FACTORS INFLUENCING MASTER OF EDUCATION STUDENTS' UTILIZATION OF ICT INTEGRATED RESOURCES IN THEIR STUDIES, UNIVERSITY OF NAIROBI, KENYA.

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A Project Report Submitted to the department in Partial Fulfillment of the Requirements for the Award of the Degree of Master of Education in Curriculum Studies

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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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This research project has been submitted for examination with our approval as university supervisors

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DEDICATION

I would like to dedicate this research work to my supportive father Mr. Dahir and my mother Ms. Fadumo for their relentless support and love throughout my education. I would not have reached the four walls of academia and beyond without you.

ACKNOWLEDGEMENT

Great thanks and praise to Allah by whose mercy have been able to complete this work. I do acknowledge my parents Mr. Dahir Abdi and Ms. Fatima Mohamed for their continued encouragement and support throughout the time I was developing this research project. My indebted thanks to my supervisors by whose continued corrections and guidance has led me to the successful completion of this work; To Dr. Caroline Ndirangu, for her unconditional patience and to Dr. Imonje Rosemary for her unwavering support, I salute you and may God bless you abundantly.

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ABBREVIATION 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

Postgraduate students need to get information in all formats other than paper or print. The purpose of this study was to investigate factors influencing Master of Education student's utilization of Information Communication Technology (ICT) integrated resources at the University of Nairobi. The main objective of the study was to establish the influence of availability of computers, to examine the influence of tutor's methodology and to establish the influence of student's attitude on the utilization of ICT integrated resources. The study adopted Diffusion of Innovation Theory; it explains why some individuals embrace technological changes and adopt innovations more readily than others do. The study adopted descriptive survey design. The total population of this study was all the 234 Master of Education students, three ICT tutors, 2 lab technicians and 4 department coordinators. The sample was drawn from four departments after two departments were randomly selected for piloting. A sample of 30 % of students was used, as for the ICT tutors, the computer lab technicians and program coordinators they were purposively sampled. The study employed three sets of questionnaires to gather data, for M.Ed students, for ICT tutors and for lab technicians and key informant interview was conducted for the department coordinators .The frequencies were run with the aid of SPSS version 21. The study found that the availability of computers does not influence ICT utilization, majority of students (58.0 %) said they have access to computers, of the 58% only 14% of the students had good computer knowledge. The study also found that the tutor's methodology influences ICT utilization, majority (60.0 %) of students said that tutors methodology does not cover the areas that can help them learn necessary ICT skills. The study also found that the attitude of master of education students influences the utilization of ICT integrated resources, 60.0 % of students had a positive attitude. The researcher concluded that the availability of computers does not influence ICT utilization. It is also concluded that the tutors' methodology influences ICT utilization. It can also be concluded that mode of assessment influences students' utilization of ICT integrated resources and lastly it is concluded that the attitude of M.Ed students has the greatest influences on the utilization of ICT integrated resources. The study recommended that the tutors be encouraged to better assess the unit and develop assessments that reflect the core ICT course objectives which will be of long-term benefit to master students on the use of utilization of ICT integrated resources. The study recommends a further study to be done in other universities to ascertain whether they had different and more effective strategies.

CHAPTER ONE

INTRODUCTION

1.1Background to the study

Since time immemorial, education has been an important instrument for social and economic transformation. Presently higher education in Kenya is experiencing a major transformation in terms of utilization, equity and quality. This transition is highly influenced by the swift developments in information and communication technologies all over the world. The introduction of ICTs in the higher education has profound implications for the whole education process especially in dealing with key issues of access, equity, management, efficiency, pedagogy and quality (Barker, 1999).ICT stand for information and communication technologies and are defined, for the purposes of this study, as a "diverse set of technological tools and resources used to deliver education more effectively and efficiently (Ongus, 2004). These resources include computers, the Internet, broadcasting technologies (radio and television), and telephone. Moreover, different technologies are typically used in combination rather than as the sole delivery mechanism.Teachers should integrate information communication technology resources to take advantage of this favorable environment in which students are digital natives.

