ATTITUDE OF EDUCATION STUDENTS TOWARDS INTERNET AS A KNOWLEDGE ACQUISITION TOOL IN MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY

BY

MUSAMIA A. A. OBULINJI

A THESIS SUBMITTED TO SCHOOL OF EDUCATION IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF PHILOSOPHY DEGREE IN EDUCATIONAL PSYCHOLOGY

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY
MOI UNIVERSITY
P.O. BOX 3900,
ELDORET, KENYA.

NOVEMBER, 2012

DECLARATION

DECLARATION BY THE CANDIDATE

This thesis is my original work and has not been presented for a degree in any other university. No part of this work can be reproduced without the permission of the student or Moi University.

---------- ----------

MUSAMIA A.A. OBULINJI DATE

EDU/PGP/1002/05

DECLARATION BY THE SUPERVISORS

This thesis has been submitted with our approval as University Supervisors.

---------- ----------

DR.MICHAEL M.NDURUMO DATE

LECTURER

DEPARTMENT OF EDUCATIONAL PSHYCHOLOGY

UNIVERSITY OF NAIROBI, NAIROBI.

---------- ----------

DR. MULAMBULA, S.M. DATE

LECTURER

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

MOI UNIVERSITY, ELDORET.

DEDICATION

To my parents : John Musamia Wasabo and my loving mum,Felistus Chiriswa Wesonga.To my husband , Joseph Obulinji Okutoyi, my children, Zubeda Ayuma , Halima Wasabo, Samira Amakobe , Munira Okutoyi and Hanifa Ondeche.

ACKNOWLEDGEMENT

I am very grateful to Moi University for having granted me the opportunity to undertake the course of educational psychology.

Secondly, I am exceedingly grateful to my supervisors Dr. Michael M.Ndurumo and Dr. S.M. Mulambula, for the time they spent to read through my work and give constructive comments. Without their assistance this work would not have taken the shape it has.

My appreciation goes to the students of Masinde Muliro University of Science and Technology for their cooperation during the time I was collecting data. Thanks to my colleagues in the Department of Educational Psychology, and in Moi University as a whole, for the moral support and all the assistance accorded to me during the time I was working on this project.

Lastly, my heartiest thanks go to my husband Mr. Joseph Obulinji Okutoyi and my daughters Zubeda, Halima, Samira, Munira and Hanifa for their patience, encouragement and support during the time spent on the thesis.

ABSTRACT

There are many changes occurring in higher education in Kenya and the world over. These changes range from a rapid expansion of student enrolment to proliferation of programmes and types of institutions offering higher education. The changes are occurring at a time when there is emphasis on the use of ICT in development. The use of the internet is part of ICT. The question of internet contribution to acquisition of knowledge is a subject of academic research. It was against this background that the need for this study was envisaged.

The study was undertaken in Masinde Muliro University of science and technology. The study was based on learning theory by Albert Bandura focusing on self-efficacy. An ex post facto research design was adopted. Using stratified sampling, a sample of 320 was drawn from the third year student teachers of the academic year 2008/2009.Questionnaire for student teachers were used to collect the data.

The results of analysis of variance (ANOVA) showed that there was a significant difference among the three mean scores, $F(2,317) = 6.651$, $P<0.05$. Students' attitude influences their use of internet for acquiring knowledge. It was concluded that most University students seem to be confused about the role of internet as a tool for knowledge acquisition, because most of the participants had a neutral attitude about the use of internet for academic purposes.

The result showed that there was no significant difference between regular students' and self-sponsored students' attitude towards the use of internet as a knowledge acquisition tool, t (318) =1.812, p>0.05. However, more self-sponsored students make use of the internet (x=72.46) more than regular students (x=69.06).

The result of (ANOVA) indicated that age had no significant influence on students use of internet as a knowledge tool, F (2,316) = 0.220, P>0.05. However students who are more than 30 years (x=74.58) have more positive attitude towards internet as a resourceful material when it comes to academic work.

The results showed that there was no significant difference between arts and science based students, in their attitude towards the use of the internet as a knowledge acquisition tool, t(318)=0.174, p>0.05. The result of the analysis showed that there was a significant difference between male and female students in their attitudes towards internet as a knowledge acquisition tool, t (318) = 2.640, p<0.05.

The relationship between students' attitudes towards internet and use of internet as a knowledge acquisition tool was found to be significant r=0.668, p<0.01.Therefore the attitude of student teachers towards use of internet is an important determinant to accessibility of quality and relevant information. The training of teachers should therefore be planned in such a way that the needs for information technology in training programmes are considered.

TABLE OF CONTENTS **PAGE**

LIST OF TABLES

PAGE

TABLES

ABBREVIATIONS

ARCC	African Regional Centre for Computing.
CAI	Computer Assisted Instruction.
CD ROMs	Compact Disk-Read Only Memory.
E-mail	Electronic-mail.
FTP	File Transfer Protocol.
ISPs	Internet Service Providers.
IT	Information Technology.
ITV	Instructional Television.
NREN	National Research and Information Network.
PI	Programmed Instruction.
TCP/IP	Transmission Control Protocol/Internet Protocol.
UK	United Kingdom.

CHAPTER ONE

INTRODUCTION

1.0 Overview

According to Burrows (1993) the internet is a global network of computers linked together over long distances. It was created by American military as a means of communication and has been in existence since the 1950s. For most of its existence the internet was primarily a research and academic network. Up until the mid of the late eighties, commercial organizations and educational institutions mainly used the Internet to retrieve information, communication and conduct business globally, and access a vast array of services and resources on line. This was due to high cost. The rapid development of technology has seen improvement in communication links and lowering costs. The implication of this is that the internet is now more widely available to more people. Currently there is stress for the use of internet in educational institutions.

This chapter presents the background of the study, statement of the problem, and purpose of the study on the use of internet as a knowledge acquisition tool among university students. Also given in this chapter are objectives of the study, research questions, and assumptions of the study, significance of the study, scope, limitations, theoretical framework and operational definition terms used in relation to use of internet by students in institutions of higher learning in Kenya.

1.1 Background of the study

The amount of information available on the internet makes the user to be side tracked with a lot of irrelevant information (Wenger, 1998). As the internet is not owned by anyone; there are no checks or censorship of information available. The positive side of this is that information is freely available to everyone without restriction, but the negative side to this is that information can be placed into the wrong hands. Also, there is no checking on the information on the net; this may lead to inaccuracies and misleading information being published. It is therefore commendable to see various efforts being made by scholars, policymakers and the public in general to properly make use the internet as a source of knowledge.

Millions of people use the internet for its electronic mail, however it is a small part of what the internet offers. Users can join any of the thousands of discussion groups, search for specific information in libraries, or transfer a variety of files to their computers. They can also explore the World Wide Web, the internet multimedia service. Since the internet is now available to a wide sector of the population in the Western world, many educational establishments have seized to its educational potential (Wenger, 1998).

According to Strauss (1997) the internet is a valuable source of information for students looking for ideas for projects and assignments. With over 50 million websites on the net, the chances are any information however obscure can be found. The only requirements to find this information would be some patience and a decent search

engine. It also serves as a tool for lecturers as a source of information for research in preparation for lectures as there are a number of sites, especially in America, dedicated to providing educational information.

It also serves as a forum to promote group discussion, which is time and distance independent. There are many forms of these group discussions. These include video conferencing, where by the use of a small video camera and microphone members of the group can actually see and hear each other. Also, group discussions can take the form of chat rooms where everyone comes together in a host area and communicates with each other via the keyboard.

Although there are many advantages to be gained from using the internet as an educational tool there are also many drawbacks. For first time users the internet can be unfriendly but with frequent use they familiarize with it pretty quickly. The internet is heavily dependent on hardware which can be expensive especially as the internet is constantly evolving. This therefore means to take full advantage of this evolving technology; upgrades in hardware and software are required. With the advent of the internet education has definitely benefited in more ways than can be mentioned, although it will not take over the traditional methods of education, it will continue to play a major part. From the foregoing, there are limited researches on use of internet as a source of knowledge particularly in developing countries such as Kenya. This study contributed by filling the gap between information technology advancement and acquisition of knowledge.

1.2 Statement of the Problem

There has been a marked increase of people making use of the net, ranging from children to adults with no checks or censorship of information available. Based on the gap that may exist between information technology and advancement and acquisition of knowledge it was interesting to find out if some disparity exist in the attitude of university students towards the internet as a knowledge acquisition tool. Therefore, there is a need for an analysis of the attitude towards use of internet as a tool of knowledge acquisition among education students.

Students today are growing in a world that is far different technologically from the world that their parents and grandparents were as students. If students are to be adequately prepared for tomorrow's jobs, development in technology must become an integral part of schools and classrooms.

The technology revolution is part of the information in society. People are using computers to communicate today the way people use pens, postage stamps, and telephones. The new information society still relies on some basic competencies such as good communication skills, the ability to solve problems, thinking deeply, thinking creatively, and having positive attitudes. However, in today's technology-oriented world, how people pursue these competencies is being challenged and extended in ways and at a speed that few people had to cope with in previous eras (Collins, 1996).

Technology in various forms has always held forth the promise of improving education (Wenger, 1998). This is true whether one speaks of scholastic education or its cousins, corporate and commercial training programs. Computer-Assisted Instruction (CAI), Instructional Television (ITV), and Programmed Instruction (PI) can be counted as early examples of application of information technology to education. The most recent and perhaps the most visible are the Web-training programmes and degree-granting programmes from fully accredited institutions offered via what is known as “distance learning.” Technology succeeds when it becomes common place. This is amply illustrated in some societies by such mundane and ubiquitous artifacts as chalkboard, training films and videos, overhead projectors and transparencies, software such as Microsoft’s PowerPoint, and perhaps the most common of all, the textbooks.

The internet industry in Kenya is experiencing gradual growth and the number of users is expected to increase as awareness increases and more people, institutions and organizations appreciate the value of the immense resources on the internet and the fast and relatively cheap communication method it offers. The last 10 years, however, have seen an increase in the number of Internet Service Providers (ISPs) serving the relatively small but significantly increasingly number of users. The ISPs which currently operate in Kenya include: AFRICA Online, African Regional Centre for Computing (ARCC)Form-Net Africa, Net 2000, INTER-Connect, Swift Global, Insight Technologies, and Nairobi Net. Universities also provide internet services to their staff and students.

There is also a tendency for most internet users to consider the net as an entertainment tool or communication gadget. This has resulted to many people dating on the net. This issue of the net as a source of entertainment raises concern about the extent to which internet is a tool of knowledge acquisition. If the use of internet among education students in University is not for academic purposes, it may be difficult for Kenya to realize the 2030 vision because of lack of quality academic research. The researcher felt contented through addressing this by analyzing the attitude of the university students towards the internet as a knowledge acquisition tool.

1.3 Purpose of the study

The purpose of the study was to investigate the attitude of education students' towards the use of the internet as a tool of knowledge acquisition in higher learning institutions in Kenya. The study has attempted to answer the following questions.

1.4 Objectives of the study

The objectives of the study were to:

a) Investigate the relationship between students' attitude towards internet and the use of internet as a knowledge acquisition tool.
b) Establish if there is a difference between regular students and self-sponsored students in the use of internet as a knowledge acquisition tool.
c) Find out the effect of age on the use of internet as a knowledge acquisition tool.

d) Find out the influence of teaching subjects on the use of internet as a knowledge acquisition tool.

e) Investigate the influence of student's gender on the use of internet as a knowledge acquisition tool.

1.5 Research questions

The research questions are:

a) What is the relationship between students' attitude towards internet and the use of internet as a knowledge acquisition tool?

b) Is there any difference between regular students and self-sponsored students in the use of internet as a knowledge acquisition tool?

c) Does the student's age affect their use of internet as a knowledge acquisition tool?

d) Do the teaching subjects influence the use of internet as a knowledge acquisition tool among students?

e) Is there any difference among male and female students in the use of internet as a knowledge acquisition tool?

1.6 Null Hypotheses of the study

Analysis of data collected was done based on the following hypotheses:

HO1: There is no significant relationship between students' attitude towards the internet and the use of the internet as a knowledge acquisition tool in Masinde Muliro University of Science and Technology.

HO2: Module of study has got no significant influence on the use of internet as a knowledge acquisition tool in Masinde Muliro University of Science and Technology.

HO3: Student's age does not have a significant effect on the use of internet as a knowledge acquisition tool in Masinde Muliro University of Science and Technology.

HO4: Teaching subjects do not have a significant influence on the use of internet as a knowledge acquisition tool in Masinde Muliro University of Science and Technology.

HO5: There is no significant difference between male and female students on their use of internet as a knowledge acquisition tool in Masinde Muliro University of Science and Technology.

1.7 Justification of the Study

In Kenya there is increasing public demand for quality education making university administrators (managers) and lecturers more accountable for the quality of the clients and products of their university. Most universities in Kenya have internet services, Masinde Muliro University Science and Technology of included. Many factors contribute towards quality education amongst the use of the internet as a knowledge acquisition tool. Whether students utilize the internet as a knowledge acquisition tool or not is debatable for it's optional. The internet may have an influence on the knowledge acquisition of students. This created the need to carry out a study to

investigate the attitude of education students towards the use of internet as knowledge acquisition tool.

