FACTORS INFLUENCING UNIVERSITY OF NAIROBI MASTER OF EDUCATION DEGREE STUDENTS' ACCESS AND UTILIZATION OF INFORMATION COMMUNICATION AND TECHNOLOGY FACILITIES

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DECLARATION

This research project is my original work and has not been submitted for a degree in any other university.

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DEDICATION

This research work is dedicated with a lot of love, respect and appreciation to my husband John N. Kiriu, our beloved sons Benon Kiriu and Byron Mati for their desire, prayers and encouragement to see me complete the study.

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LIST OF ABBREVIATIONS AND ACRONYMS

CCK	Communication Commission of Kenya
ICT	Information Communication and Technology
IFMIS	Integrated Financial Management Information System
KESSP	Kenya Education Sector Support Program
M.Ed	Master of Education
MDGs	Millennium Development Goals
NACOSTI	National Commission for Science, Technology and Innovation
SMIS	Students Management Information System
SPSS	Statistical Package for Social Sciences
UNES	University of Nairobi Enterprises and Services
UoN	University of Nairobi

Abstract

The purpose of this study was to establish factors influencing University of Nairobi Master of Education degree students' access and utilization of Information Communication and Technology facilities. The study was guided by four research objectives were formulated to guide the stud ICT is often perceived as a catalyst for change, change in teaching styles, and change in learning approaches and in access to information. The objectives were to investigate the influence of age of M.Ed students on the use of electronic resources in accessing information; to establish how attitude of Med students influence the use of e-resources in accessing information; to find out the influence of university lecturers on use of e-resources and to establish the effects of availability of internet enabled computers on use of e-resources by M.Ed students. The study was based on the innovation diffusion theory which attempt to explain the variables that influence how and why users adopt a new information medium, such internet. The researcher applied descriptive survey research design. This is because the design is useful since it would collect data from members of the population in order to determine the current status without manipulating the variables. A total number of 635 M.Ed students were targeted for the study and a sample of 64 respondents was used. Data collection was done using questionnaires and analysed using the quantitative method in frequency distribution tables, percentages and bar graphs. The study findings established that the age of the M.Ed students affected the use of available e-resources; the younger ages were more users of the internet in accessing information compared with their old counterparts. The attitude of the M.Ed students was a factor that affected the use of e-resources in accessing information. The study established that having internet enabled computers contributed to speedily information access as opposed to just having computers without the ability to be used for information search and retrieval. Based on the findings the study recommended that schools and colleges should provide enough internet enabled computers to their students with enough wireless hot point, that there be provision of computer training to equip the students with hands on skills on using the internet to search for information; and that government provides funds to enable as many students as possible to acquire their own computers. Based on suggestions for further research the study recommended that a similar study should be conducted to determine the contribution of ICT as an information source to the student performance in order to find out whether students who own computers /laptops perform better than the students who do not own computers/laptops. There should be a study to determine whether students who own computers/laptops perform better than the ones who do not have and depends on the shared computer laboratory. A study should be done to assess the value of Information Communication and Technology in education.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Education is a prerequisite for achieving developmental goals globally. This is supported by evidence from developmental research, which has shown that education is positively associated with human welfare issues. One such study was by Lockhead et al. (1980) which found that in a modernizing environment, four years of education improved agricultural productivity by 10%. A World Bank report World Bank, (1995) indicates that education is fundamental to effective poverty reduction strategies. (Tilack, 2002) concluded that there is sufficient research to support the hypothesis that education and poverty are inversely related. It is, therefore, generally established that access to knowledge provides individuals with a competitive advantage in whichever environmental situation they may find themselves. Information Communication and Technology (ICT) promises to be one way of accessing information and hence empowering people to contend successfully in society.

ICT is often perceived as a catalyst for change, change in teaching styles, and change in learning approaches and in access to information (Watson, 2005). It refers to technologies that provide access to information through telecommunications. Use of ICT has changed conventional ways of learning and proposes the need to rethink education in terms of a more current context (White,

2010). ICT capability is fundamental to participation and engagement in modern information society. ICT can be used to find, develop, analyse and present information, as well as to model situations and solve problems. ICT enables rapid access to ideas and experiences from a wide range of people, communities and cultures, and allows students to collaborate and exchange information on a wide scale (Crown, 2010). Education is the first and best key area for ICT applications. ICTs can help by providing alternative possibilities for education (Casal, 2007). The purpose of ICT in education is generally to familiarize students with the use and workings of computers, and related social and ethical issues. ICT also enables learning through multiple intelligence as it has introduced learning through simulation games; this enables active learning through all the senses (Gateway, 2010).

Globally, people are increasingly facing higher competition than ever before. Different from any other times in human history, this global competition is intensively knowledge based. Duderstadt (1997) notes that people must acquire new knowledge, learn new technologies, and develop new skills to realize the quality of life.

Information Communication Technology in education has made significant progress in China for the last two decades in higher education process (Finger, et al 2007). It is highly applied for distance education based on executing agencies, target students and goals to be achieved. The use of ICT in general has become

more common during the last two decades with the existence of internet and world web, the internet becoming the largest collection of information in the world (Parchler, 1999). Information Communication Technology has also changed quality of education in the world and it is clear that students are changing by using ICT tools (Finger, *et al* 2007).

The potential of computer technologies to revolutionize university teaching and learning is becoming an acceptable norm by education technologists. Academic journals in the field of educational technology such as the Journal of Computer Assisted Learning (JCAL) regularly feature research focusing on the ability of technologies like the computer and the Internet to accelerate university students' learning, enhance and democratize access to educational opportunities, and to support interactivity, interaction, and collaboration (Draper & Brown, 2004; Corlett *et al*, 2005; Oliver, 2006). Education technologists insist that universities must either transform or `die' in the face of technological progress (Bates, 2004).

Use of different information communication technologies has become inevitable for students in learning. By using modern information communication technologies, students can retrieve their required information within a short time. They can access and disseminate electronic information like e-books, e-journals and can improve their learning by using different modern ICTs in form of wireless networks, internet, search engines, databases, websites and web technologies.

Unfortunately, most developing countries like Somalia, Mozambique, Chad, Democratic Republic of Congo, and Southern Sudan find themselves in a situation of ICT dispossession because of war and insecurity. This leads to low access to information and invariably low competitiveness. Prahalad and Hart (2002) regard information poverty as probably the single biggest roadblock to sustainable development.

The use of information and communication technologies (ICT) in education is becoming a major contemplation as developing countries focus on improving the quality of education. Investment in ICT use in education has grown steadily over the past decade in developing countries, even in some of the most demanding environments in some of the least-developed countries. Several countries are unwaveringly expanding the supply of computers in their schools in the belief that schools will benefit from the use of the new technologies and that students need to. Due to mounting adoption of and demand for ICTs in education, there is very little systematic research and hard data about how ICT is actually used in the classroom and even less about its impact on educational outcomes, social behaviour, or employment and worker productivity (InfoDev, 2005).

Due to the large efforts to position information communication and technology (ICT) as a central tenet of university teaching and learning, the fact remains that many university students and faculty make only limited formal academic use of computer technology (Selwyn, 2007) Whilst this is usually attributed to a

diversity of operational deficits on the part of students, faculty, and universities, much can be done to advance the current situation.

From various studies done on use of ICTs in education, a consistent theme emerges where computer technology use is developed in constrained, linear, and rigid terms far removed from the creative, productive, and empowering uses which are often celebrated by educational technologists. In the light of such constraints, it is imperative to consider how these dominant constructions of a peripheral and limited use of ICT may be challenged by the higher education community, and by reflecting on current critical thinking about how educational technologists can foster a more expansive and empowered use of computer technology within university settings.

1.2 Statement of the problem

Postgraduate students just like the undergraduate students need to get information in all formats other than paper or print. According to Nyamboga, Ong'ondo and Ongus (2004) some students who have had no exposure to computers and its peripherals do not feel free to use the same. Most of the older postgraduate students have a poor attitude towards Information Communication Technology, (Nyamboga, Ong'ondo and Ongus, 2004).

This could probably explain the complaints by faculty members that the list of references of course work and assignments submitted by most postgraduate

students do not include e-resources despite the fact that the University of Nairobi library subscribes to a number of them. Statistics at the reference and resource centres also show that fewer postgraduate students visit these areas for information. A large number of them have been observed to use print-based material in the other library section (Oliver, 2002).

The University of Nairobi established an ICT centre in March 2002 with the sole purpose of providing high quality and cost effective Information Communication Technology that meet the changing learning, teaching, research and management needs of the university. Currently the university registration of courses and selection of degrees is Online, books and journals and abstracts from the university system are online, the university human resource data bank is automated, fee payment, managed by subsidiary body known as University of Nairobi Enterprises and Services (UNES) is online and with the creation of the students management information system (SMIS), the role of ICT in education is likely to be realized. Despite this move by the university, most postgraduate students find it difficult in adopting and using ICT (Lumbano, 2004).

Despite the fact that the process of ICT access and integration is a combination and coordination of separate and diverse elements to a more complete or harmonious whole, UoN's ICT access and integration process is still far from complete (Nyamboga, Ong'ondo and Ongus, 2004). However it has been suggested that this situation exists due to the fact that: online courses are still not

available; the Extra Mural centres which serve the distance education students are lacking some of the basic facilities; and some of the staff and the students who are supposed to use the ICT services have limited technological knowledge. However no empirical research exists to support this claim (Selwyn, 2007).

It is in this context that this study set out to investigate the factors affecting utilization of ICT in accessing information by master of education students at the University of Nairobi.

1.3 Purpose of the study

The purpose of this study was to investigate factors influencing utilization of ICT to access information by Master of Education students at the University of Nairobi.

1.4 Objectives of the study

This study was guided by the following research objectives:

i. To investigate the influence of age of M.Ed students on the use of electronic resources in accessing information in UoN
ii. To establish how attitude of M.Ed students influence the use of e-resources in accessing information in UoN.
iii. To find out the influence of university lecturers on use of e-resources by M.Ed students to access information.

iv. To establish the effects of availability of internet-enabled computers on use of e-resources by M.Ed students.

1.5 Research questions

i. How does the age of M.Ed students of UoN affect their use of electronic information resource?
ii. To what extent does the attitude of M.Ed students influence the use of e-resources in accessing information in UoN?
iii. To what extent do the university lecturers influence the use of e-resources by M.Ed students to access information?
iv. How does the availability of internet-enabled computers affect the M.Ed students to access information?

1.6 Significance of the study

It is expected that the study would benefit researchers and the scholars within the University as its main role is to support university programs and research for national development. The main objective of the adoption of e-resources to facilitate access to international information via the internet and other electronic means should in turn facilitate the timely dissemination of both local and international research output (Okello-Obura and Magara, 2008). It was also expected that the students might benefit from the increased enlightenment on the advantages of using electronic resources in accessing information due to their

faster retrieval and up to date data. The findings of this study may benefit the ICT department in the library of University of Nairobi to understand the factors influencing utilization of Information Communication and technology to access information by the masters' students.