Information and Communication Technology (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). The integration of ICT in teaching, linked to educational innovation processes has as one of its pillars the adequate training of teachers. Without teachers well-trained in technological competencies and without the necessary support for

incorporating technology into educational practice, the endowment of resources will not be useful (Phelps, Graham & Kerr, 2004). Much of our curricula and education systems are still products from a mechanistic past, in which predetermined knowledge was delivered in a linear format to a mass audience. The focus was on transferring information in a controlled sequence without accounting for the contextual settings of the different learners. The university needs to align its teaching and learning methods with best practices found both nationally and globally. Adopting the use of ICT within higher education seems inevitable as digital communication and information models become the preferred means of storing, accessing and disseminating information (Delandshere, 2002). Integrating ICT during regular classroom instruction, tutors demonstrate to the teacher trainees the innovative ways of teaching and learning (Steketee, 2006). As the basis of competition has shifted more and more to the creation and assimilation of knowledge, the role of the nations has grown. Competitive advantage is created and sustained through a highly localized process. 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 and Australia among other developed countries for the last two decades in higher education process (Punie, Law, & Kampylis, 2013). It is highly applied for distance education based on executing agencies, target students and goals to be achieved. Jones, Ramanau, Cross & Healing (2010) identified a range of minorities appearing within the generation

including a group of students who make very little use of ICT. A research, conducted by (Sun, 2008), shows that some students are anxious about the use of ICT, which affects their level of satisfaction in e-learning courses. This finding contradicts the conception of Net generation students as proficient ICT users. For university lecturers to carry out their job efficiently and effectively especially in this age of knowledge-based technology and globalization, the use of information and communication technology (ICT) becomes imperative. Universities all over the world are rapidly incorporating information and communication technology (ICT) into all facets of teaching, research and management. Teachers who succeed in making use of ICT in their work processes do not only contribute to improved learning outcomes in their students, but also benefit personally from enhanced work productivity (Carlson & Gadio, 2000). University lecturers have various tasks to accomplish and these range from teaching, research and publications, marking of tests and examinations, supervising students' research activities, supporting students through advisory roles, attending conferences, providing community services etc. In order for them to be effective and efficient, they need to acquire an appreciable level of ICT engagement. This is necessary in order to meet up with the demands of their job.

Assessment is crucial in Master of education programme. High-stakes assessments exemplify curriculum ambitions, define what is worth knowing, and drive classroom practices. It is essential to develop systems for assessment which reflect our core educational goals, and which reward students for developing skills and attributes which will be of long-term benefit to them and to society. There is good research evidence to show that well designed assessment systems both in theoretical and practical's lead to

improved master of education student performance. In the ICT domain in particular: Technology advocates describe a range of potential impacts that ICT can have when applied to education. These include: Student outcomes such as use of knowledge in the library, improved data analysis skills for research, typing and editing their own project and general improvement in students' attitude towards using ICT integrated resources (Magrass, 2005).

A study carried out by Heysung, (2004) on factors affecting the adoption of information technology by educators showed a significant relationship between the students' attitudes and their adoption of information technology. In other research related to internet and learning, it was found that the most important goal of the students use of internet is access to scarce information which is not found by other methods. Baradaran (2004) in his study revealed that the amount of internet use by students has a relatively positive effect on their research publications. Strong positive correlation existed between the level of computer use and learners' perceived expertise and attitude toward computers as tools. In that study it was suggested that owning a computer and having Internet access at home might have an impact on students' attitudes toward Internet use (Baradaran, 2004).African governments like Algeria, Chad and Rwanda to mention a few have focused on developing national ICT policies and National Information and Communication Infrastructure plans, to support their socio-economic development efforts and policies for ICT in education. Increasingly, investment in ICT is being seen by education institutions as a necessary part of establishing their competitive advantage,

because it is attractive to students and is also deemed essential by governments, parents, employers and funders of higher education (Agbonlahor, 2005).

In Kenya, teachers are not required – as a matter of policy – to instruct using the computer and its related technologies. However, one of the flagship projects for education and training in Kenya Vision 2030 is to establish a computer supply programme that will equip students with modern Information Technology (IT) skills (Republic of Kenya, 2007). The ministry of Information and Communication (2006) drew up an ICT policy document touching on different areas including education. According to the writer's conservative estimates, each public university in Kenya now has over 1000 PCs of various makes, types and capacities scattered over several campuses, in administrative offices, computer laboratories, in various faculties and/or departments. Many ICT resources are out of order for lack of management, control and maintenance and vital replacement parts. In a small number of cases, PCs are connected to form local area networks (LANs). The rest are a virtual collection of autonomous islands of technology isolated from other units although they structurally belong to, and should be used to support, the same organizations.

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 meets the changing learning, teaching, and research and management needs of the university. Currently almost all the services of the university from course registration to fee payment are online. 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)

1.2 Statement of the problem

Postgraduate 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. 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. However it has been suggested that this situation exists due to the fact that: online courses are still not available; the Extra Mural centers 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 influencing master of education student's utilization of ICT integrated resources school of education at the University of Nairobi.