1.8 Significance of the Study

The recent commercialization of the internet in Kenya has revolutionalised information flows and systems. The internet is now being used in a variety of ways to promote productivity, communication, business, advertisement, and marketing in Kenya. Internet usage for education is receiving recognition because of the need by most institutions to operate distance – learning programmes and the need to connect academic staff to global resources for improved teaching and research.

Few studies on performance indicators in higher education have been done in Kenya. The studies based on cognitive ability as a performance indicator. There was need for information on how accessibility to internet is contributing towards higher education in Kenya. This may depend on the attitude of the students towards the use of such facilities. This study sought to provide such information. The information can not only be useful to university managers but can also be of benefit to students, parents, educators, policy makers and stakeholders in higher education.

Educationists can also benefit from this study because the findings have highlighted areas that need to be researched into, hence solutions to the problems that exist as far as teacher preparation is concerned. Also the findings can help the educational planners, particularly those concerned with resources, in assigning both personnel and finance in teacher training institutions for effective teacher preparations. The research

findings will also help the prospective teachers to appreciate the value of computer skills for academic and administrative purposes.

1.9 Assumption of the study

The assumptions of the study were as follows:

a) The third year education students in Masinde Muliro University of Science and Technology selected to participate in the study co-operated fully to provide accurate information requested from them.
b) The third year education students in Masinde Muliro University of Science and Technology had met the requirements for the university admission and had equal chance of learning.
c) Responses given by the education students would be a reflection of their attitude.
d) All the important intervening variables were controlled by explicitly including the design or by random sampling.

1.10 Scope of the study

This study on analysis of internet as a knowledge acquisition tool among education students in higher learning institutions in Kenya was conducted during 2008/2009 academic year. A causal comparative research design was used. The target populations were education students. This was to enable the researcher to derive from the sample institution detailed data at affordable cost in terms of time, finances and human resources. The study only focused on the Bachelor of Education third year student

teachers. This is because at this level, the students would have covered various units using computers.

1.11 Limitations of the study

This study was based on causal comparative research design to investigate the use of internet in knowledge acquisition which may have some weakness. However, on the value of non-experimental research Kerlinger (1986) emphasized that despite the weakness of causal comparative, most of the non-experimental research done in psychology; sociology and education do not lend themselves to experimental inquiry.

The study was concerned with internet as a tool of knowledge acquisition. Specifically, the study dealt with education students' attitude towards the use of internet for academic purposes.

The findings are generalized to all higher learning institutions in Kenya with respect to the academic use of internet. It is appropriate to generalize the findings if the institutions have the same characteristics as Masinde Muliro University of Science and Technology.

1.12 Theoretical Framework

This study was guided by the social learning theory as articulated by Albert Bandura focusing on the self-efficacy concept and concepts derived from the general systems theory as discussed in the following section. Self – efficacy is an estimation of a

persons' own ability to successfully perform target behaviour to provide outcomes. Those who rate themselves highly on an activity tend to attempt and successfully execute that activity.

The four sources of self confidence as identified by Bandura (1986) are as summarized as follows.

a) Direct experience
b) Vicarious experience
c) Verbal persuasion
d) Affective arousal.

a) **Direct Experience:** The most important source of self- confidence is through doing a task first hand. Experience instills a sense of high self-confidence in an individual such that the person can successfully attempt a similar activity in future. Such individuals tend to rate themselves highly on self-efficacy scales. For instance, a teacher who has once used a particular method of a lesson presentation will score higher than one who has never used that method when asked to indicate their level of competence at using that method. Thus, the student teachers who use the internet can get more knowledge and become better teachers.

b) **Vicarious Experience**: This is the second important source of self-confidence. It refers to the kind of learning that takes place through observing another person's performance on a given task. Although the observer does not directly share in the

activity. This is how children learn by observing the behaviour of adults. Role models are known to strengthen what is learned vicariously as they serve as the norm. Vicarious learning, as opposed to direct experience, which is active learning, involves passive learning.

c) **Verbal Persuasion**: This is a case in which an individual learns to do something through listening to those who have gone through the experience or through verbal encouragement from peers, friends and relatives. Mere praise when a learner attempts doing something new can build that individuals learning self-confidence than one who is not encouraged. This source serves to create interest in an activity as well as increasing ones' self-confidence through positive thinking, which is believed to increase internal motivation level. If student teachers are made to use the internet as a knowledge acquisition tool it can improve their academic performance. In this study, items 4 and 17 in section B and item 16 in section C of the questionnaire of student teachers used to capture verbal persuasion (See Appendix3).

d) **Affective Arousal**

The last and least important source of self-efficacy is emotional appeal whereby an individual's self confidence is raised through emotional appeal. The use of a model for instance can make a tool to be associated with prestige thus making potential users identify its use with high social status. Those who identify with such a

person become aroused and as a result their confidence at doing similar tasks is increased.

This study also made use of general systems theory. Definition of a system is a set of two or more interrelated parts that act together to achieve a predetermined goal. As a system, the university is made up of components that may be grouped into departments in Masinde Muliro University of Science and Technology . The departments include Arts, languages and science. This system comprises subsystems at different levels namely, Macro level of the education system of a country or state. The Meso level that is at the university level and micro level that is at the department level and the student's levels. At each of these levels, educational decisions are influenced by different factors, for example at the university level the university administration, the head of department, the subject coordinator and the subject lecturers. These are the ones that assist in the making of specific decisions and opinions like internet browsing.

The out-put of a subsystem at a certain level can be conceived as the in-put for the subsystem at the subsequent level. For example, the out-put at the macro level may consist of policies, intentions and plans of governments laid down in official documents, or existing as shared conceptions of what is expected by universities. Conceiving this as the in-put for faculty, the out-put at this level consists of the activities and practices in the computer laboratories, the time allocations and the instructional practices of the lectures. This is the in-put at the micro level, resulting in

various activities, including the development of cognitive skills and attributes of standards.

The theoretical framework was used to guide the literature review. The literature of educational change may be used for tracing potential factors. These factors include the quality, clarity and relevance of the innovations, content, materials and instructional strategies; support and leadership; staff development; experiences with innovations; and the existence of evaluation and feedback. Similarly of the same importance, is the university administration (including the personnel) that determines the climate and direction of internet at university level and stimulate encouragement or discouragement for those who carry the first introduction of the internet in the university. Fullan (1991) observes that the adoption phase, which is the first phase concerning the introduction of internet in educational institutions, implies that universities have decided whether they want to invest in terms of energy, time and finance by the introduction of internet in education.

The decision to start using the internet can be taken by the university administration, as well as the department or individual lecturers. The role of policy makers can be crucial as a proclamation of new aims for educational system and encouragement from above. The decision concerning internet use in educational institutions can determine a great deal whether the implementation of the internet in education will be successful or not. The success is determined by the attitude of many stakeholders and curriculum implementers among them teachers.

1. 13 Operational definitions of Terms

For the purpose of this study, the following definitions of terms were used: **Attitude:** In this study, the student's evaluative feeling or opinion towards internet as a knowledge acquisition tool. Conversely, attitudes are considered to have three major components; an affective (emotional) component (how people feel about the attitude subject); a behavioral component (how people act toward the subject) and a cognitive component (i.e. individuals' knowledge, beliefs, and thoughts about the subject). Items on attitude were scored on a five point Likert scale ranging from Strongly Agree (SA) for five points to Strongly Disagree for one point.

Computer: Is a device or sets of devices that work under control of instruction to automatically process information. In this study, it is an electronic device through which users use to access materials on the web.

Gender: The physical biological condition of being male or female. This was measured by sex which is physiological in terms of male and female.

Internet: The core of computer-mediated communication. The internet system is world wide and connects thousands of computer networks, providing an array of information that students can access.

Knowledge Acquisition: Includes the elicitation, collection, analysis, modeling and validation of knowledge for engineering and knowledge management projects. This can be measured by scores of students in project work or courses by putting categories of marks or grades to show the level of knowledge acquisition. For instance, a student who is awarded grade A in project work or any other course indicates more knowledge was acquired from the internet.

Knowledge Acquisition tool: This refers to internet as a resource material that can be used to contribute towards quality education

Module of study: In this study, refers to the mode which students finance their studies. That is, in terms of government sponsored students and privately self-sponsored students.

Tertiary Institutions: In this study, refers to institution of higher education where a person enrolls after completion of secondary school education with an aim of being awarded a certificate, a diploma or academic degree.

Website: An individual's or an organization's location on the internet. Websites display information posted by individuals or organizations.

World Wide Web (the Web): A hyper-media information retrieval system that links a variety of internet materials. It includes text and graphics**.**

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents both review of literature related to the study as well as a summary of the reviewed studies. Review of related literature was done in order to uncover the background of literature and what other scholars have reported about contribution of internet towards quality education. The major concepts and variables in this study are discussed and the relevant literature reviewed.

The sub –heading reviewed in this chapter are as follows:

a) Conceptualization of the internet.
b) Case of the internet in information provision.
c) Internet and End-User searching.
d) Publishing on the internet.
e) Internet service providers (ISP).
f) The future of the internet.
g) Conclusion.

2.1.0 Conceptualization of the Internet.

What exactly does the internet mean to the novice? Many people have found it difficult to understand what the term internet actually stands for. Although most literature, especially the technical ones, have tried to simplify the concept to the common man, the latter still feels uneasy with the terms used to explain what the net is; such terms include: " the network of networks", "the worldwide interconnection of computers", "the information superhighway", "the web" et cetra. Badal (1994) admits that it is difficult to define the boundaries of internet. He notes that: "Over the years, it has become part of computer mythology – a vast blob of networks with tentacles that reach across continents and onto campuses, government institutions and homes.

As analyzed by Polly and Cisler (1994) numerous metaphors have, therefore, been suggested by researchers and users to describe the internet. There is the internet as highway model, a blistering fast multilane roadway where vehicles are traveling in at least three dimensions at once, the directional signage changes all the time, and there are no stops.Dern (1994) compares the internet to a strange dashboard and states as follows:

> *Imagine you've suddenly landed into a strange city, in an unfamiliar car. There are no labels on the dashboard to tell you whether you are in the forward, reverse, or park, and no way to tell how fast you are going or how much gas you've got. You look up and notice the*

> *windows are painted black, making it impossible to see. You roll the window down you don't recognize anything, and almost all street signs are in a language you don't know. Not too encouraging is it? (P. 149).*

Osburn (1998) compares discovering the wealth of information on the internet to walking on the world's largest library, conference room, and showroom for the first time. In this library, one can venture into the card catalogues (search engines), into the reference libraries (document depositories), or into special interest categories (newsgroups). A columnist in local daily newspaper commented that "a simple way of explaining the Internet is that it is more like entering a building with many doors inside. If you open a particular door, you are able to see the contents in a particular room, and you could open many doors inside those other rooms.

Most analogy, look at the internet as a system which is constantly growing in all directions, but without any coordination or owners to regulate its development. A lot of resources are available but nobody exactly knows where they can be found, neither can others prevent others from making use of what they claim to be their own resources as long it is in the Net. In the same way, a lot of "bad" type of material is available (such as pornographic material) which may be harmful to some sector of the society; however, it is not possible to prevent people (mainly minors) from having a look at it. Finally, there are a few computer whiz kids who have almost fully mastered the techniques of finding their way around the net and it is these who determine the direction this technology is taking. This creates the necessity of ensuring the student

teachers are made aware of the importance of the internet as a knowledge acquisition tool and educate their future students to use it responsibly to avoid the negative influence.

In the following sections literature is presented regarding how higher learning institutions are utilizing the internet as a knowledge acquisition tool. The sections are: use of internet in Kenya, use of internet in tertiary institutions, cost and obstacles to use of Technology in education.

2.1.1 Use of internet in Kenya

Technology in various forms has always held forth the promise of improving education (Wenger, 1998). This is true whether one speaks of scholastic education or, corporate and commercial training programs. Computer-Assisted instruction (CAI), Instructional Television (ITV), and Programmed Instruction (PI) can be counted as early examples of application of information technology to education. The most recent and perhaps the most visible are the Web-training programs and degree-granting programs from fully accredited institutions offered via what is known as “distance learning.” Technology succeeds when it becomes commonplace. This is amply illustrated in some societies such as mundane and ubiquitous artifacts as chalkboard, training films and videos, overhead projectors and transparencies, software and perhaps the most common of all, the textbooks (Onunga, 1998).

Kenya has not been left behind in the internet technology revolution, a revolution which is currently sweeping every corner of the world in this information age. However, like in developing countries there is yet to be witnessed full potential of this relatively new technology. The full internet made its way to Kenya in 1995, through the African Regional Centre for Computing (ARCC). Before that, there were a few e-mail providers. In 1998, only around 10,000 people had access to the internet mainly through one of the service providers. Because of over-dependence on the telecommunications infrastructures such as telephone lines, the internet technology is most common in the Kenyan major urban centers were these infrastructures are better established, living out the rural areas.

According to Onunga (1998) the internet industry in Kenya is experiencing gradual growth and the number of users is expected to increase as awareness increases and more people, institutions and organizations appreciate the value of the immense resources on the internet and the fast and relatively cheap communication method it offers for the last few years. However, there has been an increase in the number of internet Service providers (ISPs) serving the relatively small but significantly increasing number of internet users. The ISPs which currently operate in Kenya include: African online, regional center for computing (ARCC), Form –Net Africa, Net 2000, Inter-Connect, Swift Global, Insight technologies, and Nairobi Net. Various organizations and institutions also provide internet services to their employees and researchers the Kenyan universities included, but there is need to sensitize the

university students on the influence of the internet as a knowledge acquisition tool so that it can be utilized maximally.