1.7 Limitations of the study

According to Best and Kahn (1989) limitations are conditions beyond the jurisdiction of the researcher that may place boundaries on the conclusions of the study and their application to other situations. This study was confined by the attitudes of respondents which may influence the legitimacy of their responses. This was because the respondents were tempted to give socially conventional answers to please the researcher. To counteract this limitation, the researcher ensured that the appropriate explanation was given to the respondents so that the limitation of attitudes towards responding to questionnaires was reduced. Confidentiality was guaranteed to the respondents. This was expected to improve respondents' cooperation and responses rates.

1.8 Delimitations of the study

According to Mugenda and Mugenda (2003) delimitations are boundaries of the study. The study focused on the University of Nairobi, School of Education, and Kikuyu Campus. The respondents included the Masters of Education students. It focused on use of ICT to access information for academic purposes.

1.9 Assumption of the study

Assumptions are facts presumed to be true but have not been verified (Orodho, 2003). The following were the assumptions of the study:

i. University of Nairobi offers electronic information services in the libraries.
ii. University M.Ed students seek information from all formats of materials for their academic research.

1.10 Definition of Significant Terms

Access to information refers to the aspect of obtaining facts using computers.

Attitude refers to manners of feeling or behaving, judgement and opinion that guide use of computer application skills.

Computer Application Skills refers to a practical knowledge, power and ability of using computers to get information.

E-journal refers to scholarly journals or intellectual magazines that can be accessed via electronic transmission. They provide material for academic research and study.

E-learning refers to electronic learning is the use of internet access services where students' exchange information worldwide in a computer- aided student – centred free learning process, which enhances creativity and allows students to develop innate critical thinking.

Information refers to something that gives knowledge in the form of facts, facts accessed to through computer application skills.

Information Communication Technology refers to an umbrella term that includes any communication device or application, encompassing radio, television, cellular phones computer and network hardware and, software satellite systems and so on as well as the various services and applications associated with them such as video conferencing and distance learning.

Public Universities refers to universities that are predominantly funded by public means through a national or sub national government.

Utilization refers to the act of M.Ed students use of e-resources in doing their learning at the university.

1.11 Organization of the study

This research study has five chapters. Chapter one focused on introduction of the whole study giving background to the study, statement of the problem, study objectives, research questions, significance of the study, limitations and delimitations, assumptions of the study and definition of significant terms.

Chapter two focused on literature review under which the following subheadings explored in the light of the study objectives. Introduction, influence of age of Med students on the use of electronic resources in accessing information, attitude of

MEd students influence the use of e-resources in accessibility of information, influence of university lecturers on use of e-resources by Med students and effects of availability of internet-enabled computers on use of e-resources, summary of literature review, theoretical framework and conceptual framework.

Chapter three covered research methodology, research design, location of the study, target population, sampling techniques and sample size, research instruments, instrument validity, instrument reliability, data collection procedures and data analysis techniques.

Chapter four presents data analysis as well as data presentation in line with the four research questions while Chapter five presents the summary, conclusions and recommendation of the study. This section gives some suggestions for further studies that could be carried out in future.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter defines computer and computer application skills. It then explores the use of computers and access to information. Level of knowledge in computer application skills and accessibility of information is examined. Explored also is experience in computer application skills and accessibility of information. Attitude towards computer use and accessibility of information is looked into. Finally there was the conceptual framework and summary.

2.2 Relevance of age on the use of electronic resources

Technology is embedded seamlessly into the personal and social lives of today's students, yet reports have questioned the widespread assumption that young adults have the sophisticated information skills and digital literacy needed to become autonomous learners (Edniburg, 2009). Information search and management has been identified as a key requirement of postgraduate skills training. Online tools for information search and management are increasingly designed to involve a social element, allowing communities of researchers to share content and citations online. The ICT landscape for postgraduate students should be viewed as one in which each student chooses a set of technologies provided by a range of organizations to undertake the many tasks that s/he undertakes as part of the study. With each new technology, s/he will weigh the benefits of adopting that

technology against the cost of doing so. Variations across subject disciplines have a strong influence on which tools are adopted by the individual postgraduates.

According to a study by Esther Dingley (2010) on Postgraduate information needs and tools, departments and libraries need to ensure that existing support resources, such as training course materials and induction guides contain information that post graduate students consider relevant to meeting their specific needs; careful attention should be paid to the branding of these existing support materials to ensure that the benefits to the postgraduate demographics is evident; and that there is scope to improve advertising and promotion of existing support resources.

In order to utilize the growing range of electronic resources, students must acquire and practice the skills necessary to exploit them. These include knowledge of the structure of the databases and the instructions which must be input into the computer by the researcher, as well as an understanding of the ways in which the instructions are linked with one another (Ozoemelem, 2009). Students need to have the following attributes to be able to use ICT and e-resources effectively: they must act independently to acquire and manage a much greater volume of information than undergraduates; they must be aware of the importance of managing information in preparation for write-up; they must be aware that postgraduates predominantly access information digitally, with Google being a common starting point for information gathering; they must know not only how

to search for information, but also how to manage the information sources that they are finding (Dingley, 2010).

Libraries provide access to scholarly literature that, as a rule, is not freely available on the web. Often, it is in colleges that users become aware of libraries' resources, usually while having to write research papers (Ozoemelem, 2009). A study of undergraduates showed that they looked for the fastest way that would lead to satisfactory results when doing research, going for electronic information sources first (Valentine, 1993). These students felt uncomfortable however, asking for help in using the library and spent frustrating hours trying to find information. However, in the recent past, libraries face challenges such as diminished budgets, increased patron demands, and rising costs for book purchases and periodical subscriptions (Ke & Chang, 1999).

Bakkabulindi (n.d) looks at six individual characteristics that affect ICT use which are interaction with ICT change agents; ICT training; cosmopolitanism; age; gender; and income level. On change, the author quotes Kibera (1997) who says that a potential adopter who has more contacts with a change agent is more likely to benefit from the technological or technical knowledge of the agent and therefore to be more ready to use innovations than those with fewer contacts. On training and use of innovations, the author asserts that this enables employees to be more adaptable and able to cope with changes. He defines ICT literacy as the degree to which an individual possesses masterly over ICT symbols in written

form and contributes to the process of adopting new technology by providing the means for ICT print media exposure and facilitating the retrieval of ICT print messages for later use.

Cosmopolitanism is defined as the degree to which an individual is oriented outside the immediate social system or has urban influence is positively related to innovativeness because they have better accessibility to the services and have better access to media like television and internet. On age and innovation, it was found that younger people were more ready to adopt technology than older members of society. On gender and innovations, it was found that males have better access to ICT technology than women. On income levels, it was found that those with higher personal or family income or higher occupational status had better access to ICT skills and computers

2.3 Attitudes towards use of ICT

A study done at Turku University in Finland on 'The effect of ICT on School' (Ilomaki, 2008) found that students are capable and motivated users of new technology. A study was conducted by Okwilagwe and Okbomo (2004) titled 'Computer Skills as Predictors of Lecturers' Use of Scholarly Electronic Publications for Research in Federal University Libraries in Nigeria'. The result of the analysis on utilization of scholarly electronic publications showed that there was a low level of utilization of scholarly electronic publications in federal university libraries among majority of lecturers. This means that most lecturers

did not visit the libraries to utilize the available e-journals. In other words very few lecturers visit the library to utilize the electronic databases such as JSTOR, AGORA, HINARI, EBSCOHOST and DOAJ. This agrees with Olalude (2007) who found that access to and use of electronic resources is low in academic libraries.

One of the explanations responsible for the situation could be according to the Congress of the United States' Office of Technology Assessment, (1997) and the general acceptance and use of a new technology usually lags considerably behind its availability. Estimates for the average time lags are from 10-15 years but wide variation occurs. The traditional practice of using print journals may still be with the lecturers hence, low utilization of scholarly electronic publications. Electronic learning developments are usually guided at the top level by a university plan below which is an e-learning strategy, and the implementation of the later is overseen by an e-learning committee with wide representation, including the student association.

2.4 Lecturer's skills and readiness to embrace use of ICT in their job

The concept computer skill is synonymous with digital literacy, ICT fluency, ICT literacy, technological and e-literacy and 21st century skills (Markauskaite, 2006). In this study the above terms are used interchangeably because the terms involve the application of modern computer in lecturers' daily lives. Gilter (1997) defined digital literacy as "… the ability to understand and use information in multiple

format from a wide range of source when it is presented via computer". In complementation of the above definition Utsi and Lowyck (2005) said digital literacy is a baseline set of skills for successfully coping with a complex, often technological world, holding multiple media messages". Computer literacy skills according to McCartan (1997) are "the ability to use the computer as a multipurpose tool appropriately". Malpiedi (1989) proposed that computer literacy could be considered to mean possessing the understanding and skills necessary to live in a society that depends upon computer technology and skills necessary to live in a society that depends upon computer technology. With the increase in access to the Internet, definitions of computer literacy skills have expanded to include the ability to use e-mail, graphical interfaces such as Netscape, online publishing and the ability to evaluate the content of online materials (Corl, 1996).

The development in information and communication technologies (ICTs) such as computers, Internet and scholarly electronic publications (e-journals) have made it almost unnecessary for lecturers to use card catalogues, printed abstracts and indexes, bibliographies, textbooks, printed journals and so on. Today, university lecturers all over the world can conduct research, teach and accomplish other academic tasks by using computers connected to the Internet to search and retrieve needed information from electronic catalogues, e-journals and large databases of digitized scholarly information (Marcum & George, 2003). Consistent with the change from paper to electronic format, lecturers are expected

to develop computer skills required to exploit information in scholarly electronic publications.

Scholarly publications are the primary means by which the outcome of academic work is shared. Journal articles, books, conference proceedings, and the likes have been the primary delivery vehicles for scholarly work. Electronic forms of scholarly publications abound and are on the increase. Tenopir and King (2001) noted that "nearly two-thirds of all scientific journals are available both electronically and in print and there are more than 1, 000 electronic-only peer-reviewed journals". Lecturers' use varied forms of scholarly electronic publications in formal and informal settings to communicate with one another in the same discipline as well as with others beyond their disciplines and institution (Teferra, 2003).

Research indicates that there are cognitive and technical factors that do affect ICT use by scholars. The possession and use of technical skills such as computer skills is a focus of this study. Computer skill may be a factor that influences lecturers' utilization of scholarly electronic publications for research purpose. Information and communication technologies have resulted in a need for the learning of new skills, abilities, and capabilities or competences to effectively and efficiently handle job related tasks in electronic environment. Knowledge, skill and competence with computer technology are now vital assets for all employees in institutions and organizations (Zin, Zaman, Judi, *et al*, 2000). For instance a study

of faculty's use of electronic resources found that use was influenced by such factors as computing skills of academic work (Waldman, 2003).

2.5 Effects of availability of internet enabled computers

A computer is an electronic device that can store, organize and find information, do calculations and control other machines (Merriam-Webster Collegiate Dictionary, 2003). To use a computer people should be computer literate, so they should possess computer skills. Computer- based global information system is composed of many interconnected networks. Each network may link tens, hundreds, or even thousands of computers, enabling them to share information with one another and computer resources such as powerful supercomputers and databases information. To be able to access information using the computer learners should possess computer skills and knowledge (Ackermann, 1996).

The information communication technology is used as an extended synonym for information technology (IT), but is a more specific term that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information.