1.3 Purpose of the study

The purpose of this study was to investigate factors influencingMaster of Education student's utilization of ICT integrated resources school of education, University of Nairobi, Kenya.

1.4 Objectives of the study

The study was guided by the following objectives:

(i) To establish the influence of availability of computers on utilization of ICT integrated resources by master of education students at the University of Nairobi.

(ii) To examine the influence of tutor's methodology on utilization of ICT integrated resources at the University of Nairobi

(iii) To determine the influence of the tutors' mode of assessment on utilization of ICT integrated resources at the University of Nairobi

(iv) To establish the influence of students' attitude on the utilization of ICT integrated resources at the University of Nairobi.

1.5 Research questions

Based on the above objectives, the following were the research questions:

(i) How does the availability of computers influence M.Ed students' utilization of ICT integrated resources?

(ii) How does the tutor's methodology influence the M.Ed student's utilization of ICT integrated resources?

(iii) How does the mode of assessment of ICT unit determine the M.Ed student's utilization of ICT?

(iv) How does M.Ed student's attitude influence the utilization of ICT integrated resources at UON?

1.6Significance of the study

This study seeks to provide an understanding of factors influencing M.Ed student's utilization of ICT integrated resources. Based on review of literature, this study is one of the first ones to investigate how ICT is implemented in the school of education, University of Nairobi. The results of this study therefore will give an insight in a number of areas; it will explain how availability of ICT integrated resources influence students utilization of ICT, the ways in which the attitude of the students affects their utilization of ICT and how the mode of assessment contributes to students' utilization of ICT. Finally, the study may raise issues and challenges leading to further research by other scholars interested in ICT utilization issues.

1.7Limitations of the study

According to Best and Kahn (2003) 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. The study was limited in the sense that some respondents did not understand some items on the questionnaire and found it technical. To counter this effect, the researcher employed triangulation. In this case, different instruments were used to maximize on information being sought, so, in addition to the questionnaires, observation schedule and an interview schedule were developed.

1.8 Delimitations of the study

This study was limited to the University of Nairobi, School of Education Kikuyu Campus. The target population of the study was confined to all the 234 master of education students in school of education, 3 ICT tutors, 2 computer lab technicians and four programme coordinators.

The study was delimited to the school of education, university of Nairobi. Generalizations to other universities should therefore be applied with caution because the factors influencing ICT integrated resources may vary from one school to another.

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 M.Ed students were well equipped with the knowledge of ICT integrated resources.

(ii) University M.Ed students sought information from all formats of e-learning materials for their academic research.

1.10 Definition of Significant Terms

The following are definitions of significant terms as used in the study.

Computer Application Skills refers to a practical knowledge, power and ability of using computers to get information such as Troubleshooting, Microsoft Access and Data analytics. In this context using Microsoft office to type and edit assignments and projects

ICT integrated resources refers to the infusion of technology as a tool to enhance the learning in a content area or multidisciplinary settings such as accessing e-library to search academic information

ICT integration refers to the use of technology toolsin general content areas in education in order to allow students to apply computer and technology skills to learning and problem-solving such as video conferencing, teleconference phones, and modems for academic purposes

Information Communication Technology refers to an umbrella term that includes any communication device or application, encompassing computer and network hardware and software satellite systems as well as the various services and applications associated with them such as video conferencing and distance learning such as personal computers, digital television and email

Mode of assessment refers to the collection of relevant information that may be relied on making judgments about the amount and adequacy of the learning that has taken place such as theoretical assessments and practical ones.

Student's attitude refers to student's tendency to respond positively or negatively towards utilization of ICT resources offered at the University of Nairobi

Tutors methodology refers to the general principles, pedagogy and management strategies used for the ICT unit in the master program.

1.11 Organization of the study

This study is organized into five chapters. Chapter one focused on introduction of the whole study giving background to the study, statement of the problem, objectives of the study, 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, concept of utilization of ICT integrated resources, availability of computers and utilization of ICT integrated resources, tutors methodology and utilization of ICT integrated resources and mode of assessment and utilization of ICT integrated resources, summary of literature review, theoretical framework and conceptual framework.

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

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter describes the related literature of the study titled factors influencing master of education student's utilization of ICT integrated resources. It comprises a detailed account of the following; introduction, concept of utilization of ICT integrated resources, availability of computers and utilization of ICT integrated resources, tutors engagement and utilization of ICT integrated resources and mode of assessment and utilization of ICT integrated resources. Finally there will be the summary of literature review, theoretical framework and conceptual framework.