2.1.2 Use of Internet in Higher Learning Institutions

According to Hagloch (1996) two distinct models guide current efforts to make use of the internet in higher education. The first method seeks to improve the existing forms and structures of post-secondary institutions to create “better, fast, cheap” versions of today’s courses and curricula by means of the internet. The model emphasizes building on-campus information infrastructure that provides (or will provide) high speed internet connectivity to all students, faculty administrators and staff. Faculties then can use this infrastructure to improve and supplement traditional courses and degree programs.

Library holdings can be digitalized and made available on both on- and off-campus. Administration processes can be speeded up and simplified. And although the focus remains on the on-campus instruction this new information infrastructure can facilitate distance learning for many categories of nontraditional, off-campus students. While this model of Internet use in higher education requires many changes in the faculty, student, administrative role and functions, it keeps most existing institutional structures and faculty role intact (Baer, 1999).

The second model is more radical and envisions the internet as instrumental to fundamental change in the process and organizational structure of post-secondary

teaching and learning. According to this approach, the internet can transform higher education into student-centered learning rather than an institution and faculty-centered institutions. It can allow agile institutions – old and new – to leapfrog existing academic structures and establish direct links to post-secondary students.

It can encourage new collaborative arrangements between academic institutions and non-profit making institutions. However, it has been observed that this approach can endanger students' demand for post-secondary education in new ways that are basically campus-independent. It may threaten existing institutions of higher education rather than support them (Baer, 1999; Harvey, 1998).

Accepting this view, a celebrated management consultant and social commentator Jensen, (1996) remarked that thirty years from now the big University campus will be Lyrics.The College would not survive as a residential institution. This opinion however did not evaluate the impact of the teacher and the campus environment on learning before arriving at this conclusion. Students are likely to prefer the internet as a supplement to its use as the main method of instruction.

2.1.3 Cost and other Obstacles to Own Campus Internet Instructions

The impact of internet instruction is still very low for various reasons. The technology is new, very costly, and perhaps too threatening to existing academic structures and traditions (Brown & Duguid, 1996). Ignoring the potentials of this new technology for

learning will lead to instructions being less competitive and attractive to prospective students.

The rapid development in the telecommunications industry holds greater promise for education. Concerns about technology impact on teaching are not confined to the internet. Of course, the same possibilities and problems were raised 50 years ago with instructional television, and more recently with personal computers and multimedia CD ROMs. With a few exceptions such as the Rensselaer Polytechnic Institute “studio course” television and computers have had only marginal effects on instructions and have not led to improvements in users’ performance. Like these technologies, the internet must overcome the innate conservatism of academia and a host of institutional obstacles if it is to become more than a supplementary, cost addictive element of on campus instruction (MacArthur & Lewis, 1996). With the adoption of the internet by most foreign institutions and the resultant drop in costs, Kenyan institutions are considering investing in internet facilities.

2.1.4 Evaluating the Use of Technology in Education

Teaching and learning can both be defined as processes, that is, as bounded portions of larger streams of activity. The teacher does one and the learner does the other. Assignments in a course on literature can result in learning on part of students that has nothing whatsoever to do with the teacher’s instructional objectives. In other words, what is taught and what’s learnt may differ. Teaching might or might not lead to learning (Baer, 1999). The relationship between the two processes are neither fixed

nor guaranteed. However, Wenger (1998) has observed that teaching and learning are not inherently linked. More important, teaching and other instructional materials are resources for learning in ways that often differ from those imbedded in the pedagogical intentions. For example, reading assignments in a course on literature can result in learning on the part of students that has nothing whatsoever to do with the lecturers instructional objectives.

According to Hagloch (1996) the use of technology in the learning process can be evaluated using the Flashlight Toolkit method.

To apply this method three elements are required;

a) A technology such as Internet.
b) An activity for which is used such as information search.
c) The educational outcome of the activity for example increased knowledge from the internet

The flashlight approach to studying, teaching and learning with technology relies on simple construct. It is called a 'triad' because it has only three elements.

The triads' structure suggests five sets of related questions;

1) **Questions about the technology per se** (E-mail). For example, questions about its availability and reliability; if the technology can't be used, this triad can't work.
2) **Question about the use of the technology.** For example, is the technology is an effective tool for this activity, or is it problematic or limiting? It is futile to study technology and learn outcomes without also studying how the technology has actually been used (Eharmann, 1998).

3) **Question about the activity per se.** For example, how much do teachers value teaching in this way; if they don't believe this activity is valuable, they are not likely to use technology to carry out the activity for the first time, or to do the activity better than before? Questions about the activity are also useful in comparing courses that use different (old and new) technologies for the same activity.
4) **Question about whether and how the activity is contributing to out come.** For example, do people who achieve outcome report that they actually participated in the activity? Do they claim that activity was valuable in achieving the out come?
5) **Questions about the outcome per se**. For example, is the retention looking good? Is there evidence that the retention is valuable when attained?

If the answers from these five questions are affirmative then the result can sometimes be a reasonably continuous chain of evidence that links technology to activity, and activity to outcome (Brown, 1998; Harrington, 1998; Harvey, 1998). These studies may not be absolutely convincing, but it can be done with a reasonable effort and findings can support some practical reasoning about the value of the technology (internet) as a knowledge acquisition tool and how to use it better in this context.

It is clear from the foregoing literature that there is rapid growth in the use of internet. However, the purpose or the intention varies from one person to another. It is against this background that there was need for the study on the utilization of internet services for acquisition of knowledge.

2.2 Case of the Internet in Information Provision

Researchers on this topic tend to agree that the Internet, as a worldwide collection of millions of computers and users, provides information on nearly every topic, and it is difficult to grasp the volume of this information (Brown, 1998; Harrington, 1998; Harvey, 1998). One can browse through stored information on virtually any subject, and participate in discussions on virtually any topic. Print media are convenient because one can choose which topics to view and when, but the information is never fresh; the news in the morning newspaper is at least a few hours old. Broadcast media are fast, and may even let one witness events as they occur, but one cannot choose which topics a news broadcast will cover, nor in what order, and when one has seen and heard enough of one topic, can one skip to another.

Online information, which the internet provides, has the best qualities of both media: it can carry live broadcasts of texts, sound and video and one can skip from one topic to the next at will. In addition, much of it is achieved so that one can hear or see it later if one wishes. It is like a newspaper except that the text updates as one watches, the photographs are live video feeds, the comics are animated, and one can flip to any of the hundreds of related stories just by touching the page Tenopir (1996).

In an attempt to justify the needs to get online, Tenopir (1996) states as follows:

> *Ours is an age of online searching, with new*
>
> *generations of systems and users. With an estimated six*

> *million users (in 1996) of consumer online services such as America Online, CompuServe and Prodigy, and tens of millions of Internet user, online is now main stream. Although the concept of retrieving information online is nothing new,….there are new aspects: the look of the information, the amount of it available, the number of people it affects and its impact on society.(p. 128).*

Mechin (1996) had this to say about how the Internet assists not only research, but also the provision of information in general: If you want to do research or get information, there is no other media channel with as much allure and interactivity. Newsgroups and the World Wide Web abound with actual commercial offerings of travel and trade, and opportunities to waste time. On the extent of internet use, Mechin posses thus: "…which international organization does not have an e-mail address?"(p. 5). In Kenya however, it might still be possible to find organizations which lack these facilities.

The subsequent below provide a critique of the studies done locally and internationally concerning the case of internet in information provision also forming a basis for the present study as follows:-The internet as a source of information for research, advantages of the internet as an information source, disadvantages of the internet as an information source and the internet and information gap.

2.2.1 The Internet as a Source of Information for Research

Collins (1996) observes that the promise of the internet is that any user can get current and accurate information instantly delivered to a nearby, reasonably priced screen. He argues that although the print directories and books are more comprehensive, the net does offer up-to-minute information, as well as creative links unavailable in the print.

Hagloch (1996) observes that the internet is an extensive academic and research-based network linking a very large number of broadly educational, research and other related organizations across the United States and the world. It has a very large number of users and makes accessible a wide range of information services and resources. It is simply a collection of many networks interconnected by gateways.

According to Badal (1994) the internet has played a leading role in promoting worldwide research and scientific information exchange. By means of many networks linked via the Internet, online scientific and research information can be readily transmitted from one terminal to another with the necessary connections. A breakthrough in medicine by a scientist in one part of the world, for example, can be communicated to other researchers in other corners of the world within seconds. The same case is true for new diseases or a new strain of a known one; this can be communicated to other scientists for research and possible diagnosis and treatment formulation.

As a communication tool, Badal (1994) observes that the number of communications forums available on the internet is staggering: it is home to political theorists and Tibetan Monks, to more prosaic job functions like environmentalists, librarians and academics. The widely diverse range of subjects available makes it an invaluable research tool. Badal concludes that the internet has become a truly ubiquitous and democratic tool in global communications. The above is a pointer that the internet is a knowledge acquisition tool which should be utilized by university students.

2.2.2 Advantages of the Internet as an Information Source

In a study carried out on Internet use in Business Libraries, Kelly and Nicholas (1996) saw access to huge reservoirs of information as being the most attractive aspect of the internet as an information source. Many respondents in the study expressed a growing assumption that if something is not on the Internet, then the information does not exist at all. The following advantages were identified:

a) Information for free: Many people view across the information as the most attractive aspect of the Internet as an information source. Large pots of data, much of it free, are an irresistible force as far as users are concerned.

b) Competitive Information. One of the principal uses of the internet is for research projects. Users believe that the Internet is a competitive source of information because it often hosts the latest statistics or information from an organization before they are able to publish and disseminate it through the normal channels. Some World Bank updates, for instance, are available on the Internet long time before they are available on the hard-copy format. Internet resources are often

more up-to-date than their printed equivalents, and currency matters a lot in business and research

c) Software support. The internet is a rich source of information on computer manufacturers and software companies. It is possible to download software updates and packages from the Internet, thereby cutting costs and keeping the software up-to-date.

d) Communication. The internet makes it possible to communicate with anybody who has an e-mail address, without the consideration of the social hierarchies. It is also a good delivery system; it is often quicker than the postal system. It will increasingly be used to deliver research results or reports to users or clients and to order publications and services just as the fax is used now to cut down on time.

e) Ease of use. Dickson (1997) notes that the success of the web lies in the fact that trying to explain it is actually a lot harder than simply sitting down and using it. Vast number of people who know little or nothing about computers or the technology underpinning the web use it everyday without ever worrying or wondering how the documents are glued together or how the information is delivered to their screens. Setting up your own web pages needs a little more knowledge, but for the end-user who simply wants to use the information and has a rudimentary knowledge of a personal computer or a Macintosh, it should take little more than an hour to learn how to use a web surfer effectively.

2.2.3 Disadvantages of the Internet as an Information Source

According to Kelly and Nicholas (1996) it was revealed that there is a definite feeling amongst users and information professionals that the internet, as an information source, has been over-hyped. While they are keen to keep an eye on internet developments, information managers have not yet been persuaded that the internet represents a genuinely useful information tool. The problems highlighted are outlined as follows:

a) Lack of information. Dickson (1997) observes that the internet holds the promise of being a global library overflowing with information, but he continues to note that a library without a catalogue and librarians is of limited use to all but determined readers. The internet is thus in danger of becoming a huge unassisted library accessible to only the technical skilled. He further notes that it has long been possible to use features such as FTP (File Transfer Protocol) and telnet to exchange documents between users on different internet linked computers; and products such as Gopher was an attempt to make it simpler to locate information on the internet as a whole, but none of these products was entirely intuitive or user friendly, and the internet lacked a unified approach to information exchange. Users feel that there is real need for better internet directories, created by people with some knowledge of indexing and cataloguing. Many of the present internet directories have been produced by internet IT wizards who have very little knowledge of the pitfalls of organizing information.

b) Lack of reliable information. In business and research, authority of data and its reliability are always chief concerns. Research librarians believe that, often, it is

obvious how the information on the internet have been gathered, nor the date of the information. Collins (1996), for example, argues that the main web or internet deficiencies currently are questions about the accuracy of the information available and the relative paucity of talented reviewers. It is therefore still necessary to have accesses to books and other hard-copy sources to verify internet information, especially company information which is susceptible to unauthorized alteration.

c) No real content. While internet sites (home pages) look exciting at a first glance, there is often disappointing little information available; most internet sites have been created to market a product or publications rather than give it away for free.
d) Too much information. Users believe that the internet is for people who have enough time to browse through irrelevant information in search of something useful.
e) But for researchers and businessmen, this browsing becomes rather time-consuming.

2.2.4 Internet and the Information Gap

The information superhighway has tapped the potential of computerized information flows such that information from any corner of the world can be transmitted to any part of the world via the collection of networks-the internet. However, it is feared that this technology may only benefit the developed world which has the best infrastructure to support the reaping of maximum benefits out of its use. The developing world – with its poor telecommunications links, lack of appropriate

computer technology, poorly developed information databases and networks, and inadequate commitment of national and regional information policies – may be left out and marginalized even further in this information age (Brown, 1998).

An investigation into the scientific information systems in the UK (Royal Society, 1981) reported that British scientist were seriously concerned that if electronic means of communication became more widely used and to that extent, superseded printed journals and books, scientists in the developing world become more cut off from recent advances in science, with the gap between the information rich and the information poor widening. Though this may be a problem in communication, today most developing countries have made a commendable effort in improving electricity supplies, at least to major cities.