In Kenya there are a few Internet provides that provide Internet gateway services to Kenyans. Such Internet providers are made up of Kenyans who are in

partnership with foreign information and communication companies. Many of these companies provide poor services to customers who are often exploited and defrauded. The few reputable companies, which render reliable services, charged high fees thus limiting access to the use of Internet (GOK, 2012).

The greatest technological challenge in Kenya is how to establish reliable cost effective connectivity. In a country where only about 0.6% of the populace has home personal computers, the few reliable Internet providers who have invested huge sum of money in the business have a small clientele. They have to charge high fees in order to recoup their investment in reasonable time. Kenya has about 500,000 Internet subscribers (GOK, 2012).

The achievement of an information society and a knowledge economy is one of the main priorities of the Government towards the attainment of the development goals and objectives for wealth and employment creation as espoused in the Government blue print (Republic of Kenya, 2013). Information and communication technology is one of the fastest growing sectors in the country. For instance, statistics for April 2013 was as follows:

Table 2.1: Information and communication status in Kenya 2013

S. No	Services	Numbers
1	Mobile subscriptions	30.7 million
2	Fixed Network Subscriptions	251,576 Lines
3	Internet Subscriptions and Internet	9.4 million/16.2 million
4	Broadband subscriptions (Speeds greater than or equal to 256kbps in or out	1,002,701 million
5	Internet penetration	41.1 per cent
6	International Internet used band width	328,641 mbps
7	International Internet Available Bandwidth	906,186 Mbps
8	▪ Broadcasting Radio	99
	▪ Broadcasting television	16
	▪ Number of postal outlets	634

Source: Republic of Kenya 2013

According to Table 2.1 above, it is evident that there still exists a big percentage of Kenyans who had not yet embraced information, communication and technology either due to poverty or ignorance. This on the other hand implies that

the level of ICT utilization in the country is wanting, and hence the study to investigate factors influencing utilization of ICT to access information by Master of Education students in the University of Nairobi.

Some of the key challenges facing the ICT sector in Kenya include inadequate implementation of policy and regulatory intentions to support rapid development and deployment of ICT infrastructure and services, limited support for research and development, and inadequate access to ICT services (Government of Kenya, 2013).

2.6 Government policy on ICT

A national ICT policy sets out a nation's aims, principles and strategies for delivery of information and communication technology. In Malaysia, the government has come up with three policies on ICT and education. The first is that of ICT for all students meaning that ICT is used as an enabler to reduce the digital gap between the schools. The second policy confirms the role and function of ICT in education as a teaching and learning tool, as part of a subject and as a subject by itself. The third policy emphasizes using ICT to increase productivity, efficiency and effectiveness of the management system.

The Ministry of Education is committed to utilizing the following multi-prong strategies to ensure that the objectives of ICT in education are achieved: preparation of sufficient and up-to-date tested ICT infrastructure and equipment to

all educational institutions, roll-out of ICT curriculum and assessment and emphasis the integration of ICT in teaching and learning, upgrading of ICT knowledge and skills in students and teachers, increased use of ICT in educational management, and upgrading of the maintenance and management of ICT equipment in all educational institutions (Ministry of Education, Malaysia, 1999; Foong-Mae, 2002). In the near future, every student will have access to a 4G network in school through 1BestariNet which serve as virtual learning platform that can be used by teachers, students and parents to share learning resources, run interactive lessons and communicate virtually (Preliminary Report Malaysian Education Blue Print, 2012).

The principle objective of the ICT policy in Kenya is to facilitate sustainable economic growth and development, and poverty eradication through productive and effective technologies (RoK, 2006). The policy also aims at pursuing progress towards full socio-economic inclusion of citizens through universal access. Further, the policy looks to stimulate investment in the ICT sector while at the same time encouraging the spirit of innovation through research and development. The government must be one of the most important ICT promoters and consumers through e-government, education, science and technology systems, public health, social plans and economic plans (Kandiri, 2010). Different stakeholders and in particular the private sector then make inputs into the policy process and affect its outcomes. These include regulatory authorities, broadcasters, telecom operators,

private network operators, service providers, content providers, software developers, vendors, education providers and end users.

Parliament was required to enact legislation that provides for the establishment of a body, which shall be independent of control by government, political or commercial interests reflect the interests of all sections of society, set media standards and regulate and monitor compliance with those standards (RoK, 2003). This body is the Communications Commission of Kenya (CCK).

The National ICT Strategy for education identifies the following strategic pillars for ICT implementation: establishment of an ICT framework; digital equipment; connectivity and network infrastructure; technical support; Harnessing emerging technologies; digital content development; integration of ICT in education; training (capacity development, including professional development); research and development; partnership and resource mobilization; legal and regulatory framework; and monitoring and evaluation (MoE, 2006). The strategy is based on the vision that 'ICT is a universal tool in Education and Training'. The overall objective of the plan is to ensure that systematic efforts are made towards strengthening adoption and use of ICT in the education sector with appropriate attention given to education development priorities as outlined in the Economic Recovery Strategy for Wealth and Employment Creation 2003-2007, Sessional Paper No 1 of 2005 entitled 'A Policy Framework for Education, Training and Research' and the United nations Millennium Development Goals (MDGs). The

Ministry of Education developed a Kenya Education Sector Support Programme (KESSP) in 2005 that featured ICT as one of the priority areas with the aim of mainstreaming ICTs into the teaching and learning process.

2.7 Summary of literature review

Students thread technology through both their social and academic lives, learning new skills from the specific application of ICT and learning technologies and bringing their own use of technology to bear on their studies in ways that suit their own preferences. They do not generally have high expectations from universities in terms of novel or innovative uses of technology, but do expect reliability, predictability and high quality use across their courses. Ozoemelem, (2009) study indicated that in order to utilize the growing range of electronic resources, students must acquire and practice the skills necessary to exploit them. These include knowledge of the structure of the databases and the instructions which must be input into the computer by the researcher, as well as an understanding of the ways in which the instructions are linked with one another. This study did not investigate the influence of students' attitude and the lecturers' role. This study filled this gap by covering the left area of investigating the factors influencing University of Nairobi Master of Education degree students' access and utilization of Information Communication and Technology facilities.

2.8 Theoretical framework of the study

A theory is a set of interrelated construct (concepts), definitions and propositions that presents a systematic view of phenomenon by specifying relations among variables with the purpose of explaining, predicting and controlling the phenomena. A variable is something that can be changed, such as a characteristic or value. Variables are generally used in psychology experiments to determine if changes to one thing result to changes in another (Kothari, 2002).

Information and Communication Technology research has also yielded many theories and models with different sets of acceptance determinants. This study will focus on one of such models. The model reviewed is the Innovation Diffusion Theory by Rogers (2003).

2.8.1 The Innovation Diffusion Theory

Rogers studied the process that communities use in incorporating new ideas and developed 'theory of diffusion' describing how new ideas spread through a given population of people. Diffusion of innovation is the process by which an innovation is adopted and gains acceptance by members of a certain community. The process occurs over time and can be facilitated through action to educate, invite and support participants in incorporating new technologies, approaches, or products and services (Rogers, 2003).

Innovation diffusion research has attempted to explain the variables that influence how and why users adopt a new information medium, such as internet. Accordingly, the innovation-decision process is the process through which an individual passes: first knowledge of an innovation, to forming an attitude towards innovation, the decision to adopt or reject, to implementation or the new idea, and finally to confirmation of this decision (Rogers, 2003).

Why some individuals embrace technological change and adopt innovations more readily than others do may be explained by the application of diffusion of innovations theory (Rogers, 2003). He further concludes that diffusion of innovation is a type of social change highly dependent upon the individuals who are involved in the adoption of the innovation. Since Rogers uses the terms innovation and technology interchangeably, the diffusion of innovation framework seems particularly suited for the study of the diffusion of ICT in to education assessment.

In this study, the researcher will employ the Roger's theory and mainly focus on the first two stages, that is, on knowledge of innovation and attitudes towards it. Since the MEd students' attitudes are indispensable to the innovation-decision process, the study will aim at investigating students' preparedness in terms of attitudes and skills towards ICT utilization in accessing information.

2.9 Conceptual framework of the study

A conceptual framework is a graphical or diagrammatical representation of the relationship between variables in the study whose purpose is to assist the reader see the proposed relationship. It is a graphical or visual representation that is used to describe the phenomenon under study (Jwan, 2010).

Figure 2.2 shows the relationship between the dependent and independent variables that may influence the utilization of ICT to access information by M.Ed students.

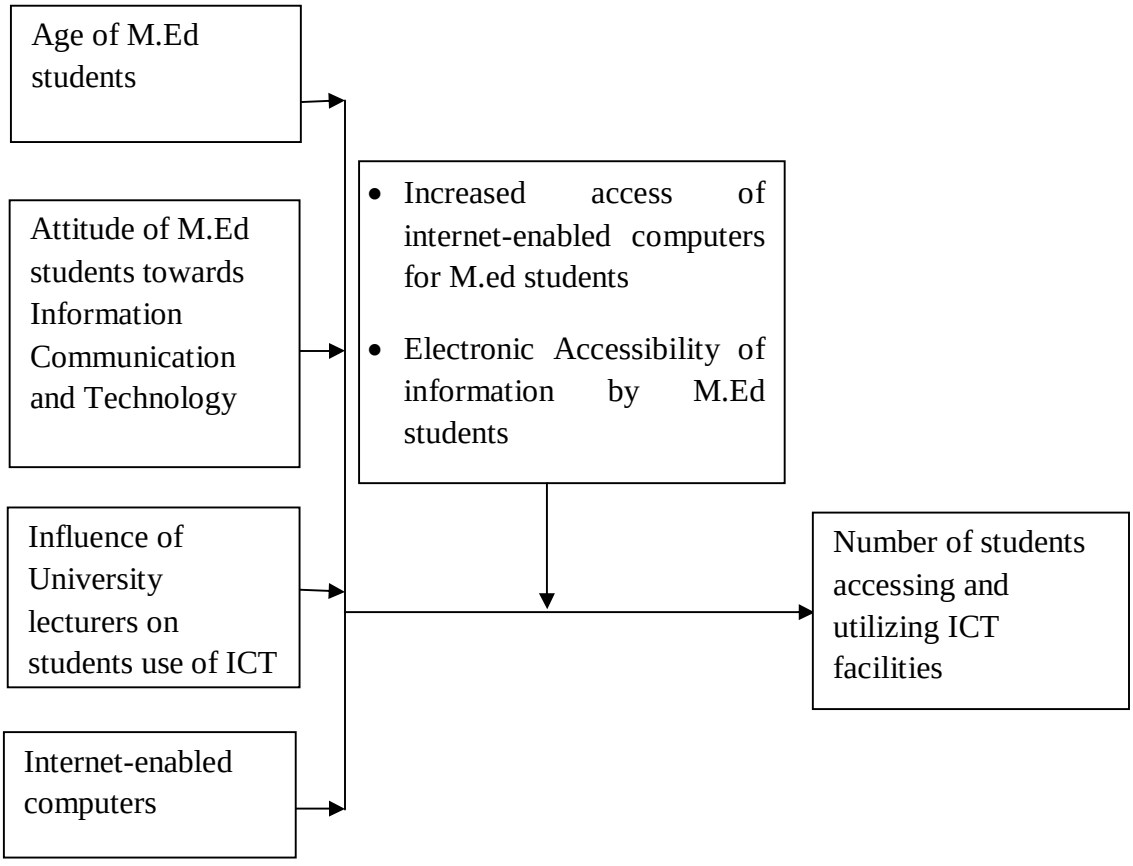


Figure 2.2: Conceptual framework

The independent variables of this study were the age of the M.Ed students, attitude of M.ed students towards Information Communication and Technology, influence of university lecturers on students use of ICT and internet-enabled computers.