2.2 Concept of utilization of ICT integrated resources in education

Information and Communications Technology (ICT) is a technology trend that has brought the world into a global village. It is a buzzword in media and telecommunications which has revolutionized the economy, business, industry, politics and education. ICT has permeated virtually all aspects of human endeavor (Ololube, 2009). It has crept into the educational system and has had obvious impact. In the curriculum ICT has been considered a priority in global education. Ololube (2006) and Nwana (2009), remarked that both the teachers and the students should achieve better curriculum outcomes with the use of ICT resources. As earlier pointed out, the main purpose of computer education was for computer literacy and skills needed in the 21st century classrooms and outside the classroom. It goes beyond reading books and pamphlets. It really requires skills, abilities and competencies in the use of computer. For

instance it requires digital literacy, hardware literacy, software literary; and computer packages integration and usage skills. Others are networking skills and multimedia systems literacy and skills. The need for availability and utilization of ICT resources in teaching –learning situations is on the increase. The government has made effort towards the building of ICT facilities and procurement of ICT resources for various schools and colleges.

Students need to learn how to integrate ICTs into their classroom activities and school structure. The quality of teachers is known in virtually all countries to be a key predictor of student learning (Ololube, 2005a; 2005b). Therefore, teacher training is crucial using ICTs, because ICTs are tools that on the one hand can facilitate teacher training and on the other hand help them to take full advantage of the potential of technology to enhance student learning (UNESCO, 2003). Correspondingly, ICTs have introduced a new era in traditional methods of teaching and offering new teaching and learning experiences to both teachers and students. Hence, UON should take advantage of this capability to provide easy access of information, since technologies enable the visualization of educational materials in an innovative and realistic manner.

A national ICT policy sets out a nation's aims, principles and strategies for delivery of information and communication technology. 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. 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).

2.3 Availability of computers on utilization of ICT integrated resources.

Integrating technology into curricula with the intent of positively influencing teaching and learning has been in a state of evolution over the past 20 years (Dias & Atkinson, 2001; Dockstader, 1999). Driven primarily by hardware and software evolution, accessibility to computers in educational settings, and popular instructional technology trends, technology integration has covered the continuum from instruction on programming skills, self-directed drill and practice, interactive learning software, online training, testing, instructional delivery augmentation, and Internet-based accessibility to information, communication, and publication (Dias & Atkinson, 2001). Technology integration is meant to be cross curricular rather than become a separate course or topic in itself. Hence, every classroom teacher should use learning technologies to enhance their student learning in every subject because it can engage the thinking, decision making, problem solving and reasoning behaviors of students (Grabe & Grabe, 2001). These are cognitive behaviors that learners need to learn in an information age.

In recent years, most of the schools are equipped with different kinds of technological infrastructure and electronic resources available. Research studies in the past decade

have shown that computer technology is an effective means for widening educational opportunities, but most teachers neither use technology as an instructional delivery system nor integrate technology into their curriculum. Studies reveal a number of factors influencing teachers' decisions to use ICT in the classroom: non-manipulative and manipulative school and teacher factors (Casal, 2007). These factors are interrelated. The success of the implementation of ICT is not dependent on the availability or absence of one individual factor, but is determined through a dynamic process involving a set of interrelated factors. It is suggested that ongoing professional development must be provided for teachers to model the new pedagogies and tools for learning with the aim of enhancing the teaching-learning process. However, it is important for teacher trainers and policy makers to understand the factors affecting effectiveness and cost-effectiveness of different approaches to ICT use in teacher training so training strategies can be appropriately explored to make such changes viable to all.

2.4 Tutors methodology and utilization of ICT integrated resource

A shift in the role of a tutor utilizing ICTs to that of a facilitator does not obviate the need for tutors to serve as leaders in the classroom; traditional tutor leadership skills and practices are still important (especially those related to lesson planning, preparation, and follow-up (Burniske 2001) The existence of ICTs does not transform tutor practices in and of itself. However, ICTs can enable tutors to transform their teaching practices, given a set of enabling conditions.