Dickson (1997) also expresses the same fear on the potential of a widening gap as the internet technology advances. He notes that the growth of the internet may end up being a two-edged sword for Africa. On one side of the argument, the sudden surge in, and demand for, telecommunications bandwidth emphasizes the yawning infrastructure gap between many African locations and the average western countries. This therefore created the need for this study to analyze the attitude of the education students on internet as a knowledge acquisition tool among university students in Kenya.

2.3 Internet and End-User Searching: A Threat to the Information Professional?

The internet and other online information services present opportunities for the end-user to be directly connected to information resources without having to go through either a human intermediary or an information system such as a library. This has raised questions on the future of the intermediaries – whether they will continue to be necessary or not. Studies conducted so far, allay these fears; it is believed that the intermediaries will continue to be necessary (Brown, 1998; Harrington, 1998; Harvey, 1998).

Mason (1991) sees the move towards end-user access to electronic systems as having been evolutionary rather that revolutionary process, although he claims that the process is likely to accelerate over the next decade as end-user computing becomes part of the daily life of the research scientist. However, though the work of the information department is changing, Mason sees no sign that its role is becoming less significant – if anything, the move towards a wider information management role is giving the department a higher profile. He assures that educational information departments have nothing to fear from the end-user revolution if they are prepared to meet the challenge.

To paraphrase the observation by Tenopir (1996) while researchers online were once intermediaries that population has reduced giving way to specialized end-user (e.g. lawyers) and now general end-users. Tenopir assures that all still coexists and will continue to do so. The intermediary, however, will still be needed: his role will be to

teach the patrons how to access a variety of online sources and also address larger ethical issues such as copyright, plagiarism, etiquette and what to do with all the information retrieved.

Hagloch (1996) accepts the fact that computers can make large amounts of data available, but he cautions that the enormous volume of data available makes it difficult to use. He therefore observes that people seeking specific information need help finding that information and that is where information professionals come in to identify the specific websites. Hagloch concludes that the library, for example, has always served as a mediator between information and the information seeker, and it will always continue to serve this purpose. This necessitated this study to analyze the attitude of university students towards internet as a source of knowledge.

2.4 Publishing on the Internet

Once those feared words “publish or perish” were just a threat that hung over the heads of junior lecturers trying to ensure their continued employment. Strauss (1997) observes that today it is not enough for the academia to have multitudes of their erudite discourses published in the most distinguished journals. He states that today, to avoid becoming technologically extraneous and irrelevant – which is to say invisible in the eyes of many of those critical in one’s survival and happiness – one needs to publish on the web. The popularity of online journals has grown because they reach readers faster than the printed versions, are easier to explore, and are penetrating new overseas markets, because they allow for much less expensive delivery of the journals.

Addressing the question if what contribution, if any, the publishing of professional articles in electronic form can make to scholarly and research communications, Cox (1995) described the five key publishing issues which have emerged along the way: access considerations, database quality, support, marketing and staffing. This technology is important for students-teachers to enable them to compete favorably with other student's world wide in publishing on the internet. This necessitates the need for the study to find out the student teachers use of the internet as a source of knowledge.

2.5 Internet Evolution and Revolution

In an assessment of the internet evolution and revolution, Burrows (1993) notices its changing character from a research and educational tool to a growing commercial tool, and examines criticisms made against the changes. He, however, fails to give any recommendations on what should be done to ensure that the internet continues to serve its initial purposes – research and education. He also examined the growth in the size and use of the internet and described the three main network retrieval tools: Archie, Gopher and the potential of Mosaic to integrate the resources available on the internet, and discusses the future role of cataloguers and cataloguing in the world of the internet. This study, however, took a general stance and was not focused to the needs of a specific user group. The results were therefore, of a very general nature, unlike the stance taken by the present study of a distinct professional group of users.

Lacroix (1994) in his analysis of the internet resources, notes that the basic electronic mail capability of the internet allows colleagues to collaborate, communicate and participate in daily continuing education; internet terminal and file transfer capabilities provide improved access to traditional resources and first time access to new electronic resources; through the internet, online catalogue are available worldwide, and document delivery is faster, cheaper and more reliable than before; and institutions can make organizational, full text, online and publication information available through internet tools such as direct file transfer protocol (FTP), menu based Gopher and hypertext based Mosaic. As has noticed in earlier studies, though, the focus of this study was to the general internet user and not any specific group.

There are studies which have tried to focus on specific groups of users and stakeholders, though they all failed to focus on the users themselves and how they (the Users) perceive the Internet services. One such study by Cherhal (1993) aimed at making known to librarians and information scientist the wealth of information available to 47 countries in the world on the Internet and to identify the tools needed to access it. A study by Brainerd (1993) was nearer to taking the case of a particular use group. He looked at the kinds of business information resources available through the internet, focusing on the way of accessing databases and conferencing facilities on the networks. Morgan (1995) however observed that for many university libraries and their users, the internet represents potential and potential does not satisfy information needs, but it does raise expectations which in turn place enormous pressure on the

library and the information services. Others contributors on the internet included Kempf (1994) and Mastern (1993).

Flannery (1995) concluded that although the number of resources available on the internet continues to expand exponentially, finding appropriate resources is still a fragmented, random operation. He outlined the major issues that must be considered in cataloguing electronic resources. On this lack of organization and perhaps questioning the integrity of the Internet information, White (1994) noted that as governmental, academic and corporate organizations prepare themselves for accessing the information superhighway, it is becoming clear that there has been little planning about what to do about the huge quantities of unevaluated and perhaps unwanted information which threatens to engulf the unsuspecting user. The development of the information intermediaries, who can be trusted to shield the end user from the information he does not want and that will only waste his time, is already the horizon. White continued to discuss the role the librarians and the information professional could play in this process of giving the user the important and shielding the user from the trivial.

The internet revolution will most probably affect the operations of the libraries. This view is exemplified by Chen (1994) who notes:

> *Today's changing society, characterized by continuing technological progress, and societal and economic*

> *changes, poses new challenge to libraries. The library has to move beyond its role of a store house to be a dynamic and aggressive information provider of both its countries information resource as well as being an effective in the global information network providing access to global information. There is a need for global coalition building amongst libraries which will make the global linking of multimedia information toward an eventual global digital knowledge base. (p. 5).*

Chen presents a conceptual scenario of the digital global library and considers how it can be achieved, barriers to its implementation and content related problems. He however, does not fail to define the users of this digital library nor does he base it on any specific needs arrived at from a needs assessment exercise.

On whether the print will lose to the expanding electronic information, Giuliano (1994) reviewed literature on the situation of newspapers in the US in the context of the current transition to home interactive information services. He found no doubt in the fact that the coming of broadband interactive channels to the home will offer full electronic counterparts of a newspaper – services that embody the printed word as well as the graphics, art, sound and photographs, including personalized, interactive, multimedia, with a full range of content, advertiser and reader features. Guiliano (1994) also examined whether the familiar daily printed newspaper role can survive in

this emerging environment, and what will be the roles, if any, of today's newspaper companies in the production and delivery of a fully electronic newspaper. He observed that although the information will remain more or less the same, the electronic newspaper would have the added advantage of currency, widespread reach and convenience.

The disabled have not been left unconsidered in the study either. In a study, Astbrink (1994) highlighted the common ground bulletin ground in South Australia, established to ensure that people with disabilities had access to information sharing and remote training facilities, and which now also functions as a means of consumer advocacy, through group discussions. He also outlined developments on the internet which could be of interest to the disabled people, for example, in accessing educational facilities and special facilities.

Mathieu and Woodward (1995) found out in their study that the internet is being used by management professionals to support information gathering and research activities. They however caution that the different sources of information on the internet – electronic periodicals, online database, and messages posted to groups of readers and electronic mail – must be carefully utilized by the prudent manager.

Plantec (1995) provided a general discussion of the advantages to be gained by using the Internet and being involved as information providers. Smith (1995) examined the potential of the Internet for the delivery of information in distance information and

emphasizes the convenience of the Internet in delivering information to geographically dispersed communities and individuals and in removing barriers such as cultural diversity. In agreement with other researchers, Arnfield (1994) revealed the potential of electronic mail for exchanging information rapidly and cost-effectively with a large number of other people regardless of their location, time zone or personal availability. This makes it crucial to carry out this research on the internet as knowledge acquisition tool in Kenyan universities.

2.6 Internet Service Providers (ISP)

These are either commercial public access companies which provide users with access to internet at a fee, or privately owned research institutions providing their employees with access to the Internet. They act as gateways through which users connect their computer terminals to the global network of computers and the vast volumes of information resources housed therein in most countries the activities of the ISPs is coordinated by the individual countries posts and telecommunication agencies (PTT) which provide frequencies and bandwidth to ISPs and other internet users. The ISPs then sell internet connection and other services directly to the users

In Africa, Jensen (1996) observes that an important development has been the alacrity with which African public telecommunication operator (PTTs) have started to establish internet services. This Jensen notes follows trends in Europe and North America where almost all of the major PTTs have established the same. If this trend continues and considering the much larger economies of the scale that the PTTs can

apply to providing internet services, it will be hard for the private ISPs to compete favorably. Fears of PTTs selling internet directly to users have been expressed in Zambia and South Africa. There is a move by ISPs toward forming national associations to regulate healthy competitions in South Africa. Four leading ISPs have joined forces and formed an association to tackle country-wide problems. Jensen (1996) notes that the move towards industry cooperation promises faster local connectivity and better all round services for local business and home users.

The Kenya internet scene has also been quite robust over the past few years as more and more ISP enter the market. internet access in Nairobi has grown significantly as ISP have widened their services from simple e-mail and local dial up services and networks to the powerful and entertaining world wide web Strauss (1997). These improvements in services have opened a whole series of research, educational and commercial opportunities with internet users worldwide. Both local and International ISPs compete for the local market. There is no government owned ISP in Kenya. Current services offered by these service providers include: e-mail, web browsing, local online shopping, Reuters news and business feeds, online interactive games, encyclopedia, internet facts services, local business, directory, teleconferencing hub services offering bureau and internet web design and production services.

There remains a technical challenge however primarily related to the telecommunication infrastructures in the country, computer availability and access and levels of training in networking technology, gender differences have also been realized

in internet use. For example, form-net Africa in reported in 1996 that of all its users, only 13% are female, indicating that significant progress still need to be made in improving women's access to the internet. This shows the need for the initiative to analyse internet as a source of knowledge among university students in Kenya by considering gender as one of the variables.

2.7 The Future of the Internet

Many technologies, especially in the computer field are not permanent. They become obsolete almost as soon as they are discovered. The internet technology has taken the whole globe by storm and new technologies are continuing to be developed based on, or to support the internet technology. Many companies and individuals are also investing in the technology. This calls for several questions to be raised especially about the future of the internet (Jensen, 1996).

In a project barked mainly by the university and the US National Council of Science Foundation (NCSF), an internet 2 has been proposed which presents a possible attraction to researchers because it would spawn out the "killer applications". In internet 2, estimated to be as much as 100 times faster than the current one, researchers will be able to use a virtual express lane to send their data, by- passing it to other users.

Video conferencing will be the major application of this new Internet. Just as the current internet allowed for speed and convenience of sending e-mail messages,

internet 2's instant transmission of videos and sound could permit researchers and other personnel to attend meetings by way of the computer, teach classes online in real time moved, store movies and music in digital store houses and set up a visual lab, whereby several scientists can maneuver intricate computer models in a shared area.

Intranet - customized in-house version of the internet – are also becoming very popular. Jacobs (1995) explains that the term intranet generally means "applying technologies that developed on the internet especially World Wide web software, to a corporations' private network". Blackmore (1997) defines the Internet concept as that of exploiting internet opportunities within an organizational based computer environment to aid the progression toward the seamless of both internet-based and in-house generated leading material. Blackmore, in a study of Wirral metropolitan college internet development to improve student and staff access to internet-based and in-house generated learning resource – found out that the internet as a quality filter and interface to the Internet. Other benefits discovered by Blackmore include easy-to-use technologies of navigation; access to information in both internal and external networks; and more economical use of bandwidth through a single connection for many users.

Heydenrych (1996) observes that the explosion of the internet is becoming the networking story of the future. He claims that although the internet has marveled at the speed of its growth, the speed of intranet technology will dwarf this as corporations realize that the intranet is the fastest, most convenient way of deploying enterprise-wide messaging.

Baer (1997) highlights some considerations to be taken into account when developing an intranet. Had this to say:

> *No less than any other means of communicating and presenting information, an intranet must be geared to organizational objectives through proper information management procedures. For smaller organizations, an intranet need not compromise all of the standard components, and use complementary technologies to incorporate legacy documentation systems at a minimal cost and effort. The importance of gaining management commitment should not be underestimated, and an evolutionary approach can be the key success (p. 281).*

Contributing on the future of internet, Gordon and McKenzie (1994) pointed quite a bleak future when they note: “One of the earliest large network systems, the internet, is likely to be replaced by the much faster National Research and Information Network (NREN)”. And to emphasize this take-over, Albercrico (1990) observes that the NREN will “eventually provide users with high speed access to enormous resources of computing power and enable them to exchange large quantities of computerized information”(p. 224).