These variables were anticipated to have an influence on the dependent variables of the study which is the maximum utilization of ICT by M.Ed students to access information. It was expected that if students change their attitude regardless of age and there is increased access to internet-enabled computers for M.Ed students, then the students will have increased accessibility of information which will lead to maximum utilization of ICT.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methodology used during the study. It comprises a detailed account of the following; research design, target population, sampling techniques and sample size, research instruments, validity of research instruments, validity of research instruments, data collection procedures and data analysis techniques.

3.2 Research design

Research design "is the conceptual structure within which research is conducted; it constitutes the blueprint for collection, measurement and analysis of data" (Kothari, 2004). The study adopted descriptive survey design Mugenda and Mugenda (2003) describe descriptive survey as the process of collecting data in order to test hypothesis or to answer questions concerning the current status of the subject of the study. The design was ideal for this study because the topic of the study is educational and will seek to gather information in understanding characteristics of the group under study, in terms of their age, IT literacy level and their attitude towards use of ICT to access information.

3.3 Target population

Population is the group to whom the researcher would like to generalize the results of the study (Best & Kahn, 2011; Mugenda and Mugenda, 2003). The total population of this study was all the six hundred and thirty five (635) Masters of Education students of University of Nairobi School of Education (Office of the Dean, School of Education (SoE), Kikuyu Campus, University of Nairobi, 20th March, 2014).

3.4 Sampling techniques and sample size

According to Mugenda and Mugenda (2003) a sample is a smaller group procedurally selected from the population to represent it. A sample of 10% of all the 635 master of education students was used**.** According to Thomas and Nelson (1996) random sampling led to selection of a sample that could be inferred back to the larger population.

Table 3.1: Target population and Sample size in the study

Category	Target population	Sample
Department of Educational Administration and Planning	441	44
Department of Educational Foundations	57	6
Department of Educational Communication and Technology	120	12
Department of Psychology	17	2
Total	**635**	**64**

3.5 Research Instruments

This refers to the tools to be used by the researcher. The questionnaires were used to collect data from the Master of education students from the University of Nairobi. Closed and open ended questionnaire items were used and administered to the selected sample. These were used because they are easy to administer and was cost effective.

According to Mboroki (2007) in depth questionnaire can capture the various environments and the way the learners manipulate these environments to satisfy the requirements of the university in relation to their academic performance for certification. Questionnaires also consist of many items that, when combined,

produce more reliable measure of constructs than would any single item (Dooley, 2004).

In this study, the questionnaires for the students was related to the age of students, their attitude, competency with ICT related services and the availability of internet-enabled computers on use of e-resources. Interview guide was used to collect information from the ICT officers from different education departments. Interview schedule contained unstructured open ended and semi-structured questions. These questions covered the four objectives of the study. Interviews are advantageous since they offer in-depth information of the matter since the researcher can ask more questions than the formulated (Jwan, 2010).

3.5.1 Validity of research instruments

According to Gachuiga (2010), instrument validity is the accuracy of the measure in reflecting the concept it is supposed to measure. The validity of the data collected using the instruments were ensured by adopting the following strategies. First, care was taken when designing to avoid ambiguity to ensure that all respondents understand the questions and respond in accuracy. All variables as contained in the study objectives were adequately covered by the instruments by actually using them to guide the design of the instruments. Finally, piloting of the instrument enabled the researcher to make final modifications accordingly. The closed ended questions in this instrument are specific and can present more precise information. In instrument validation pilot study was done on at least two

respondents who were not used in the final study. Errors noted in the pilot study were then discussed with the supervisor and corrected.

3.5.2 Reliability of research instruments

Reliability of the instruments indicates the extent to which the research work is without bias (error free) and hence offers consistent measurement across time and across the various items in the instrument. The test-retest reliability was used to measure reliability with the purpose of improving on the instruments' reliability.

A correlation coefficient of above 0.5 was found between the two separate scores attained from the 1st and 2nd trials was computed using the row score method, (Best and Kahn, 2005) as shown below.

$$r = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}}$$

Where:

$\sum x$ = sum of the x score

$\sum \mathbf{y}$ = sum of the y score

$\sum x^2$ = sum of the squared x score

$\sum \mathbf{y^2}$ = sum of the squared y scores

$\sum \mathbf{xy}$ = sum of the product of paired x and y scores

n = number of paired scores

A Pearson Product Moment Correlation Coefficient (PPMCC) of 0.99 which is more than 0.5 was obtained; hence the instrument had a high degree of reliability because a coefficient that is close to plus or minus one indicates a strong relationship (Mugenda and Mugenda, 2003).

3.6 Data collection procedures

A research authorization permit was obtained from the National Commission for Science, Technology and Innovation (NACOSTI). Students were randomly chosen from various programmes offered at the various departments in the School of Education. The respondents were selected from different departments; department of Educational Administration and Planning, department of Educational Foundations, department of Educational Communication and Technology and department of Psychology. The respondents were assured of identity anonymity to uphold privacy and confidentiality. Questionnaires were administered and adequate time was to be allowed to fill in the data.

3.7 Data analysis procedures

All the data was collected and checked first to ensure completeness. After editing and sorting out the questionnaires for completeness, returns, and coding, computer software that uses Statistical Package for Social Sciences, (SPSS) was used. The data was analysed both qualitatively and quantitatively. Data collected

from open-ended questionnaires where the respondents were required to give their views and attitudes was analysed qualitatively by use of narrative descriptions.

Quantitative data was analysed using descriptive statistical tools such as frequency tables, bar graphs, percentages and correlations, Mugenda and Mugenda, (2003) on the determinants of factors influencing utilization of ICT to access information by master of education students.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents the findings of the study and the interpretation of the results of data analysis in relation to factors influencing utilization of ICT to access information by Master of Education students within the University of Nairobi. The findings were presented in the order of the study objectives and aimed at answering the following questions: how the age of M.Ed students affect their use of electronic information resource; the extent to which attitude of M.ed students influence the use of e-resources in accessing information; the extent to which the university lecturers influence the use of e-resources by M.Ed students to access information and how the availability of internet – enabled computers affect the M.Ed students to access information

4.2 Response rate of instruments

The study sampled 64 Masters of Education students drawn from different departments from whom the data collection was carried out through questionnaires. All the questionnaires were returned. This represented a 100% response rate which is higher than the 70% threshold recommended by Kothari (2004).

Table 4.1: Response rate

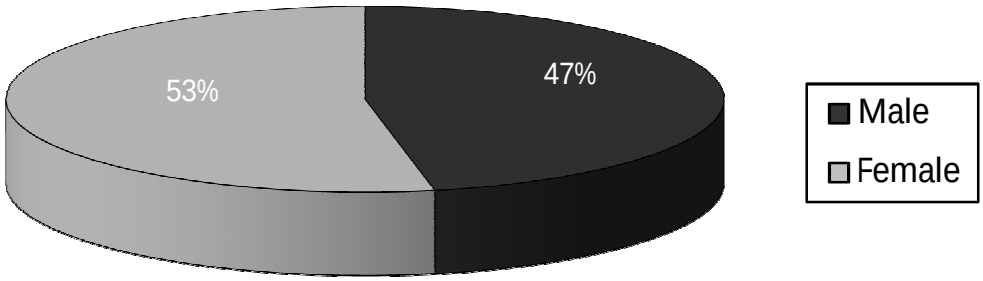
Category	Issued	Returned
Department of Educational Administration and Planning	44	44
Department of Educational Foundations	6	6
Department of Educational Communication and Technology	12	12
Department of Psychology	2	2
Total	**64**	**64**

4.3 Demographic characteristics of the respondents

The study collected demographic information of the participants in the study. This was necessary in order for the study to establish gender, age and marital status of the Masters of Education students. This section presents the findings from the analysis of demographic data.

Demographically the female students were the majority followed by the male students. This is shown by 53.1% of females and 46.9% of the male gender. The findings are presented in Figure 4.1 below.

Figure 4.1 A pie chart of gender distribution



The age distribution of the respondents indicated that the leading age group is 30–35 years. 34.4% of the total population registered for Master of Education at the University of Nairobi. They were followed by 25-29 years age group at 16 (25%), third category was 36-40 years at 12 (18.8%). Fourth category was 41-45 years at 11 (17.2%), finally the least group doing their Master of Education at above 45yrs is 3 (4.7%). Mostly the age group 30-35yrs could be leading because they probably were working and could pay for their education while low numbers of higher ages could be attributed to the more responsibility they might have.

The leading numbers of the Master of Education students at 39 (60.9%) were married followed by the single student population at 21 (32.8%) while 4 (6.3%) of the respondents were separated and none of the students were divorced.

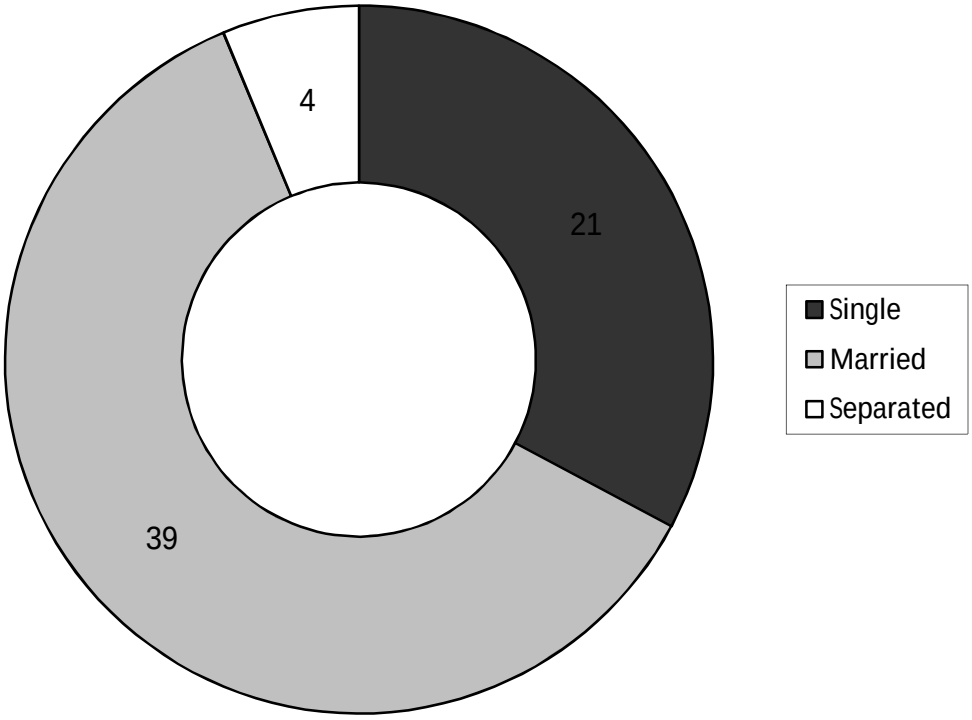
Table 4.2: A summary of demographic characteristics of respondents

Demographic factors	Variable	Frequency	Percentage
Gender	Male	30	46.9
	Female	34	53.1
Age	25-29 years	16	25
	30-35 years	22	34.4
	36-40 years	12	18.8
	41-45 years	11	17.2
	Above 45	3	4.7
Marital status	Single	21	32.8
	Married	39	60.9
	Divorced	0	0
	Separated	4	6.3

Most of the respondents are married. This indicated that there were preference among the study population of doing their post graduate studies when they were married or could be courtships and relationships at the undergraduate contributes to most of them settling down by the time they are doing their post graduate education. Single students follows, this could be due to the desire to complete

higher education before settling down to be either a family man or woman or lack of financial stability at the time one was doing post graduate to be able to manage all the financial responsibilities which comes with higher education and the family.

