Kiambu County** for a period ending **31st December, 2016.**

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

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

Appendix 7: Research Permit



THIS IS TO CERTIFY THAT:
MISS. ESTHER NJAMBI MBUGUA
of MOI UNIVERSITY, 28830-100
nairobi,has been permitted to conduct
research in *Kiambu County*
on the topic: *PROVISION OF INFORMATION BY VISUALLY IMPAIRED STUDENTS AT THIKA SCHOOL FOR THE BLIND*
for the period ending:
31st December,2016

Permit No : NACOSTI/P/14/7792/723
Date Of Issue : 17th February,2014
Fee Recieved :Kshs 1000.00

Applicant's Signature

Secretary
National Commission for Science, Technology & Innovation