Also expected to grow is the world wide web which, as observed by Thing (1997), promises new ways to view internet's treasures as the vast amount of information on the Internet grows. Thing (1997) continues to note that although only a few years old, the web already offers over 150 million addressable pages. Not only is an information tool, the web becoming a multimedia experience. He concludes that in its next stage, the web will increasingly become an integral part of the personal computer. And to show the mysterious-like growth of the web, Thing states:

> *New users find the web exhilarating, frustrating and sometimes exhausting. As they learn to use it, many users find that the web can simply be a useful tool to draw upon now and then; no need to surf. Then one day, a colleague tells them of a new site, and they find themselves under its spell again. The web is like that (p. 105).*

It can be noticed that the internet technology is here to stay. Major computer companies for example both software and hardware are constantly modifying their products (or develop new products) based on the internet technology. The NREN plus the many intranets being developed everyday are using the internet technology – especially the TCP/IP protocol and the web – in their network. However when used effectively, the internet expands access to a world of knowledge and people that student cannot experience in any other way. If you do not know how to access the

internet, learn this skill as soon as possible on your own computer. University students will benefit from the ability to navigate the internet. Two good sources for learning about the internet and how to bring it into your classroom are Cyber educators.Teaching with Technology above is prove enough that the study on the internet as a knowledge acquisition tool in our universities is very timely.

2.9 Summary

Students today are growing up in a world that is far different technologically from the world in which their parents and grandparents were students. If students are to adequately prepare for tomorrows jobs, technology must become an integral part of schools and classrooms.

The technology revolution is part of the information society in which people now live. People are using computers to communicate today the way people used to use pens, postage stamps, and telephones. The new information society still relies on some basic competence such as good communication skills, the ability to solve problems, thinking deeply, thinking creatively, and having positive attitudes.

However in today’s technology-oriented world, how people pursue these competencies is being challenged and extended in ways and at a speed that few people had to cope with in previous eras (Collis, 1996).

As has been observed, much literature exists on internet in relation to its support of information in education and its impact on academic performance in universities Kenya. However, the literature review reveals that Kenyan information systems are

limited for educational researchers and there is, therefore, some need to explore alternative or supplementary sources of information. The internet, it was discovered, has a lot of information resources which could be exploited by educational researchers. However, the literature also shows that computer ownership in the country is still low and the internet connections are almost negligible. With the advent of the internet, education has definitely benefited in more ways than can be mentioned, and although it will not take over the traditional methods of education it will continue to play a major part in improving the educational standards in Kenyan higher educational institutions, which has prompted the researcher to carry out this study of internet as a source of knowledge among students in the Kenyan universities which will contribute towards filling the gap between information technology advancement and acquisition of knowledge.

CHAPTER THREE

RESEARCH METHODOLOGY AND DESIGN

3.0 Overview

This chapter describes the procedure and instruments used in the study. It has a description of the study area, research design, the target population, the sample, sampling techniques and research instrumentation, the validity and reliability of the research instruments, operation of variables, data collection procedures.

3.1 Description of the Study Area

The study was carried out at Masinde Muliro University of Science and Technology which is located in Kakamega town. The town is quickly changing its phase following the establishment of the university. Kakamega is situated at Latitude 0^0 16' 15" N and Longitude 34^0 44' 30" E. The institution has grown from strength to strength as a college of arts and applied sciences to its present status, and it's almost succeeding to becoming a refuge for those seeking jobs as well as learners thirsting for higher education. Within a spate of 5 years the college has been elevated to the status of a university which has churned out its pioneer graduates armed with their hard worn degrees.

It should be noted that Kakamega which doubles as the headquarters of Kakamega South District and Western Province, has stagnated in terms of industrial and economical activities from the time it was placed on the Kenyan map in the year 1902

or thereabout. The town does not have any industry like one would find in other major urban centers in the country, except for the formal sector which includes blacksmith, artisans, mechanics which cannot be said to be of substance either.

The first 24 students joined Western College (WECO) on March 24th, 1997 enrolling for certificate and diploma courses, which included mechanical and motor vehicle, electrical, electronic, agriculture, water, building, architecture, accounting, finance etc. In December, 2002 WECO became Western University College of Science and Technology (WUCST), following its elevation to a constituent college of Moi University. The institution changed the status to a full fledged university early 2007 after Kenya's third president assented to a bill, which changed its status.

The MMUST vision is: To be a centre of society through engagement in dynamic knowledge creation and application. Its motto is "University of choice". The university is already responding to the socio economic needs of the local community and the country at large. It is fulfilling this through various capital development projects. The MMUST community is proud that it can participate fully in the economic activities for instance the increase in small scale industries, shops and super markets as well as jua kali enterprises i.e. boda boda, taxis to cope with the ever growing population of the students, staff and the ordinary public.

The University has two faculties; Faculty of Science and Engineering (FSE) and Faculty of Education and Social Sciences (FESS). It also has a centre for Disaster

management and Humanitarian assistance (CDMHA), school of graduate studies, research and extension, school of open learning and continuing education, science and Technology and industrial linkages. The university operates on two modules, namely; the privately sponsored students programme and regular programme.

Masinde Muliro University is only five years old but students pursuing their respective careers can expect to achieve a certificate, diploma or degree up to the highest level. The programmes were geared towards meeting the needs for continuing education through fulltime, evening and weekend, part time and school based classes. MMUST is also offering courses such as, Bachelor's degree in sugar technology, bio technology, social policy, social work, criminology, journalism and mass communication. A radio station, MUST 109.3 FM was launched as a training ground for students pursuing journalism and mass communication.

MMUST has also formed linkages with other institutions in Kenya and foreign countries through signing of memoranda of understanding. They include University of Coventry and Manchester Metropolitan in the United Kingdom, G7 Systems Kenyatta University and Jomo Kenyatta University of Agriculture and Technology.

I chose the university as my area of study because it could meet the objectives of the study. Being younger than most of the universities at that time, the student population was manageable compared to other universities and most of its programmes were still being put in place like the use of ICT.

3.2 Research Design

It is a quantitative study, the study employed a causal comparative technique in investigating education students' attitude towards the internet as a knowledge acquisition tool among university students in Kenya. According to Mugenda and Mugenda,(1999) a causal comparative design is considered appropriate as the cause could not be manipulated. The students were either already using the internet or not. In such research, the researcher has no control of the independent variables as they already could have occurred (Kerlinger, 1986). In a quantitative methodology, people are active subjects with thoughts, feelings, meanings, intentions and an awareness of being. It therefore seeks to discover the meanings and internal logic that directs the actions of the actors in order to adequately understand and explain social behaviour .

3.3 Variables

There are two types of variables, namely; independent and dependent variables which were considered in this study based on the research design adopted. In this study, student- teachers attitude, mode of study, student's age, teaching subjects and gender were the independent variables because their effect on the use of the internet as a knowledge acquisition tool were investigated. Consequently, the attitude towards use of internet for knowledge acquisition formed the dependent variable.

3.4 The Population

The research population was 2,538 Education students in Masinde Muliro University of Science and Technology MMUST. Academic year (2008/2009).The accessible population consisted of third year education student were 938. Education students were considered as they are viewed as the potential people who determine the socio-economic development rate of developing countries such as Kenya. They are to prepare the next generation in this dynamic world which is characterized by rapid technological change.

3.5 Sample Size

The study sample comprised of third year education students. The choice of this group was arrived at by the researcher after considering the fact they had stayed for long in the campus thus, they have been exposed to various programmes, activities or assignments that require the use of computers. That is, they are final consumers and/or products of technological changes that are taking place all over the world. The students who

responded to the questionnaire were 320 out of 938 education students. The sampling procedure used to select the 320 participants and the description of the distribution of the sample size according to the module and teaching subject is described in the next section.

3.6 Sampling Procedures

Stratified random sampling was used to select participants of the study. According to Oso and Onen (2005) this type of sampling seeks participants with specific characteristics, experience, behaviours representing one or more perspectives deemed relevant to the research goals. The participants were categorized into two groups, based on the module study; regular students and self-sponsored students. The list was obtained from registrar of students. From each module of study, were further stratified according to gender and teaching subjects.

From each subgroup, individual students were randomly selected. After sorting out the participants in each subgroup based on their registration numbers, each admission number was written on a piece of paper, folded and then placed in a container. The papers were mixed thoroughly before picking the required numbers randomly. The same process was undertaken in the other stratum. This was done to ensure that there was uniform representation of the participants. A total of 320 participants were selected and used in the study.

3.7 Data Collection Instrument

Collection of data was done using questionnaire for the students. The selection of the questionnaire as a tool for data collection was guided by the nature of data to be collected and objectives of the study. In addition, the instrument enabled the researcher to gather information from a larger number of participants within a short

time. The questionnaire was used because the study was concerned mainly with variables that cannot be observed directly.

The self – administered questionnaire was used to gather information on module of study, teaching subjects, age, gender and academic matters regarding the use of internet as a knowledge acquisition tool. Items in the questionnaire were obtained from validated self-efficacy scale. The questionnaire had three sections. Section A had six items (p.86) focusing on collecting the biodata which included module of study, gender, age and teaching subjects. Section B had 20 items (p.87) focusing on the use of internet for knowledge acquisition. The statements were rated on a five-point likert scale ranging from “Strongly Agree” with a score of 5 to “Strongly Degree” with a score of 1. The participants were required to respond by ticking in the box corresponding to the option which best describe feelings about the internet as a knowledge acquisition tool. The scores ranged from 20 to 100. The tendency towards the high scores indicated that the participants utilized internet for academic work.

Section C had also 20 items (p. 94) on a five-point Likert scale which sought to collect information regarding students’ attitude towards the use of internet services to acquire knowledge. The scores ranged from 20 to 100. The tendency towards the highest score indicated that the participants were positive towards utilization of Internet services for the purpose of acquiring knowledge.

3.8 Pilot Study

The main purpose to pilot the questionnaire is to ensure as far as possible that the items detect the kind of responses the researcher intends to get. That they are acceptable in terms of their content, and they adequately cover all aspects of the unit which the researcher particularly wishes to explore. Secondly, the pilot study was done to provide the researcher with the opportunity to get firsthand experience about the nature of the research study. Thus, through the pilot study, reliability and validity of the instrument determined.

A pilot study was done using students in the Faculty of Science and Technology of MMUST who did not participate in the final study. With the help of Heads of departments in the Faculty of Education and Social Science, questionnaire for students was administered to 120 students. After the researcher had completed collecting data from the students, the same process was repeated after two weeks using the same students from the Faculty of Science and Technology.

3.8.1 Reliability of the Questionnaire

The reliability of an instrument refers to the extent to which measures give consistent results (Selltiz, Wrightsman, & Cook, 1976). In other words, it refers to the degree of measurement error. Reliability is an important concern for two reasons. First, reliability is a pre-condition of the success of the instrument in measuring what it is supposed to measure. If a research instrument does not possess a good degree of

reliability, then it is not likely to have validity. Secondly, unless an instrument measures a variable that is relatively consistent, there is little hope of determining by means of that instrument whether changes in the variable are the result of other variables or are merely the reflection of the unreliability of the instrument.

The two sets of scores that were obtained during the pilot study were used to determine the stability of the research instrument. The reliability index of the instrument was calculated using Pearson's Product Moment Correlation (r) from the test – retest scores. The result obtained was a reliability coefficient of r =1.79 for academic matters and r=1.67 for attitude towards the internet. According to Mugenda and Mugenda (1999), a positive correlation (r) of 1.50 and above is a strong one and hence the instrument was deemed reliable.

3.8.2 Validity of the Questionnaire

According to Mugenda and Mugenda (1999) validity is the accuracy and meaningfulness of results which are all based on the research results. It refers to the extent to which a research instrument measures what it purports to measure. The study was concerned with aspects of learning. Therefore the usual procedure of assessing content validity of a measure is to use professionals or experts in a particular field which is highly subjective (Mugenda & Mugenda, 1999).

The content validity of the instrument was verified with the help of supervisors and other specialized lecturers of School of Education, Moi University. Upon their,

suggestions, comments and corrections, the instrument was refined into the final instrument used in the study. Also, content validity of the instrument of data collection was determined during the pilot study, where the responses of the participants were checked against the research objectives. For research instrument to be considered valid, the content selected and included in the questionnaire must also be relevant to the variables being investigated (Kerlinger, 1986).

3.9 Scoring the Data Collection Instrument.

Items in the questionnaire for the student teachers that were concerned with biodata were categorized in terms of module of study, gender, teaching subjects and age. Items in section B and C of the questionnaire were rated on a five point Likert scale. The scores ranged from strongly Agree (SA) – 5 points, Agree (A) – 4 points, undecided (U) – 3 points, Disagree (D) – 2 points and strongly agree (SD) – 1 point, if the statement was positively stated. For negatively stated statements were reversely scored. The aggregate score for the 20 items in the questionnaire ranged from 20 points to 100 points. A total of the scores were computed which generated data on internal scale of measurement: The categorization for the utilization of internet was as follows:

52 and below: Low (Below average)

53-68 : Average

69-100 : High (Above average)

3.10 Data Collection Procedures

The categorization for the nature of attitude was as follows:

20 – 52	Negative
53 – 68	Neutral
69 – 100	Positive

Once the copies of questionnaires were ready, the researcher will sought permission to conduct the study from the Ministry of Higher Education Science and Technology (Appendix 6). Permission was also sought from Masinde Muliro University of Science and Technology. A letter requesting for consent to carry out research was prepared and sent to the Dean of The Faculty of Education and Social Sciences. The letter informed the dean about the objective, nature and significance of the study. The date of the exercise was agreed upon in liaison with the University administration.