Figure 4.2. Distribution of marital status frequencies



4.4 Age of Masters of education students and use of electronic resources in accessing information in UoN

Generally, older people were not only less likely than younger people to have accessed the internet, but also used it less frequently. The researcher investigated the contribution of age factor on internet usage hence access to electronic resources and as given in Table 4.1 above, the respondents were of varied ages. A cross tabulation of age and ability to use the internet was done to assess the relationship and the results are given in the Table 4.3.

Table 4.3: Cross-tabulation of Age and ability to use the internet

Ability to use internet	**Yes**		**No**	
Age	**Frequency**	**%**	**Frequency**	**%**
25-29 years	14	25.5	2	22.2
30-35 years	22	40	0	0
36-40 years	10	18.1	2	22.2
41-45 years	6	10.9	5	55.6
Above 45 years	3	5.5	0	0

The result of the cross tabulation shows the relationship between the age of the master of education students and the influence of the same on the use of the e-resources.

From Table 4.3 the ability to use internet was affected by the age of the respondents. The highest ability to use internet was seen at the age group of 30-35yrs which generally a younger age was having 40% of those who are able or have ease of internet use. The age factor was further supported by the age group 25.5% and 40% is 65.5% is a clear indicator that those who are collectively between 25 to 35 years find a lot ease in using the internet. This statistic could be attributed to the fact that these were young people who probably had learnt in modern high schools currently who had computer laboratories in addition to the traditional labs and the introduction of computer studies to secondary schools across the country or attended computer colleges to have a grasp of the internet skills.

On the other hand 10.9% in 41-45yrs were able to use computers comfortably however the same age group had the highest number of those who are not able to use the internet as an e-resources at 55.6% a clear indication that age is actually a factor to consider in the use of the internet. The higher percentage could be as a result of the education system the respondents went through where there were no computer classes and the only way to learn computers leave alone the internet while the younger age lot could be advantaged by the learning system they went

through which encourages the use of the internet in searching information. These are commonly known as the internet generation (Saunders, 2004).

Table 4.4 Possession of computers and their usage

Factors	Variable	Frequency	Percentage
Have a computer	Yes	41	64.1
	No	23	35.9
Usage time	Less than an year	11	17.2
	1-2 years	8	12.5
	3-4 years	13	20.3

Table 4.4 above shows that 41 (64.1%) out of 64 respondents had personal computers or laptops; only 23 (35.9%) didn't have. For those who had computers, the usage time varied as 11 (17.2%) were less than one year, 8 (12.5%) had 1-2 years, 13 (20.3%) with 3-4 years of usage and 9 (14.1%) with 5 years and above. The respondents who didn't have computers gave various reasons to support their responses which included: inadequate funds and the gadgets being expensive to acquire.

According to Pelgrum (2001) the success of the university educational innovations depends largely on the skills and knowledge of lecturers. Lecturers'

lack of knowledge and skills on ICT is one of the main hindrances to the use of ICT in the university education both for the developed and underdeveloped countries (Mamun and Tapan, 2009).

Utilizing ICT in the university curriculum requires lecturers' knowledge in the subject area, as well as an understanding of how students learn using ICT and a good level of ICT technical expertise among the lecturers (Morgan 1996).Moreover, Berner (2003) found that the faculty's' belief in their computer competence was the greatest predictor of the use of computers in the lecture halls (Ihmeideh, 2009). Therefore lack of knowledge regarding the use of ICT and lack of skills on the ICT tools and software have also limited the use if ICT tools in accessing information in the university.

4.5 The extent to which attitude of M.Ed students influence the use of e-resources in accessing information in UoN

Attitude is defined by Ajzen (2005) as a disposition to respond favourably or unfavourably to an object, person, institution or event. It influenced actual behaviour both directly and indirectly. The study looked into the attitude as a factor influencing the use of e-resources in accessing information in UoN. The results are shown in Table 4.5 as follows.

Table 4.5: General ability to search for information, enjoy participating while using computers and general interaction with computers as factors affecting information access

Factor	Variable	Frequency	Percentage
General ability to search for information	Excellent	2	3.1
	Very good	25	39.1
	Good	20	31.3
	Poor	14	21.9
	Very poor	3	4.7
Enjoy participating while using computers	Very much	21	32.8
	Much	12	18.8
	Fairly	23	35.9
	Not at all	8	12.5
General interaction with computers	Excellent	9	14.1
	Very good	15	23.4
	Good	22	34.4
	Poor	15	23.4
	Very poor	3	4.7

Attitude as a factor affecting the use of the e-resource within UoN was assessed among the Masters of Education students and the results summarized in the Table 4.5. The general ability to search for information among the respondents were

such that 39.1% ranked very good followed by good at 21.9%, poor 21.9% ,very poor 4.7% and excellent 3.1%. It is clear that most of the students have that ability to search for information in the internet.

Secondly enjoying participating while using computers was investigated, the levels were very much, much, fairly and not at all with percentages as 32.8%, 18.8%, 35.9% and 12.5% respectively. Those who didn't enjoy participating while using computers had a smaller percentage of 12.5, therefore the contrary that is enjoying participating while using computers was higher among the respondents. The general interaction with computers was rated from the research with excellent at 14.1%, very good at 23.4%, good at 34.4%, and poor at 23.4% and very poor at 4.7%. From this it was evident that most of the students had interacted with computers.

Mumtaz (2002) stated that many scholars proposed that the lack of funds to obtain the necessary hardware and software is one of the reasons students do not use technology in their studies. Afshari, Baker and Su-Luan *et al.* (2009) state that efficient and effective use of technology depends on the availability of hardware and software and the equity of access to resources by the students, lecturers and the administrative staff. These costs are in most cases inflated and cannot be provided by most developing countries including Kenya. Second –order barriers to use of ICT include both institution level factors such as organizational culture and teacher level factors such as attitudes and openness to change.

Effective utilization of technology into university education systems involves substantial funding, that is very hard to manage in developing countries like Kenya, where many people are living below the international poverty line. ICT supported hardware, software, internet -enabled computers and other accessories demand huge funds.

Using up to date hardware and software resources and internet – enabled computers are a key feature in the diffusion of technology (Gulbahar, 2007) but not a well-established experience in the university education. High – speed internet connection is another prerequisite for utilizing ICT into accessing information. But unfortunately internet access is very poor.

Figure 4.3 A bar graph showing general ability in use of computers

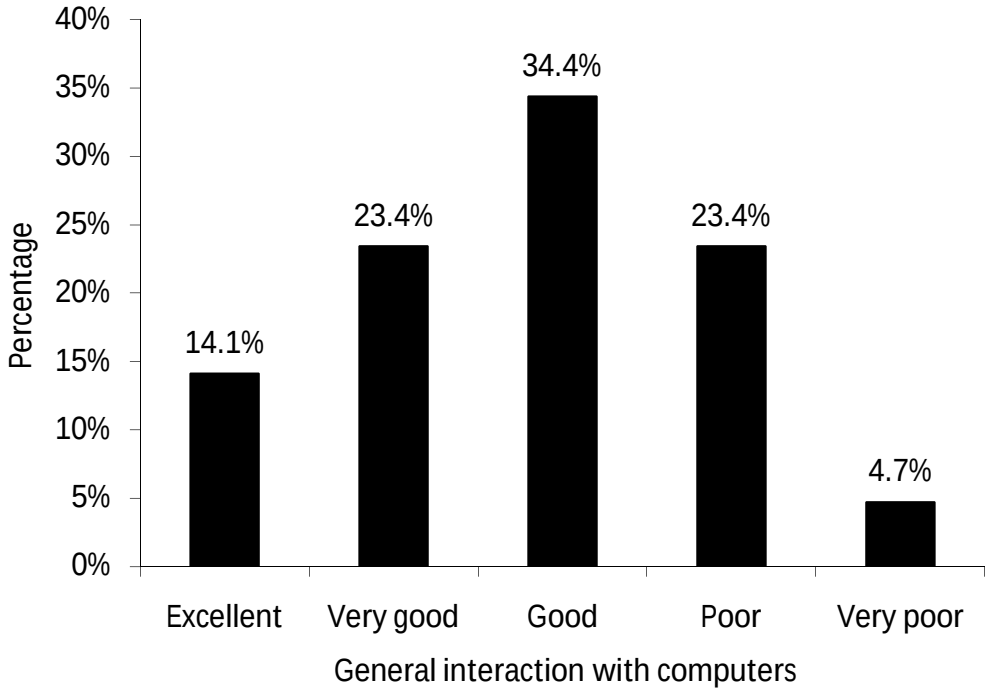


Figure 4.3 shows that generally most of the respondents were good in the use of computers as shown in summary Table 4.6.

Table 4.6 Rating of how often you use computer and hours spent on computer as factors influencing access to information

Factor	Variable	Frequency	Percentage
Rating of how often computer is used	0	5	7.8
	1	5	7.8
	2	21	32.8
	3	15	23
	4	11	17.2
	5	7	10.9
Hours spend on computer	0	13	20.3
	1-2 hours	18	28.1
	3-5 hours	14	21.9
	6-8 hours	19	29.7

Table 4.6 above shows the respondents rating on how they use computers. The ranking varied across the divide from 0 to 5 with 0 representing never using a computer and 5 most often using computers. The majority were at rank of 2 with

32.8% followed by rank of 3 at 23.4%, 5 at 10.9%, and 2.5 at 7.8% each. The ranking therefore explained that most respondents rarely used computers

According to the respondents' hours spent on computer, 13 (20.3%) spend 0 hours, 1-2 hours at 18 (28.1%), 14 (21.9%) at 3-5 hours and 19 (29.7%) at 6-8 hours.

Figure 4.4 Frequency distribution of hours spent using computers

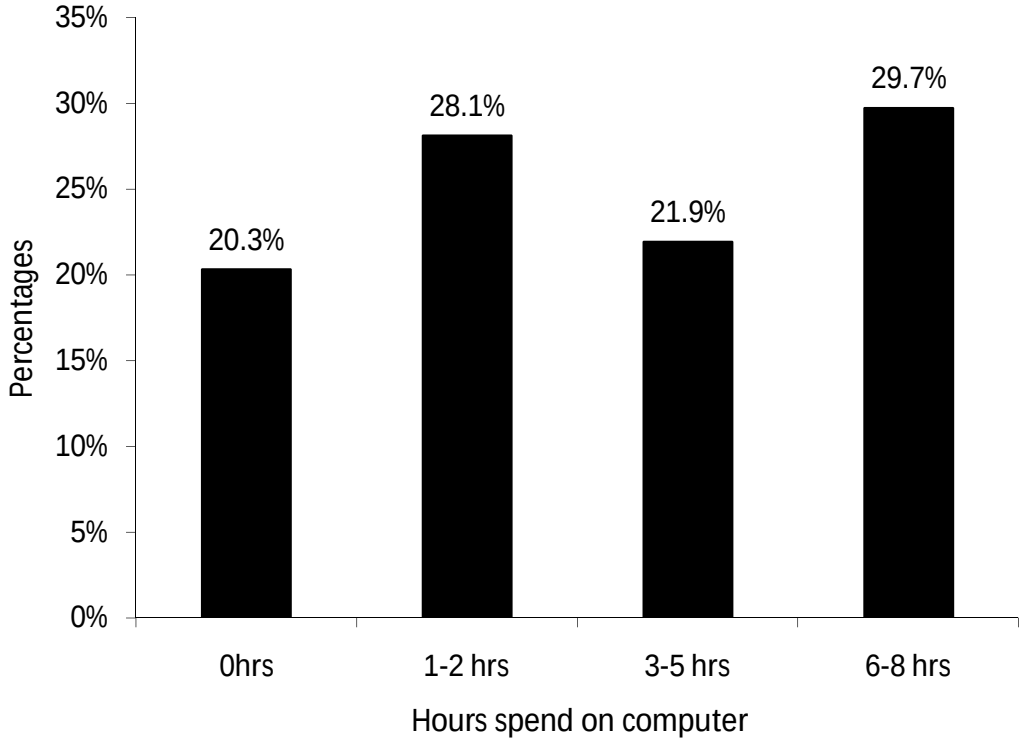


Figure 4.4 shows that most of the respondents use computers for between 6-8 hours.

4.6 Influence of University lecturers on the use of e-resources by M.Ed students to access information

The Masters students, as requirement by the university policy, have to conduct a research as part of their academic requirement for the award of postgraduate degree. They are required by their lectures to do extensive research for which the internet plays a crucial role hence the need to understand the importance and use of e-resources widely.

From the interviews, it was revealed that most of the students were aware of the existence of wireless access points within the University. Students could access the internet mostly from the computer laboratory, library, student centres and hostels. In addition they confirmed that most MEd students were not aware of the availability of electronic resources such as e-books, e-journals, e-library, open books and publishers and many other online resources.

Generally, there was an assumption that students were well equipped with computer and internet skills which was not always the case for most of the students since others found it difficult to use the computer effectively, let alone the internet. They preferred using the internet enabled devices especially smart phones to access the social media such as Face book, what's app, twitter, and sports websites/blogs at the expense of e- learning resources which can help them build their careers and conduct more effective and significant researches. The

Med students had inadequate competent skills to enable them access the e-resources to the maximum.

From the head of ICT department, working hours of the computer laboratory is limited. Students were expected to use the facility within the allocated time specified by the ICT department. Furthermore, the student to computer ratio is below the threshold. The laboratory is also less spacious to accommodate many students at ago.

Most of the students general internet use was for doing research in the area of study this includes assignments and exam preparation. Other student also use the internet as a social platform where they were able to share and be together contribute to the social well-being of each other and learn

4.7 The availability of internet-enabled computers and their effect on the M.Ed students to access information

The internet is a global system of interconnected computer networks that link several billion devices worldwide. A lot of information is routinely available through searching websites for information using search boxes (for instance search engines such as goggle, yahoo, Bing, web search). Access to technology is an important issue for teachers and students. Although schools may have computers, one factor that determined their use was location and whether internet enabled. To make the best use of the limited connections and equipment, the

schools could explore various strategies for allocating computers that was the computer lab in school should be carefully to provide high equipment utilization, on the other hand keeping the computers in one place might be a barrier to using them on a continual but intermittent basis as part of the curriculum.

The study sought to find factors influencing utilization of ICT to access information by the M.Ed students. The results from the respondents were tabled.

Table 4.7 Factors relating to use of internet-enabled computers and their effects on students access to information

Factors	Variable	Frequency	Percentage
Ever attended computer class	Yes	40	62.5
	No	24	37.5
Know what internet is	Yes	62	96.9
	No	2	3.1
Ability to use internet	Yes	55	85.9
	No	9	14.1
Asked for assistance when unable to search	Yes	50	78.1
	No	14	21.9

Colleagues ability	Very adequate	0	0
to access	Adequate	45	70.3
information	Inadequate	19	29.7
	Very inadequate	0	0

Table 4.7 show that 40 (62.5%) of the respondents have attended computer class; the remaining 24 respondents (37.5%) said that they had never attended a computer class before. On the knowledge of what the internet is, 62 (96.9%) indicated that they were aware while a negligible 2 (3.1%) didn't know what the internet was. This explained that most students have directly interacted with the computers although the main thing is not your knowledge of the computer but how well you can focus the knowledge to access information.

Students attitude have been found to be major predictors of the use of new technologies in the instructional settings (Almusalam, 2001). Mumtaz (2002) states that students' belief about accessing information with ICT is central to integration. To be successful in computer use and utilization, students need to "engage in conceptual change regarding their beliefs about the nature of accessing information".

Hence the successful use of ICT into accessing information largely depends on students' attitude and beliefs. In fact, it has been suggested that attitudes towards computer affect students' use of computers in accessing information and the

likelihood of their benefiting from the training (Kluever, *et al*. 1994). It is found out those less technologically capable students, who possess positive attitudes towards ICT, requires less effort and encouragement to learn the skills necessary for the utilization of ICT in their design activities in accessing information. Therefore, students who have positive attitude toward ICT itself were positively disposed toward using it in accessing information.

Moreover, Harrison and Rainer (1992) found that participants with negative computer attitudes were less skilled in computer use and were therefore less likely to accept and adapt to technology than those with positive attitudes. They concluded that changing individuals' negative attitude is essential for increasing their computer skills. Therefore, if students want to successfully use technology in their studies, they need to possess positive attitudes to the use of technology. Such attitudes are developed when students are sufficiently comfortable with technology and are knowledgeable about its use Afshari et al.2009).

Figure 4.5 Distribution of colleagues' ability to use computers

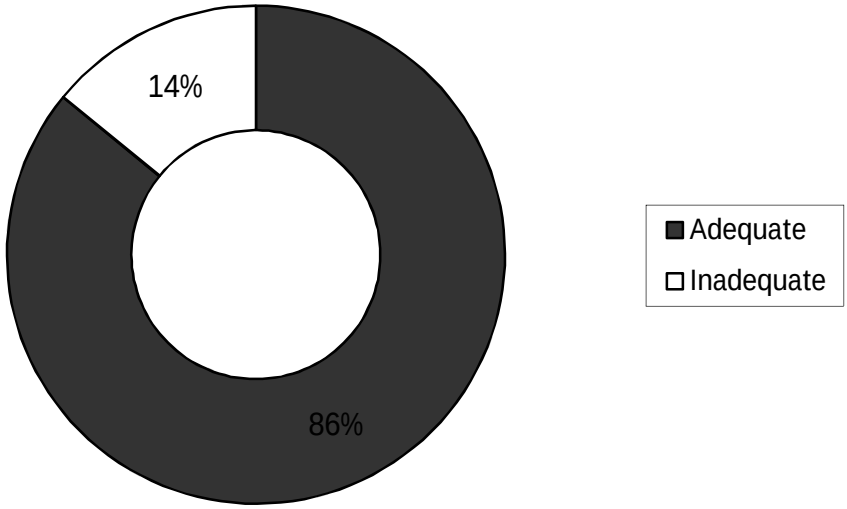


Figure 4.5 shows that most the respondents are inadequate in use of computers. In addition most students indicated that they were able to use the internet with 55 (85.9%) responding positively and the remaining 9 (14.1%) against. This could be due to less practical use of the internet especially in accessing electronic resources. Most students had no access to computers and don't get time to go to the laboratory due to other commitments and lack of enough money to purchase their own computers; however the digital divide is satisfactory.

The study realized that 45 (70.3%) of the respondents could adequately access information from the internet. The remaining 19 (29.7%) of the respondents' ability to access information was inadequate. It was also revealed that 50 (78.1%) could boldly ask for assistance when unable to search. Only a few 14 (21.9%) had no confidence to take the step. This shows that most of the respondents were

eager to learn than struggle with the problem on their own unlike the few who were not ready to bury the pride or fear factor continue to struggle in their ignorance than look for solutions when it is within reach.

In general life situation, when you have a problem asking for help sounds like an obvious solution yet we so often choose to struggle with our problems alone, sometimes even going so far as to isolate ourselves or pretend that everything is alright when that is far from the truth. It takes guts to ask for help. Asking for help is about opening up and sharing that you are perfectly imperfect human being; sharing that you are vulnerable. Chances are that they have faced similar problem and can relate deeply into what you are going through. This helps you grow as a person since asking for help is a demonstration of confidence.

The respondents were asked to name the common features which they were able to search through the internet and they mentioned either of the following: education, finance issues or sports. The benefits for the above features as said by the respondents included: The internet enabled them to do their assignments and other studies; they are able to carry out research successfully, for entertainment purposes and as a source of information.

The respondents were asked to indicate whether their computer knowledge and ability to search information via internet helps them in their academic performance. The results are shown in Table 4.8 below.

Table 4.8 whether computer knowledge helps in academic performance

Factors	Variable	Frequency	Percentage
Computer knowledge helps	Yes	64	100
in academic performance	No	0	0

Table 4.8 above shows that all the respondents agreed that the computer knowledge they had and the ability to search information via internet helped them in their academic performance. This is represented by the 100% response. This explained the importance of knowledge in using computer applications including browsers to search for information necessary for academic excellence. The internet solves the hectic problem of searching thoroughly through the library of books for information which could be found within seconds via the internet.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the major findings of the study as well as the conclusions made from them. The section also presents recommendations made by the researcher as well as suggestions for future studies related to the factors influencing University of Nairobi Master of Education degree students' access and utilization of Information Communication and Technology facilities.

5.2 Summary of the findings

The purpose of this study was to establish the factors influencing University of Nairobi Master of Education degree students' access and utilization of Information Communication and Technology facilities. Data was collected from 64 masters' students via questionnaires. Descriptive analysis techniques were used in data analysis with the help of SPSS version 20. The data was presented using frequencies tables and percentages. The following are the major findings of the study presented in the order of objectives. The study found that age of students had influence on internet usage as young students had the highest ability to use the internet hence the e-resources. The usage decreases as the age increases.

It was also found that some students owned computers (64%) while others (36%) didn't have enough finances to enable them acquire computers/laptops. The computers especially the laptops were expensive to acquire. In order to utilize the growing range of electronic resources, students must acquire and practice the skills necessary to exploit them. These include knowledge of the structure of the databases and the instructions which must be input into the computer by the searcher, as well as an understanding of the ways in which the instructions are linked with one another. Acquiring such knowledge will be dependent on either one being free less financial responsibilities to pay for the trainings and knowledge, factors that are mostly common in the younger energetic population as compared with the much older group who have a lot to attend to leave alone studies.