The questionnaire for the student teacher was administered to the participants by the researcher. The participants were asked to read the instructions before responding to the items in the questionnaire. The instrument was administered by the researcher in person to ensure maximum return rate. The supervision was carried out by their lecturers who then handed the completed questionnaires to the researcher.

3.11 Data Analysis

The collected data was first scored and coded. Descriptive statistical techniques; namely; means, standard deviations and frequencies were employed in the analysis of

data to make distinctions. The Pearson product moment correlation, t-test and Analysis of variance (ANOVA) were the inferential statistics used to analyze the effect of attitude, module of study, gender, age and teaching subjects on the use of internet as a knowledge acquisition tool. All hypotheses were tested at a level of significance of 0.05 and the degrees of freedom depending on the particular case as was determined. This value (= 0.05) was chosen because the sample size was adopted from figures calculated on the basis of 0.95 level of confidence. Table 3.5 gives a summary of the inferential statistics used to test the hypotheses.

Table 4.12: A summary of Inferential Statistics used in the data analysis

	Variable Analyzed	**Inferential Statistics**
1.	To find out the attitude of students towards internet as a knowledge acquisition tool.	ANOVA
2.	Relationship between students' attitude towards internet and the use of internet as a acknowledge acquisition tool.	Correlation
3.	Module of study and use of internet for knowledge acquisition.	t-test
4.	Student teacher's age and use of Internet for knowledge acquisition.	ANOVA
5.	Teaching subjects and use of Internet for knowledge acquisition.	t-test
6.	Gender and use of Internet for knowledge acquisition.	t-test

3.13 Ethical Considerations

The major ethical problem in the present study was the privacy and confidentiality of the respondents. Collecting data entailed respondents writing their module of study and age. This in itself was an infringement on the confidentiality of the participants. However, participants were assured that the information given will be treated confidentially and for the purpose intended only.

CHAPTER FOUR

DATA PRESENTATION, ANALYSES AND INTERPRETATION

4.0. Overview

This chapter presents the results of data analyses on the attitude of education students towards internet as a knowledge acquisition tool in Masinde Muliro University of Science and Technology. It reports the results of data analyses on the effect of student's attitude on the use of internet as a knowledge acquisition tool, and effects of module of study, age, teaching subject and gender on the use of internet as a tool for knowledge acquisition in MMUST. The reporting of statistical results in this chapter follows a fairly consistent pattern: a reference to the research objective, presentation of pertinent descriptive statistics, inferential statistics and appropriate interpretation are presented. The chapter begins with the demographic description of the participants involved in this study.

4.1. Demographic Description of Participants

The study sample comprised of third year education students. The choice of this group was arrived at by the researcher after considering the fact they had stayed for long in the campus thus, they have been exposed to various programmes, activities or assignments that require the use of computers. That is, they are final consumers and/or products of technological changes that are taking place all over the world. The students who responded to the questionnaire were 320 out of 938 education students. The sampling procedure used to select the 320 participants and the description of the

distribution of the sample size according to the mode and teaching subject is described in the next section.

The distribution of the accessible population according to gender and mode of study is presented in Table 4.1.

Table 4.1: **Demographic description of accessible population based on gender and module of study**

	Mode of Study		
Gender	Government	PSSP	Total
Female	242	281	523
Male	169	246	415
Total	411	527	938

From Table 4.1 it is revealed that majority for students are self sponsored (n=527). This can be explained by the fact that government sponsored students are admitted based on bed spaces, but PSSP students are admitted base on attainment of the minimum required entry grade. Therefore, through Joint Admissions Board (JAB) many students are left out.

The accessible population was also described according to teaching subjects. The statistics based on this variable are presented in table 4.2.

Table 4.2: Demographic description of accessible population based on teaching subjects

Teaching Subject	N	%
Art - Based	617	65.78
Science Based	321	34.22
Total	938	100.00

Table 4.2 showed that majority of student teachers (65.78%) take arts-based subjects. This is because of the higher number of the subjects categorized are arts-based compared to a few subjects under science based. In addition, performance of students in science based subjects at secondary school level is normally below average. Therefore, few students qualify to be enrolled in Bachelor of Education (science) programme.

Distribution of the sample in terms of variables is presented in section 4.3.The demographic of the participants according to mode of study and teaching subjects is presented in Table 4.3.

Table 4.3: Demographic Description of Participants based on Module of Stuy and Teaching subject

	Subject		
Module	Art -Based	Science - Based	Total
Regular	61	43	104
Self-sponsored	154	62	216
Total	215	105	320

Data in Table 4.3 shows that the highest numbers of participants are enrolled to study art-based teaching subjects. It is also revealed that a number of education student are self-sponsored. This can be explained by the fact that there is increased quest for university education and more people than before are investing in education. In addition, students who join regular programmes in Kenyan Public Universities wait for approximately two years before they join universities. In contrast, a student who meets the minimum university entry requirement can join any university of his/her choice within three months under self-sponsored programme. Therefore the programme has attracted more students than the regular programme.

Gender was another demographic variable used to describe the distribution of the participants. Based on gender, the largest group of students in the faculty of education and social sciences are male students. This reveals gender disparity in institutions of higher learning. The demographic description of the participants are presented in Table 4.4

Table 4.4: Demographic Description of Participants based on Gender

Gender	N	%
Male	183	57.19
Female	137	42.81
Total	320	100.00

4.14 Students' Attitude and use of Internet as a Knowledge Acquisition Tool

The second objective of this study was to: Investigate the relationship between students' attitude towards internet and the use of internet as a knowledge acquisition tool. To achieve this objective the following research question was posed; what is the relationship between students' attitude towards internet and the use of internet as a knowledge acquisition tool? To answer this question, questionnaire for the student teachers was administered to the participants and their responses scored for each student to have a score on use of internet (sub-scale B) and another score on attitude of the students (sub-scale C).

To test whether the two sets of scores correlated significantly, Pearson Product Moment Correlation was conducted to determine correlation coefficient. The result of the analysis indicated that there was a statistically significant correlation between the two sets of scores, $r = 0.668$, $p=0.01$. From this result, it was concluded that there is a relationship between student teacher's attitude towards the internet and use of internet as a knowledge acquisition tool. Consequently the null hypothesis HO2: There is no

significant relationship between students' attitude towards the internet and the use of the internet as a knowledge acquisition tool was rejected.

1.15 Module Study and Use of Internet

The third research objective stated that: to find out if there is a difference between regular students and self-sponsored students in the use of internet as a knowledge acquisition tool. To achieve this objective the following research question was posed: Is there any difference between regular students and self-sponsored students in the use of internet as a knowledge acquisition tool? From responses to sub-scale B participants were categorized into two groups according to the module of study as those under regular programme and the self-sponsored students. The mean scores of these groups of participants on use of internet for knowledge acquisition were computed and their results are presented in table 4.15.

Table 4.15: Module of study and Use of the Internet as a Knowledge Acquisition Tool among Regular and self sponsored students

	Use of Internet		
Module of study	N	Mean	SD
Regular	104	69.06	17.77
Self-sponsored	216	72.46	14.65
Total	**320**	**71.35**	**15.78**

The results of the descriptive statistics shown in Table 4.15 indicate that self-sponsored students highly utilized the internet as a knowledge acquisition tool whereas regular students averagely made use of the internet for knowledge acquisition. To test whether or not these two mean scores were significantly different, a t-test for independent samples was conducted. The result of this analysis showed that there was no significant difference between the two mean scores, t (318) = 1.812, p=0.05. From this result, it was concluded that there is no significant difference between regular students and self-sponsored students in the use of internet as a knowledge acquisition tool. Teacher students under regular programme and those under self-sponsored programme do not differ significantly in their use of internet as a knowledge acquisition tool. Students under regular programme and those under self-sponsored programme do not differ significantly in their use of internet for academic work. However, self-sponsored students make use of the internet (x=72.46) more than regular students (x=69.06)

4.16. Students Age and Use of Internet as a Knowledge Acquisition Tool

The fourth objective investigated the effect of student teachers' age on the use of internet as a knowledge acquisition tool. From this objective; the fourth null hypothesis that stated that; "student teacher's age does not have any statistical significant effect on the use of internet as a knowledge acquisition tool". The participants were requested to indicate the range of their age. The participants were categorized into four groups with respect to their age. The mean scores of the groups

of participants on the use of internet as a tool for knowledge acquisition were computed and the results are presented in table 4.16.

Table 4.16: Student Teacher's Age and Attitude towards use of Internet

		Use of Internet	
Age	**N**	**Mean**	**SD**
16-20 years	67	71.72	15.01
21-25 years	206	71.19	14.93
26-30 years	35	70.49	19.23
Above 30 years	12	74.58	23.61
Total	**320**	**71.35**	**15.78**

The result of descriptive statistics shown in Table 4.16 indicates that all students regardless of age 30 were above average in use of internet as a knowledge acquisition tool. However, students with an age above 30 years were more competent in the use of internet for knowledge acquisition. To test whether the four mean scores were significantly different, a one-way Analysis of Variance (ANOVA) was conducted. The result of the analysis indicated that there was no significant difference among the four mean scores statistically, $F(2,316) = 0.220$, $P=0.05$. From this result, it was concluded that there is no significant difference between student teacher's age and use of internet as a knowledge acquisition tool. Consequently the null hypothesis was accepted.

Student teacher's age does not significantly influence the use of internet for academic work.

4.17 Teaching Subjects and Use of Internet as a Knowledge Acquisition Tool

The participants indicated their teaching subjects on the questionnaire for the student teachers. The participants were categorized into two groups, namely; those enrolled for art-based subject and those enrolled for science – based subjects. From the scores on the attitude towards use of internet, the mean scores of the two groups were computed and the results are presented in Table 4.17.

Table 4.17: Teaching Subjects and Use of the Internet for Acquisition of Knowledge

	Use of Internet		
Teaching subject	**N**	**Mean**	**SD**
Art – based	215	71.46	16.15
Science – based	105	71.13	15.07
Total	**320**	**71.35**	**15.78**

Table 4.18 shows that education students in MMUST make use of internet for knowledge acquisition. To test whether or not the two mean scores were significantly

different, a t-test for independent samples was conducted. The result showed that there was no significant different between the two means scores, t (318) = 0.174, P>0.05. Consequently the null hypothesis was not rejected. Student teachers enrolled for art-based subjects and those enrolled for science – based subjects do not significantly differ in the use of the internet as a knowledge acquisition tool.

4.18 Gender and Use of Internet as a Knowledge Acquisition Tool

Lastly, this study investigated the effect of gender on student teacher's attitude towards the use of the internet as a knowledge acquisition tool. The participants were requested to indicate their gender on the questionnaire for the student teachers. Their responses on the 20 items on the Likert scale in section B of the questionnaire were scored. The participants were categorized into two groups as male and female students. The mean scores of the two groups of participants on the students' use of internet as acquisition knowledge tool in institutions of higher learning were computed and the results are represented in the table 4.18.

Table 4.8: Gender and the Use of Internet as a Knowledge Acquisition Tool

	Use of Internet		
Gender	**N**	**Mean**	**SD**
Male	183	73.35	15.29
Female	137	68.67	16.09
Total	**320**	**71.35**	**15.78**

The results of the descriptive statistics shown on Table 4.8 indicate that male students highly utilize internet as a knowledge acquisition tool than female students. This is indicated by mean score of 73.35 and 68.67 respectively in Table 4.8.To test whether or not the two mean scores were significantly different, a t-test for Independent sample was conducted. The result of this analysis showed that there was a significant difference between the two mean scores t (318) = 2.640, p=0.05.

From this result, it was concluded that gender has a significant influence of students' use of internet as a knowledge acquisition tool. Consequently, the null hypothesis was rejected. Male student teachers made use of the internet for academic work than female student teachers.

4.8 Summary

In this chapter, respective hypothesis have been tested and appropriate conclusion drawn. It has been revealed that students' attitude and gender greatly influence the use of internet for acquisition of knowledge. Also, it was revealed that students' use of internet affects their attitude towards the internet as a knowledge acquisition tool and most students had a neutral attitude. However, module of study, student's age does not significantly influence the student's utilization of the internet as a knowledge acquisition tool.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Overview

This chapter answers the research questions outlined in chapter one and makes conclusions based on the findings. The study aimed at determining the attitude of education students towards internet as a knowledge acquisition tool. The study was undertaken in `Masinde Muliro University of Science and Technology. The Instrument of data collection was questionnaires which were administered to 320 participants.

5.1 Nature of Students' Use and Attitude towards Internet as a Knowledge Acquisition Tool

The first research question was; does student teacher's attitude affect the use of internet as a knowledge acquisition tool? The results of the analysis showed that students with positive attitude towards the internet as a knowledge acquisition tool were making use of the internet in their academic work. The results obtained from the analysis showed that there was a significant relationship between student teacher's attitudes towards use of internet as a knowledge acquisition tool,

$r = 0.668$, $P=0.01$.

The implication of the finding is that student's attitude influence the utilization of internet services for academic purposes. This finding has a far-reaching implication for providing quality education and training of teacher's positive attitude provides a stimulation and encouragement in students to find out the

changes in their areas of study. Therefore, to a large extent, attitude of students in institutions of higher learning determines acquisition of quality knowledge through utilization of internet which has the most update information.