The study found that students have got ability to search for information from the internet. Also most of the students enjoyed participating while using computers. In addition to that, it was realized that most of the students interacted with computers, prove of positive attitude they have towards computer usage in accessing e-resources.

The findings from the study also revealed that the students used computers but not very often. The respondents spent quite some time working on their computers though the time varies greatly from 1 hour or less to 8 hours. . The result of the analysis on utilization of scholarly electronic publications showed that there was

low level of utilization of scholarly electronic publications in federal university libraries among majority of lecturers. This means that most lecturers do not visit the libraries to utilize the available e-journals. In other words very few lecturers visit the library to utilize the electronic databases.

The findings from the study also revealed that most of the students were aware of the availability of wireless access points within the University. The internet could be accessed from different places including the computer laboratory, library, student centres and hostels. The study revealed that most of the M.Ed students were not aware of the availability of e-resources. The students had inadequate competent skills to enable them access the e-resources to the maximum.

The findings also showed that the working hours of the laboratory were limited and students were expected to use the facility within the allocated time. It was also revealed that students' general internet use was for doing their assignments and accessing the social networks.

From the study, it was found that most of the students are aware of the existence of wireless access points within the University. Students could access the internet mostly from the access points within the university. The lecturers were useful in the implementation of the policies that helped in internet infrastructure development and training students on how to get the best from the resources.

The study found that almost all the students had used the internet before hence were aware of what it entailed. However, just an average number of the respondents said that they had attended computer classes before to familiarize themselves with the use of computer applications and internet. It was revealed that the students could adequately access information from the internet. Most of the students were also bold enough to ask for assistance when unable to search.

The findings explained that the common features the students were able to search using the internet included education, finance issues and sports among others. The students benefited from the features as they enabled them to do their assignments quickly, researches could be done successfully, they were entertained and had the ability to access information that they wanted.

Finally, the respondents agreed that the computer knowledge they have and the ability to search for information via internet helped them in their academic performance.

5.3 Conclusion

From the findings, it can be concluded that the age of M.Ed students influenced the use of electronic resources in accessing information in UoN. The younger ages were more users of the internet in accessing information compared with their old counterparts.

It can be concluded that the attitude of M.Ed students influences the use of e-resources in accessing information in UoN. The more a student is positive about ICT the more he/she uses it in making information access easier during a learning process.

University lecturers have influence on the use of e-resources by M.Ed students to access information. The lecturers required the students to do extensive research for which the internet plays a crucial role hence the need to understand the importance and use of e-resources widely.

It can be concluded that availability of internet-enabled computers influenced the use of e-resources by M.Ed students. The study established that having internet enabled computers contributed to speedily information access as opposed to just having computers without the ability to be used for information search and retrieval.

5.4 Recommendations

Based on the aforementioned study findings the following recommendations of the current situation on the utilization of information and communication technology in university education were suggested:

It is evident that the age of the students in higher learning environment, the attitude, availability of internet enabled computers affects the utilization of ICT to

access information among M.Ed students of UoN therefore the researcher recommends the following in boosting utilization of ICT to access information.

i. The age of M.Ed students influenced the use of electronic resources in accessing information in UoN. The olders students should be encouraged to use e-learning by the lecturers and university management. This can be done through seminars that will highlight the benefits of e-resources in learning.

ii. The attitude of M.Ed students on the use of e-resources in accessing information in UoN was found to be negative. The M.Ed students should therefore be encouraged to use e-resources in their research since it has a lot of benefits. This can be done by lecturers holding meetings with students to enlighten them on the benefits of e-resources in learning.

iii. It was found out that university lecturers influence use of e-resources by M.Ed students to access information. The lecturers should therefore be encouraged to reinforce the use of e-resource by students in doing the assignments. This can be done by the university organizing for seminars for lecturers to enlighten them on the utilization of information communication technology facilities by M.Ed students.

iv. The availability of internet-enabled computers was found to influence the use of e-resources by M.Ed students. Majority of the students don't have their own computers. The government should therefore provide funds inform of loans to enable as many students as possible to acquire their own computers.

5.5 Suggestions for further study

The role played by ICT in our learning institutions is inevitable therefore more research should be conducted on the following:

i. The contribution of the ICT as information source to the student performance.

ii. To determine whether students who own computers/laptops perform better than the ones who don't have and depends on the shared computer laboratory.

iii. To assess the value of Information Communication and Technology in education.

REFERENCES

Abdulla, A., & Abdullah, M. (2000). *School Technology Leadership: Incidence And Impact (Teaching, learning and computing: (*1998) National Survey Report). Irvine, CA; Centre For Research on information technology and Organizations, University of California, Irvine.

Ackerman, E. (1996). *Tools for Reaching: the Worldwide Web and a web Browser.* Retrieved on 2 July, 2014 from www.mwc.edu/falalad/www-teaching-html.

Afshari, M., Bakar, K. A., SuLuan, W., Samah, B. A., & Fooi, F.S. (2009). Factors affecting teachers' use of information and communication technology, *international journal of instruction.* 2(1), 77-104.

Agbonlahor, R.O. (2005). *Utilization Levels and Attitudes towards Information Technology among Nigeria University Lecturers.* Thesis, African Regional Centre for Information Science. Ibadan: University of Ibadan.

Ajuwon, J. (2003). *The use of Electronic Information Services by Students* Library and Information Research: Glasgow Caledonia University.

Ajzen, I. (2005). *Understanding attitudes and predicting social behaviour.* Eaglewood cliffs, NJ: Prentice-Hall.

Almusalam, S. N. (2001). *Factors related to the use of computer technologies for professional task by business and administration teachers at Saudi technical colleges.* (Doctoral Dissertation, the Ohio state university (2001). Pro-quest Digital Dissertations. (UMI No.AAT 3011019).

Bakkabulindi, F. E. (n.d). Individual Characteristics as Correlates of Use of ICT. *Makerere University International Journal of Computing and ICT.* Research, Vol 5, Issue 2, pp 38-45.

Bates, S. P., Bruce, A.D., & McKain, D. (2005). *Integrating E-learning and On-Campus Teaching.* An overview, Research proceedings of the 12th Association of Learning Technology Conferences pp 130-135.

Best, J. W., & Kahn, J. V. (1992). *Research in Education*. New Dehli: Prentice Hall at India Private Limited.

Casal, S. T. (2007). *Teacher Professional development in the use of technology*. Paris and Washington, DC.

Corlett, D., Sharples, M., Bull, S., & Chan, T. (2005). Evaluation of a mobile learning organizer for university students. *Journal of Computer Assisted learning.* p. 45.

Corl, S. (1996). *Novices on the net: An Introduction to Education class uses Email and the Internet* 9ED 402998).

Crown, L. K. (2010). *The Learner Experience of E-Learning Final Report*: Retrieved on 3rd Feb, 2014 from www.jisc.ac.uk/elplearneroutcomes.html.

Dingley, E. (2010). *Postgraduate Information Needs and Online tools awareness*. Arcadia: University of Cambridge.

Dooley, D. (2004). *Social research methods* (3rd ed). New Delhi: Prentice-Hall of India.

Draper, J. N., & Brown, G. S. (2004). *Research in Education and the Behavioural Sciencs.* Concepts and Methods. Brown and Benchmark, Madison.

Duderstudt, J. J. (1997). The future of the university in an age of knowledge, *Journal of Asynchronous Learning Network*, 1 (2).

Edniburg, S. F. (2009). *Computer Literacy and use of Electronic Information sources by academics. A case study of international Islamic university, Malaysia.* Asian Libraries 8 (4): 100-111.

Finger, D. T, (2007). Engagement with Electronic Portfolios: Challenges from the Student Perspective, *Canadian Journal of Learning and Technology* 31 (3) Special Issue on E-Portfolios.

Gachuiga, J. N. (2010). The Influence of Institutional and Human Factors on Readiness to Adopt e-learning in Kenya :The case of secondary schools in Kitui District, from <http:/erepository.konbi.ac.ke>retrieved on 2/04/2014.

Gateway, D. R. (2010). *Defining ICT in Education*. Retrieved February 3, 2014 Fromhttp://www.rwandagateway.org/ICT4E/spip.php/rebrique6.

Gill, H .I., & Dangarna, R, A. (2005). *Internet use by Students of the University of Dares salaam Library*. Hi Tech News 21 (5): 13-17h.

Gilter, A. (1997). Categories of computer use and their relationships with attitudes towards computers. *Journal of research on computing in education* 30 (3) pp 281-292.

Gulbahar ,Y. (2007). Technology planning: A roadmap to successful technology intergration in schools. *Computers and secondary school education* 49(4): 943-956.

Harrison, A. W., & Rainer, R. K. (1992). The influence of individual differences on skill in end- user computing. *Journal of management information systems*, 9(1) 93-111.

Ibrahim, S. H. (2004). *Students Use of ICT Tools; Choices and Reasons*. Proceedings of the 29th Conference of the International Group for the Psychology of Mathematics Education.

Ilomäki, L., Lakkala, M., & Paavola, S. (2006). Case studies of learning objects used in school settings. *Learning, Media and Technology*, vol. 31, p.249–267.

InfoDev (2005). *The comparative effectiveness of computer assisted and teacher presented study skills courses for low achieving college students*. EDD University of ANNATI Dissertation Abstracts.

Jwan, J. (2010). *Conducting Qualitative Research: Current Trends & Developments*: Moi University 5th Campus Wide Research Workshop, 2010.

Kandiri, J. M. (2010). *ICT Policy in Kenya and Ways to Improve Existing ICT Policy*. A paper presented to management science students association UoN.

Kathori, C. R. (2002). *Research Methodology*. (2nd ed): New Dehli.

Ke, C. K. & Chang, L. S. (1999). *An Effective use of ICT for Education and Learning by Drawing on Worldwide Knowledge, Research and Experience (A literature Review).* PHD Research scholar, department of education, University of Kashmir.

Kibera, F. N. (1997). *Critical review of theories of adoption of innovations. In Proceedings of the 4th Annual International Management Conference on Modernization of African Economies*, Challenges and Strategies, Kampala, Uganda, November 1997, Anonymous, Ed. Makerere University Business School, Kampala, Uganda, p. 195-204.

Kluever, R.C., Lam,T.C., Hoffman, E. R., Green, K. E., & Swearinges, D. L. (1994). The computer attitude: Assessing changes in teachers attitudes towards computers. *Journal of secondary school educational computing research* 11(3),251-261.

Lockhead, M. (1980). A review of the Literature on Attitudes towards Computers and Computerized Instruction. *Journal of Research and development in schools*, 16(1), p. 50-55.

Mamun, M.A., & Tapan, S.M. (2009). Using ICT in teaching-learning at the polytechnic institutes of Kenya:Constraints and limitations teacher's world. *Journal of secondary school education and research*, 33(43)207-217.

Malpiedi, B. (1989). In Pursuit of Computer Literacy. *Vocational Educational Journal*. vol. 64: p. 24-27.

Malaysia, U. K. M. (1999). *The Electronic Journal on Information. Systems in Developing Countries*, 1(3):1-8. Method. Nairobi; Masola Publishers.

Marcum, D. B., & George, G. (2003). W*ho uses what*? *Report on a National Survey of Information users in Colleges and Universities.* D-lib Magazine Retrieved on March, 2014 from http://dlib.org/dlibOctober03/george/ 10george.

Markauskaite, K. N. (2006). Application of ICTs in Teaching and Learning at University level. The case of Shahid Beneshti University. *The Turkish Oline Journal of Education Technology*. Vol 9. p. 65-78.

Mboroki, J. G. (2007). *A comparative study of perfomance in teaching practice between the Bachelors (Arts) on-campus students and Distance students*: The case of the University of N airobi: Unpublished PhD Thesis.

McCurtain, S. (1997). "*Computers in the curriculum project."* Computer education vol. 1 ono.1pp.17-24.

Merriam Webster Collegiate Dictionary (15th Ed.) (2003). Springfield, M.A: Merriam Webster.

Ministry of Education (2006). *National Information and Communication Technology (ICT).* Strategy for Education and Training: Nairobi Government Printers.

Morgan, T. (1996). Using technology to enhance learning: changing the chunks. *Learning and leading with technology,* 23(5): 49-51.

Mugenda, O., & Mugenda, A. (2003). *Research methods; Quantitative and Qualitative Approaches.* Nairobi: Act Press.

Mumtaz, S. (2000). Factors affecting teachers' use of information and communications technology: A review of the literature. *Journal of information technology for teacher secondary school educatio*n, 9(3), 319-342.

Nyamboga, M., Ongondo, M., & Ongus, R. (2004). *Experiences in the use of the internet at Egerton University Library.* Njoro Kenya: Egerton University.

Okello, O., & Magara, A. (2008). *Emerging issues in the implementation of computer technology into Kenyan secondary classroom*. Kisumu: Bondo University College.

Okwilagwe, A. O., & Ogbomo, O. (2004). *Computer skills as predictors of lecturers use of scholarly electronic publications for research in federal university.* Libraries in Nigeria.

Olalude, P. O. (2007). Utilization of Internet Sources for Research by Information Professionals Sub-Saharan Africa. *African Journal of Library, Archives, and Information Science.* Vol. 17 pp 53-58.

Oliver, R. (2002). *The Role of ICT in Higher Education for the 21st Century ICT as a Change Agent for Education.* Retrieved from http://elrond.scam.ecu. edu.au/oliver/2002/he21.pdf.

Orodho, A. J. (2003). *Essential of educational and social sciences research method. Nairobi*: Masola Publishers.

Ozoemelem, O. A. (2009). *Use of Electronic Resources by Postgraduate Students of the Department of library and information science*. Abraka, Nigeria: Delta State University.

Pachler, N. (1999). *Learning to teach using ICT in the secondary school*. Routledge London: Routledge Palmer.

Prahalad, C.K., & Hart, S.L. (2002). *The Fortune at the Bottom of the Pyramid* in Strategy Business, Issue: First Quarter, 2002, http://www.strategy-business.com/press/article/ accessed 15 March, 2014.

Republic of Kenya (2003). *Cabinet office. Office of the President. E government strategy.* The strategic Framework, Administrative structure, training requirement and standardization framework.

Republic of Kenya (2013). *The information and Communication Technology Sector* (*Amendment) policy Guidance.* Nairobi: Government Printers.

Rogers, E. M. (2003). *Diffusion of innovations.* New York: Free Press.

Selwyn, P. (2007). *The use of Computer Technology in University Teaching and Learning: A Critical Perspective.* Cardiff, UK: Cardiff School of Social Sciences.

Teferra, D. (2003). *Scientific Communication in African Universities*. External Assistance and National Needs. New York: Routledge Palmer.

Tenopir, C., & King, D. W. (2001). *Lessons for the future of Journal. Nature*. 413: 672-614.

Tilak, J. B. G. (2002). "Education and Poverty" *In Journal of Human Development*, vol. 3 (2) pp. 191-206.

Utsi, S., & Lowyck, J. (2005). *Digital Literacy and the Position of the End-user*. Encyclopaedia of Information Science and Technology vol. 2. p. 875-879. Retrieved March 16, 2014 from http://www.eiisdc.org.

Valentine, B. (1993). Undergraduate research behaviour. Using focus groups to Generat Theory. *Journal of Academic librarianship* vol. 19 (5). p. 300-304.

Watson, M. D. (2005). *Pedagogy before Technology*. Re-thinking the Relationship between ICT and Teaching, Education and Information Technology. Vol. 6 (4), p. 252-266.

White, K. G. (2010). *Beyond the Horseless Carriage: Harnessing the Potential of ICT in Education and Training.* Retrieved June 2, 2014, from: http://works.bepress.com/gerry_white.

World Bank. (1995). *Priorities and strategies for education*; A World Bank Review; World Bank. New York: World Bank.

Zin, M. A. M., Zaman, H. B., Judi, H. M., Amin, H. M., Ayob, M., Abdalla, S. & Abdullah, Z. (2000). *Gender, differenced in Computer Literacy level among Undergraduates.* Students in University: Kebangsaan.

APPENDICES

Appendix A: Letter of introduction

Ruth Mukami Githinji

P.O Box 46685-00100

NAIROBI.

Dear Sir/Madam,

RE: PERMISSION TO CARRY OUT RESEARCH

I am a student at the University of Nairobi pursuing a Masters of Education degree in corporate governance. I am carrying out a research entitled ``**Factors influencing University of Nairobi Master of Education degree students' access and utilization of Information Communication and Technology facilities**.''

I request you to respond to the attached questionnaire to enable me to collect the relevant data in the study that I am conducting. Your identity will be treated with confidentiality. Kindly, give honest and objective responses to all the questions.

Thank you.

Yours faithfully,

Ruth Mukami Githinji

E55/82075/2012

Appendix B: Students' Questionnaire

This questionnaire aims at getting your opinion on your utilization of ICT facilities to access information. You do not have to write your names as your identity will remain confidential. Please be free to give your opinion in the response. Answer all the questions by indicating your choice by a tick where appropriate or fill in the blank spaces.

Section A: Demographic Information

i) What is your gender?

Male [ ] Female [ ]

ii) What is your marital status?

a) Single [ ] (b) Married [ ]

b) (c) Divorced [ ] (d) Separated [ ]

iii) In what category does your age fall?

25-29 [ ] 30-35 [ ] 36-40 [ ]

41-45 [ ] Above 45 [ ]

B. Research Questions

1. Do you have a personal computer/ laptop?

a) Yes [ ] b) No [ ]

2. i) If yes in B.1 above, how long have you been using it in years?

a) Less than an year [ ] b) 1-2 years [ ] c) 3-4years [ ]

d) 5years and above [ ]

ii) If no in B 1 above state the reason(s)

.....

.....

……..

……

iii) Would you like to own a laptop/desktop?

Yes [ ]

No [ ]

3. Do you have any background knowledge of computer use?

Yes [ ]

No [ ]

4. Are you comfortable when using computers?

Yes [ ]

No [ ]

5. Have you ever attended any computer class for familiarizing yourself on its use or applications?

Yes [ ]

No [ ]

6. Does the internet have useful information for M.Ed students?

Yes [ ]

No [ ]

7. i) Are you able to use internet to search any information?

Yes [ ]

No [ ]

ii) If no in 7(i) above, kindly give a detailed answer on why you are not able to search

.....

.....

……...

……

iii) Have you ever asked for any assistance when unable to search information?

Yes [ ]

No [ ]

8 i) What are the most common features you are able to search through internet (e.g. sports, finance issues, educational etc.)? If more than one, kindly indicate them in order of capability and ease while searching

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……..

……..

ii) Of what benefits are these features listed in 8(i) above to you?

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.....

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……

9. Please indicate your general ability to search for information?

a) Excellent [ ]

b) Very good [ ]

c) Good [ ]

d) Poor [ ]

e) Very poor [ ]

10. Do you enjoy participating while using computers?

Very much ( ) Much ( ) Fairly ( ) Not at all ( )

11. How is your a general interaction with computers?

a) Excellent [ ]

b) Very good [ ]

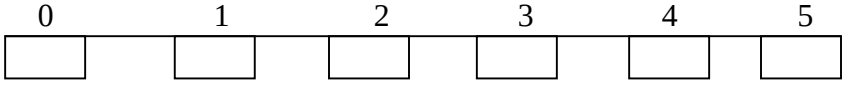
c) Good [ ]

d) Poor [ ]

e) Very poor [ ]

12. How often do you use computers? Use the scale below to show the frequency.

The number 5 means very often while 0 means never.



B. Approximately how many hours do you spend in computers?

a) 0hrs ( ) b) 1-2hrs ( ) c) 3-5hrs ( ) d) 6-8hrs ( )

13. i) Do you think your computer knowledge and ability to search information via the internet helps you in academic performance?

Yes ( ) No ( )

ii) Give reasons for your answer in 13(i) above

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……

……..

15. In what ways does your experience in computer applications on accessibility to information be improved?

.....

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.....

……

Thank you for your cooperation

Appendix C: Interview guide for ICT officers

i) What is your gender?

Male [ ] Female [ ]

ii) What is your marital status?

a) Single [ ] (b) Married [ ]

b) (c) Divorced [ ] (d) Separated [ ]

iii) In what category does your age fall?

25-29 [ ] 30-35 [ ] 36-40 [ ]

41-45 [ ] Above 45 [ ]

iv) How does the age of M.Ed students of UoN affect their use of electronic information resource?

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……

.....

……

v) To what extent does the attitude of M.Ed students influence the use of e-resources in accessing information in UoN?

.....

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.....

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vi) To what extent do the university lecturers influence the use of e-resources by M.Ed students to access information?

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vii) How does the availability of internet-enabled computers affect the M.Ed students to access information?

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Appendix D: Research authorization letter

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

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

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

Ref: No. NACOSTI/P/14/0838/2137

Date: 27th June, 2014

Ruth Mukami Githinji
University of Nairobi
P.O.Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Factors influencing utilization of ICT to access information by Master of Education Students: A case of University of Nairobi students,"*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for a period ending **30th July, 2014.**

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

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

SAID HUSSEIN
FOR: SECRETARY/CEO

Copy to:

The Vice Chancellor
University of Nairobi.

The County Commissioner
The County Director of Education
Nairobi County.

Appendix E: Research clearance permit

THIS IS TO CERTIFY THAT:
MISS. RUTH MUKAMI GITHINJI
of UNIVERSITY OF NAIROBI ,46685-100
nairobi,has been permitted to conduct
research in Nairobi County

on the topic: FACTORS INFLUENCING UTILIZATION OF ICT TO ACCESS INFORMATION BY MASTER OF EDUCATION STUDENTS:A CASE OF UNIVERSITY OF NAIROBI

for the period ending:
30th July,2014

Permit No : NACOSTI/P/14/0838/2137
Date Of Issue : 27th June,2014
Fee Recieved :Ksh 1,000

Applicant's Signature

Secretary
National Commission for Science, Technology & Innovation

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.
2. Government Officers will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.

REPUBLIC OF KENYA

National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No. A 2045

CONDITIONS: see back page