This finding can be explained by the fact that attitude provides an emotional appeal through which the student develops self-confidence in the use of internet in acquiring knowledge, (Bandura, 1986). Therefore, using affective arousal as a source of self efficacy, it can be concluded that self-confidence was determined by the third year students teachers being motivated by seeing lecturers and other students like fourth years, frequent the internet for research. The later being viewed as achievers of high social status in comparison to third years, in turn become aroused and as a result their confidence in doing a similar task is increased. Therefore, it can be concluded that self-confidence is a determinant of a person's attitude which in turn determines how the person tackles issues such as academic work.

5.2 module of study and use of internet

The second research question stated that: what is the relationship between module of study and use of internet as a knowledge acquisition tool? Responses of the participants from the two groups, regular students and self-sponsored students revealed that there was no statistical significant relationship between the two variables. This finding can be explained by the fact that internet lacked a unified approach to information exchange. Besides, most nets have too much information which requires a lot of time to browse through irrelevant information in search of

something reliable information. Due to time factor, student teachers realized that it is too costly to use internet for academic research.

The implication of the finding is that the university students have confidence in utilizing internet in carrying out academic research. Table 4.4 shows that self-sponsored students make use of the internet (x=72.46) more than regular students (x=69.06).These results can be explained using Verbal Persuasion. This is a case in which an individual learns to do something through listening to those who have gone through the experience or through verbal encouragement from teachers, peers, friends and relatives. The university students are often encouraged to use the internet for extra materials rather than relying on the library and lecture notes by their lecturers to build their self confidence.

This source serves to create interest in an activity as well as increasing ones' self confidence through positive thinking, which is believed to increase internal motivation level. If student teachers are made to use the internet as a knowledge acquisition tool it can improve their academic performance. In this study, items 4 and 17 in section B and item 16 in section C of the questionnaire of student teachers was used to capture verbal persuasion (see Appendix iii). The findings can be explained by the fact that using verbal persuasion, the self sponsored students are more keen in acquiring knowledge because of the high payment of fees and would not like to make mistakes by failing in the exams.

5.3 Student Teacher's Age and Use of Internet.

The third research question was; does the student teacher's age affect their use of internet as a knowledge acquisition tool? Analysis of the responses of the participants revealed that student teacher's age does not significantly influence the use of internet as a knowledge acquisition tool. However, the *students* over 30 years have the highest positive attitude towards use of internet.

Using direct experience as one of the sources of self confidence as identified by Bandura (1986). The most important source of self – confidence is through doing a task first hand. Experience instills a sense of high self confidence in an individual such that the person can successfully attempt a similar activity in future. Such individuals tend to rate themselves highly on self efficacy scales. For instance, a teacher who has once used a particular method of a lesson presentation will score higher than one who has never used that method when asked to indicate their level of competence at using that method. Thus the student teachers who are older in age (30 years and above) seem to have used the internet before and are more confident to use it as a knowledge acquisition tool. Therefore, when universities provide computer connected to websites, it gives a motivating force for utilization of internet as a knowledge acquisition tool.

5.4. Teaching Subjects and use of Internet

The fourth research question was; do teaching subjects influence the use of internet as a knowledge acquisition tool among student teachers? The analysis revealed that there was a slight difference between student teachers taking science based teaching subjects and those taking art-based teaching subjects.

The mean score were M = 71.46 and M = 71.13 for Arts-based student teachers and

Science-based student teachers respectively. The implication of the finding is that training programmes in local universities do have a stimulating environment that encourages students to make use of the internet for academic research. However, the slight difference shows that the Arts-based student teachers use the internet slightly more than the science students. The Arts student teachers must research thoroughly to gain knowledge while the Science student teachers use experiments and formulas.

5.5. Gender and utilization of Internet services.

The last research question was; is there difference among male and female student's in the use of internet as a knowledge acquisition tool? When the responses of the participants were analyzed, it was revealed that male students felt that the internet is an important tool in acquiring knowledge through research (M = 73.35). This was followed by female students with a mean score of M = 68.67. This can be explained using vicarious experience which is another important source of self confidence. It refers to the kind of learning that takes place through observing another person's performance on a given task. Although the observer does not directly share in the activity. Bandura, (1986) asserts that the observer gets the indirect reward and punishment in the same manner that the actor does. This is how children learn by observing the behaviour of adults. Role models are known to strengthen what is learned vicariously as they serve as the norm. Vicarious learning, as opposed to direct experience, which is active learning,

involves passive learning. In this study, this is a case in which some female students may not directly use the internet, but observe their male counterparts or request them to obtain information from the internet. The implication of this finding is that significant progress still needs to be made in improving women's access to the Internet. In having a very hierarchical structure, the national education system provides a fertile ground for reinforcing and perpetuating gender imbalances. This in itself, is a contradiction of one of the noble goals of education, namely to promote equality by eliminating gender disparity in education.

5.6 Conclusion

In view of the findings it is concluded that attitude of students towards ways used in dissemination of knowledge such as the use of internet is an important determinant of accessibility to quality and relevant education. The need to enhance the attitude of students in institution of higher learning is exceedingly compelling. This is because most students had neutral attitude (67.2%), therefore undecided about the use of internet as a tool of knowledge acquisition and yet there was a significant positive relationship (r=1.688) between students' attitude and use of the internet as a knowledge acquisition tool.

5.7 Recommendations to Policy Makers.

From the research findings and the conclusions made, the following recommendations are made:

(i) The research findings have shown that more students (67.2%) have a neutral attitude towards utilization of internet for academic purpose.

The researcher recommends that training should be planned in such a way that the needs for information technology in training programmes are strengthened. This will help in producing graduates whose attitude is positive towards use of internet which will help in knowledge acquisition.

(ii) It is recommended that institutions of higher learning should encourage students in utilization of internet by integrating information technology units in all training programmes being offered. This will serve as a way of enhancing students' attitude towards the use of internet in academic programmes. Through direct experience and vicarious experience, the trainees will develop self-confidence and appreciate more the contribution of internet in research work.

(iii) The effect of gender on use of internet as a knowledge acquisition tool in this study should inspire institutions of higher learning and educational policy makers to enhance academic programmes in ways that will enable female students to utilize the learning resources.

(iv) Education planners should be held accountable for not ensuring that local universities invest in utilization/or integration of internet in academic research. The university administration should invest in terms of energy, time and finance by introduction of internet in education. This will help the development of self-confidence in university students, which will in turn change their attitude towards the use of internet as a knowledge acquisition tool. Also, this will assist in ensuring that universities produce graduates with IT knowledge.

5.8 Suggestion for Further Study

There are important issues that this study was unable to address due to its scope. From the research findings and conclusions drawn, there are certain aspects that the researcher feels need some further investigations. In view of this, the following are some of the areas that could be considered for further research.

i) There is need for similar designed studies in other faculties in public universities. This will make it possible to determine whether the findings documented in this study hold for all faculties in Kenyan public universities.

ii) There is a need for a comparison study between public universities and private universities in utilization of internet as a knowledge acquisition tool. This is because they offer different learning and training environment.

iii) Other factors such as personal factors and economic empowerment should be investigated as determinants of utilization of internet for academic research.

iv) There is need for a study on internet as a motivator towards knowledge acquisition.

REFERENCE

Abbey-Livingston, D. & Abbey, D.S. (1982), *Enjoying Research?: A 'How-To' manual on Needs Assessment*,_Pub. Queen's Printer for Ontario, Canada.

Abbot, S. & Rosenberg, D. (1996). *Performance indicators: a training aid for university librarians.* London: Routeledge

Africa Online. (1999, April 13)Identifying internet websites and user informati-on. *Daily Nation.* pp. 4.coln 5.

Arnfield, R. (1994). Electronic mail: a road to the information superhighway: *Library journal*, Vol. 119)13, 16-19

Aspinwall, K. (1992). *Managing Evaluation in Education, a development approach*, London: Routledge.

Astbrink, G. (1994). Will people with disabilities be riding the information superhighway or be left with on side street? *Link-up.?pp*. 7-10.

Badal, S. (1994). Frontiers of the Internet. *Computers in Africa*_Vol. 8(3), 17-18.

Baer, W.S. (1999), *"Emerging Internet: Will The Internet Transform Higher Education"*,_Pub. The Aspen Institute, Washington D.C., USA.

Bandura, A. (1986), *Social Foundations of thought and Action.* Euglewood. Cliffs, Nj: Prentice-Hall.

Blackmore, P. (1997). The development of Internet within a college of further and higher education: *Aslib proceedings* , 48(3),67-72.

Brainerd, P. (1993). *Using the Internet (and other CMCs) for practical business research and development.* : In the Proceedings of the 14th National On-line meeting 1993. Medford, New Jersey Learned Information. Pp 67-76.

Brown, G. (1998), "*Flashlight at Washington State University: Multimedia* Presentation, Distance Learning, and At-Risk Students at *Washington State University"*, in StephenC. Ehrmann and Robin Etter Zuniga, *The Flashlight Evaluation Handbook (1.0), Washington, DC:* The TLT Group.

Brown, J. S. & Duguid, P. (1996), Universities in the Digital Age. *Change*, July/August 1996, 11-19.

Burrows, T. (1993). Bibliographic integration and the Internet: *moving beyond cataloguing in academic and research libraries.* Paper presented at the 10th National cataloguing. Freemantle, Western Australia. Pp. 167-74

Busari, O.O. (2001), "*Writing an Educational Research Proposal and Presenting a Report"* Paper presented at the Formal Launching of the ERNWACA Small Grant Program, University of Lagos Conference Hall, Akoka, Lagos November 12, 2001.

Busha, C. H. and Harter S.P. (1980). *Research methods in librarianship: techniques and interpretation.* London: Academic Press.

Chen, C. (1994). Information superhighway and the digital global library: realities and challenges. *Journal of Information, Communication and Library Science.* Vol. 1 No.1, pp.5-16.

Cherhal, E. (1993). Internet or interconnected research: *Library and Information Science Abstracts,* 38(4), 8-12.

Chiang, D. (1991). *Interfaces for Information retrieval on-line systems: the stage of the art.* New York: Greenwood Press.

Childers, T. (1989). Evaluative research in the library and information field. *Journal of libraries Trends.* Vol.38 No. 2, pp. 25-26.

Collins, B.R. (1996). Web watch. *Library Journal*, 121(4),125

Cox , J. (1995). Rolling your own: publishing database on the Internet. *Managing Information,* 2(4), 30- 32.

Cunningham, L. L. (1986), "Computer and Educational Governance". *In J. A.* Culberston and L. L. Cunninghan (eds), *Micro Computers and education eighthy-fifth year book of the National Society for the study of Education.* Chicago "University on Chicago Press (pp. 193-28).

Dern, P.D. (1994). *The Internet guide for new users.* New York: McGraw-Hill.

Dickson, A. (1997). The year of the Internet. *Computer in Africa,* 14(2), 11-14.

Eharmann, S.C. (1995), "*Asking the Right Questions: What Does Research Tell us About Technlogy and Higher Learning?"* in Change. *The Magazines of Higher Learning,*XXVII:2 (March/April), pp. 20-27.

Eharmann, S.C. (1998), "*What Outcomes Assessment Misses"* In *Architectiure fo Change: Information as Foundation.* Washington, DC: American for Higher Education.

Falk, H. (1995). Internet Browsing tools. *Electronic library* ,13(3), 237-42.

Flannery, M.R. (1995). Cataloguing Internet Resources. *Bulletin of the medical Library Association.* ,83(2), 30-2.

Fullan, M. (1991), *The new meaning of Educational Change.* New York: Teachers College Pres.

Giuliano, V.E. (1994). *UA Newspapers: road-kill on the new information superhighway*? Proceedings of the 15th National On-line meeting on 10-12 May, 1994. New York: Learned Information, pp. 183-92.

Gordon, M.L. and McKenzie, D.J. (1994). From country roads to superhighway: keeping pace with the new business and legal turns on the information superhighway. *Illinois Libraries.* ,76(3), 124-148.

Hagloch, S.B. (1996). Information mediators still needed. *Library Journal* , 121 (4), 150.

Harvey, P. (1998), "*Technology integration in teaching and Learning Environment"*, Retrieved from :http"//www.internet.or.ke/career

Heydernrych, F. (1996), New Kid on the Intranet Block. Computers in Africa. 9(4), 100-110.

Jacobs, J. (1995). *Key Intranet concepts and terms.* New York: Microsoft Corporation.

Jensen, M. (1996). Intranet Service Providers collaborate. *Computer in Africa,* 10(8), 150-160.

Kelly, S. & Nicholas, D. (1996). Is the business Cybrarian a reality? Internet use in business libraries. *Aslib Proceedings* ,48(5), 136-144.

Kempf, A. (1994). Beyond E-mail: newsgroups, electronic archives and other network resources for information specialists. *Quarterly Bulletin of the International Association of Agricultural Information Specialists.* Vol. 39(1-2), 202-206

Kenya Government (1981). *Report on the first symposium on industrial research and development, 7-11 December 1981*. Nairobi: Government Printer.

Kerlinger, P. (1986), *Foundations of Behavioural Research, 3rd ed.Fortworth:* Harcourt Brace, Javanorich.

Kiplang'at, J. (1996). An evaluation of the effectiveness of teaching information skills public universities in Kenya. Unpublished M.Phil. Thesis, Moi University.

Lacroix. E. M. (1994), Service providers and Users discover the Internet. *Bulletin of the Medical Library Association.* 82(4), 412-418

Lancaster, F.W. (1972). *Evaluation and testing of information retrieval systems: Encyclopedia of Library and information services.*_New York: Marcel Dekker, Inc.

MacArthur, D. & Mathew L. (1996), *Untangling the Web: Applications of the internet and other Information Technologies To Higher Education*, Santa Monica, CA: RAND, DRU-1401-IET, June 1996.Manion, H. and Coheu, J. (1994), *Research Methods in Education, Landon: Rontledge.*

Massey, W.F. (1995), *"Life On The Wired Campus: How Many Technology Will Shape Institutional Futures"*, in The Learning Revolution, 195-210. See William F. Massy and Robert Zemsky, Using Information Technology to Enhance Academic Productivity (Washington, DC: EDUCOM, 1995).

Mastern, J. (1993), Education, Libraries and the national information infrastructure. *Library Hi Tech News.* No. 102. PP. 1-3.

Mathieu, R.J. & Woodard R.L. (1995). Data integrity and the internet: implications for management. *Information Management and Computer Security.* 3(2), 3-7

Mcquail, D and Windahl, S. (1993). *Communications model for the study of mass communication.(2nd ed).* London: Longman.

Mechin, T. (1996). Reality and the Internet. *Computers in Africa,* 4 (11), 5-?

Mercia, H. (1997).World Wide Web directory- framed edition. *Campus wide information system.* Vol.14 No. 2, pp. 54-56

Morgan, S. (1995). ALISS and the Internet. Vol. 12 No. 2, pp.4-6

Mugenda, O.M. & Mugenda, A. G. (1999), *Research Methods: Quantitative and Qualitative Approaches.* Nairobi: Acts Press

Nanstad, R. (1995). *Basic guide to the internet and on-line services.* New York: Microsoft Corporation.

Nicholas, D. (1997). The Internet: its early days, but there are some surprises. *Aslib Proceedings.* Vol.49 No. 8, pp.214-216

Nicholson, D. (1995). Cataloguing the Internet: CATRIONA feasibility study. *Library and information research Report.* Vol.105, pp.85.

Odini , C. (1993). An overview of information systems in Kenya: *Library Review.* 42(5),.44-49.

Onunga, J. (1998). *The Internet* Nairobi: Information systems Academy.

Osburn, C. (1998). Dealing with productivity losses caused by the Net. *Computers in Africa. 15*(6), 50-59.

Oso, W. Y. & Onen, D. (2005). *A General Guide to Writing Research Proposal and Report: A Handbook for Beginning Researchers.* Kisumu: Option Press.

Pelgrum and Plomp (eds), (1993), *The IEA Study of Computers in Education: Implementation of an innovation in 21 Education Systems.* London: Pengaman Press.

Philippa, D. (1990). *Evaluation of user education programmes: In Hugh Fleming (ed), User education in academic libraries.* London: Library Association.

Plantec, P. (1995). Hope on the internet, its time. *Campus-wide information systems.* 3(2), 10-12.

Polly, A. J. & Cisler, S. (1994). Connecting to the global internet. *Multimedia Today,* 119(1), 61-?

Selltiz, C., Wrightsman, L. S. & Cook, S. W. (1976). *Research Methods in Social Relations.* New York: Holt, Rinehart and Witson.

Smith, K. (1995). Internet and distance education: *COMLA Newsletter,* (86), 23-27.

Strauss, H. (1997), *"Perish-on the World Wide Web. Campus-Wide Information Systems.* Vol. 14 No. 1.

Tedd, L, A. (1995), An Introduction to Sharing Resources via the Internet. *Academic Libraries and Information centres in Europe*. 29 (1), 43-61.

Tenopir, C. (1996), On-line Databases. *Library Journal.* 121(4), 128.

Thing, L. (1997), *The Web:towards 2001. Trends Guide to the Internet.* New York: Elsevier Science. Pp. 10-11.

Thorin, S.E and Sorkin, V.D. (1997), *"The Library of The Future"*. In The Learning Revolutuion, ed. Diana G. Oblinger and Sean C. Rush. (1997). Bolton, Mass: Anker Publishing Co. PP. 164-79.

Webber . C. F. (2003), "New Technologies and Educative leadership". *Journal of Educational Administration.* 41 (2), 119-123.

Wenger, E. (1998), *"Communities of Practice: Learning, Meaning and Identity"* Cambridge, England: Cambridge University Press.

Wessel, C.J. (1968), Crireria for Evaluating the technical Library Effectiveness. In *Aslib Proceedings*. Vol. 20 N. 11, pp. 455-81.

What The top local ISPs offer Customers. *Daily Nation, Nov. 20 1997.* Pp. 30-31.

White, H. S. (1994), Librarians and information specialists on the information superhighway. *Journal of Information, Communication, and Library Science.* ,1(2), 2-10.

Wodehouse, L. (1997), The Intranet-the Quite ® evolution. *Aslib proceedings.* Vol. 49 No. 1, pp. 13-19.

Worthen, S. (1973), *Educational Evaluation: theory and practice*. Cambridge University Press: New York.

Yaggi, F., Kamin S. and Rosesenbaum V. (1985). *Structure adjustment lending: an evaluation of programme design.*_The World Bank: Washington D.C.

APPENDICES

APPENDIX 1: A LETTER TO THE SUPERVISOR

Moi University,

Educational Psychology Department,

P.O. Box 3900,

Eldoret.

Supervisor in charge,

Dear sir/madam

REF: Data Collection for Research

I request you to allow me time to collect data that may help in improving the preparation of the undergraduate students in Kenyan universities.

I hope this will be possible without inconveniencing you and disturbing your busy schedule.

Thank you in advance.

Yours faithfully,

Musamia .A. A. Obulinji.

APPENDIX 11: LETTER OF INTRODUCTION

QUESTIONNAIRE ON THE ATTITUDE OF EDUCATION STUDENTS TOWARDS INTERNET AS A KNOWLEDGE ACQUISITION TOOL IN MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY

Dear Respondent,

Attached is a questionnaire designed to gather information on the attitude of students towards internet as a knowledge acquisition tool in higher learning institutions in Kenya. Your university has been selected to help supply information useful for this study.

Your responses will be treated in strict confidence and will only be used for research purposes. Be free and respond honestly to items in the questionnaire. Your co-operation will be highly appreciated.

Yours faithfully,

Musamia A.A. Obulinji.

APPENDIX 111: QUESTIONNAIRE FOR THE STUDENT TEACHERS.

INSTRUCTIONS:

You are requested to fill in this questionnaire meant to collect information for academic purposes only. Your responses will be treated CONFIDENTIALLY.DO NOT, indicate your name or number anywhere. Kindly respond to all items.

Please tick (✓) within spaces provided to indicate your choice. Where rectangles are not provided use the blank spaces provided. There is no correct or wrong answer.

SECTION A

PERSONAL INFORMATION

1. Module of study: Module I, Regular ☐

Module II, Parallel/ self sponsored ☐

2. Kindly indicate your teaching subjects…….

……...

3. Indicate your age: 16-20 ☐ 21-25 ☐ 26-30 ☐ above 30 ☐

4. Indicate your sex:

a) Male ☐

b) Female ☐

5. Do you have an Email Address?

a) Yes ☐

b) No ☐

6. Which of these is the source of finance for your studies?

a) Parents saving ☐

b) Own saving ☐

c) Bank Loans ☐

d) Insurance ☐

e) Others please specify ……

SECTION B: ACADEMIC MATTERS

The following statements are about the Internet as a tool of knowledge acquisition. You are required to indicate whether you strongly agree [SA], Agree [A], Not Sure [NS], Disagree [D], or strongly disagree [SD] with the statement. Put a tick [√] in the box that corresponds to your feelings.

1. I openly make use of the Internet in my studies.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

2. I tend to use the Internet in my research.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

3. I have been using the Internet since I joined campus.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

4. My lecturers advise me to refer to the Internet for my research.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

5. I believe that the Internet is a knowledge acquisition tool.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
		☐

Disagree D D

Strongly Disagree ☐

6. I believe that the Internet can improve the quality of education.

Strongly Agree SA ☐

Agree A ☐

Not sure NS ☐

Disagree D ☐

Strongly Disagree SD ☐

7. My course does not require use of the Internet.

Strongly Agree SA ☐

Agree A ☐

Not sure NS

Disagree D ☐

Strongly Disagree SD ☐

8. I make use of the Internet to obtain information.

Strongly Agree SA ☐

Agree A ☐

Not sure NS ☐

Disagree D ☐

Strongly Disagree SD ☐

9. I make use of the Internet to communicate by e-mail.

Strongly Agree	SA	SA
Agree	A	
Not sure	NS	
Disagree	D	
Strongly Disagree	SD	

10. Internet browsing is very expensive.

Strongly Agree	SA	
Agree	A	
Not sure	NS	
Disagree	D	
Strongly Disagree	SD	

11. I can browse at any time of the day.

Strongly Agree	SA	
Agree	A	
Not sure	NS	
Disagree	D	
Strongly Disagree	SD	

12. I browse the Internet for knowledge relevant to my course once per week.

Strongly Agree	SA	
Agree	A	
Not sure	NS	
Disagree	D	

Strongly Disagree SD

13. I use the Internet to research on college work.

Strongly Agree SA ☐
Agree A ☐
Not sure NS ☐
Disagree D ☐
Strongly Disagree SD ☐

14. I am able to consult the Internet for information any time I want.

Strongly Agree SA ☐
Agree A ☐
Not sure NS ☐
Disagree D ☐
Strongly Disagree SD ☐

15. Many users at computer centers affect my accessibility to the Internet.

Strongly Agree SA ☐
Agree A ☐
Not sure NS ☐
Disagree D ☐
Strongly Disagree SD ☐

16. Lack of enough computers limits my accessibility to the Internet.

Strongly Agree SA ☐
Agree A ☐
Not sure NS ☐
☐

Disagree	D	D
Strongly Disagree	SD	

17. My friends help me to browse on the Internet.

Strongly Agree	SA	
Agree	A	
Not sure	NS	
Disagree	D	
Strongly Disagree	SD	

18. I subscribe to academic websites to download materials that assist m e in my course.

Strongly Agree	SA	
Agree	A	
Not sure	NS	
Disagree	D	
Strongly Disagree	SD	

19. Electric power shortages affect my accessibility to various websites.

Strongly Agree	SA	
Agree	A	
Not sure	NS	
Disagree	D	
Strongly Disagree	SD	

20. I get information relevant to my course in the shortest time while browsing the Internet

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

SECTION: C

ATTITUDE TOWARDS INTERNET

Listed below are a series of statements that represent possible feelings that students might have about the internet as a tool of knowledge acquisition. With respect to your own feelings, please indicate the degree of your agreement or disagreement with each statement by ticking (√) in the box which corresponds to your feelings.

1. Browsing on the Internet is enjoyable.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

2. I feel a sense of pride in accessing Internet services.

Strongly Agree	SA	☐
Agree	A	☐
		☐

Not sure	NS	
Disagree	D	☐
Strongly Disagree	SD	☐

3. I spend too much to browse.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

4. I feel satisfied with the use of the internet as a tool of knowledge acquisition.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

5. I feel I am quite competent in browsing.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

6. There is really too little chance for getting relevant information on the Internet.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

7. Internet services within the campus are reliable.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

8. I do not feel that the downloads I get from the Internet for my research projects are appreciated.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

9. My efforts to browse are seldom blocked by lack of enough computers.

Strongly Agree	SA	☐
Agree	A	☐
		☐

Not sure	NS	
Disagree	D	☐
Strongly Disagree	SD	☐

10. Those who utilize Internet for academic work stand a fair chance for performing academically well.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

11. The main function of internet is communication by emails.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

12. I sometimes feel that the Internet is a source of evil in the society.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

13. My course work assignments are done with little difficulty with availability of Internet services.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

14. There are no chances to gain new skills and knowledge on the Internet.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

15. I have mastered the skills necessary for browsing.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

16. My lecturers encourage students to browse the Internet for acquisition of knowledge

Strongly Agree	SA	☐
Agree	A	☐
		☐

Not sure NS

Disagree D ☐

Strongly Disagree SD ☐

17. My colleagues recognize my ability to download academic materials for our course.

Strongly Agree SA ☐

Agree A ☐

Not sure NS ☐

Disagree D ☐

Strongly Disagree SD ☐

18. I find my academic needs met due to availability of Internet services.

Strongly Agree SA ☐

Agree A ☐

Not sure NS ☐

Disagree D ☐

Strongly Disagree SD ☐

19. I often share new ideas I get from internet with my colleagues through email.

Strongly Agree SA ☐

Agree A ☐

Not sure NS ☐

Disagree D ☐

Strongly Disagree SD ☐

20. Browsing is a definite mistake on my part.

Strongly Agree	SA	☐
Agree	A	☐
Not sure	NS	☐
Disagree	D	☐
Strongly Disagree	SD	☐

APPENDIX4: RESEARCH PERMIT

APPENDIX 5: RESEARCH AUTHORIZATION LETTER FROM NATIONAL COUNCIL OF SCIENCE AND TECHNOLOGY

APPENDIX 6: DISTRICT COMMISSIONERS RESEARCH AUTHORIZATION