Tutors' methodological practices and reasoning influence their uses of ICT, and the nature of tutor ICT use impacts student achievement. Types of usage of ICTs correlate with tutor pedagogical philosophies. Tutors who use ICTs the most -- and the most effectively -- are less likely to use traditional 'transmission-method' pedagogies. Tutors who use more types of software tend to practice more "constructivist" pedagogies. (Peter Scrimshaw 2004). There appears to be a great disconnect between student knowledge and usage of ICTs the knowledge and abilities of teachers to use ICTs. This suggests that teacher inexperience and skill deficiencies may often be an important factor inhibiting the effectiveness of ICT use in education by students. (Kozma, 2003)

Tutors require additional motivation and incentives to participate actively in professional development activities. A variety of incentives can be used, including certification, professional advancement, pay increases, paid time off to participate in professional development, formal and informal recognition at the school and community levels and among peers. Traditional one-time teacher training workshops have not been seen as effective in helping teachers to feel comfortable using ICTs, let alone in integrating it successfully into their teaching. Discrete, 'one-off' training events are seen as less effective than on-going professional development activities (Scrimshaw, 2004). When teachers use their knowledge of both the subject and the way students understood the subject; their use of ICT has a more direct effect on student achievement. The most significant factor for continuing the development of teachers' ICT-related skills is for them to have regular access to functioning and relevant ICT equipment (Magrass, 2005).

In view of the importance of ICT for education, UNESCO conducted an extensive consultation to identify the competencies that teachers should develop to use technology effectively in the classroom. This work resulted in the UNESCO ICT-Competency Framework for Teachers (ICT-CFT), which was first published in 2008. The Framework is arranged in three different approaches to teaching (three successive stages of a teacher's development). The first is Technology Literacy, enabling students to use ICT in order to learn more efficiently. The second is Knowledge Deepening, enabling students to acquire in-depth knowledge of their school subjects and apply it to complex, real-world problems. The third is Knowledge Creation, enabling students, citizens and the workforce they become, to create the new knowledge required for more harmonious, fulfilling and prosperous societies UNESCO, (2011)

2.5 Mode of assessment and utilization of ICT integrated resources.

Digital devices are more and more present in the teaching process. Universities investing in ICT want to know what use is made of the equipment and installations. New tools of ICT appear every day on the market: Virtual Learning Environments (VLEs) interactive white boards, laptops, tablet computers, one to one computing, personal devices, etc. we know the benefits of computers in learning: autonomy, self- assessment, personalization of learning, diverse and remote accessibilities of contents, collaboration and sharing, continuity of monitoring, but we are not sure that an appropriate use is made of the equipments. It is currently impossible to accurately assess the gain provided by digital tools and measure their contribution to the improvement of student skills (Ololube, 2006)

Assessment is central to educational practice. High-stakes assessments exemplify curriculum ambitions, define what is worth knowing, and drive classroom practices. It is

essential to develop systems for assessment which reflect our core educational goals, and which reward students for developing skills and attributes which will be of long-term benefit to them and to society. There is good research evidence to show that well designed assessment systems both in theoretical and practical's lead to improved student performance. In the ICT domain in particular: Technology advocates describe a range of potential impacts that ICT can have when applied to education. These include: Student outcomes such as use of knowledge in the library, improved data analysis skills for research, typing and editing their own projects and general improvement in students' attitude towards using ICT integrated resources (Magrass, 2005).

2.6 Student's attitude and utilization of ICT integrated resources

Students' attitude towards computers is an important factor in influencing their acceptance of computers for their studies and use (Palaigeorgiou et al., 2005). Computer attitude can be defined as a person's positive or negative feeling towards computer related activities (Smith, Caputi & Rawstone, 2000). The intention to use or not to use the computer affects an individual's attitude toward the computer and has a great impact on the use of computers. Attitudes, skills and practice are interrelated variables, (Chen et al., 2006). A person's behavior can be determined by intentions (Fishbein & Ajzen, 1975), and an individual's attitude toward the computer has a great impact on his intentions to use or refuse to use computer.

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 students' 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 university libraries among majority of students. This means that most students did not visit the libraries to utilize the available e-journals. In other words very few students 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 theCongress 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 students 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.

2.8 Summary of literature review and research gap

From the literature reviewed, it is evident that the utilization of ICT integrated resources requires support, new skills and attitudes. The main obstacles associated with the level of ICT utilization are availability of ICT resources and the attitude of students. The main focus of the study is to investigate the factors influencing M.Ed student's utilization of ICT integrated resources in University of Nairobi. 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.

2.9Theoretical framework

This study adopted the Innovation Diffusion Theory by Carl Rogers. Rogers (2003) 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.

This theory suited this study because it explains why some individuals embrace technological change and adopt innovations more readily than others do. According to the theory of Rogers, there are four elements involved in the process of idea, practice, or object dissemination: a) it should be classified as innovation; b) it must be communicated through certain channels; c) it must be adopted among members within a social system; d) it must take into account duration or the time factor. 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). 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 employed the innovation diffusion theory and mainly focused 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 aimed at investigating students' preparedness in terms of attitudes and skills towards utilization of ICT integrated resources.

2.10 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).

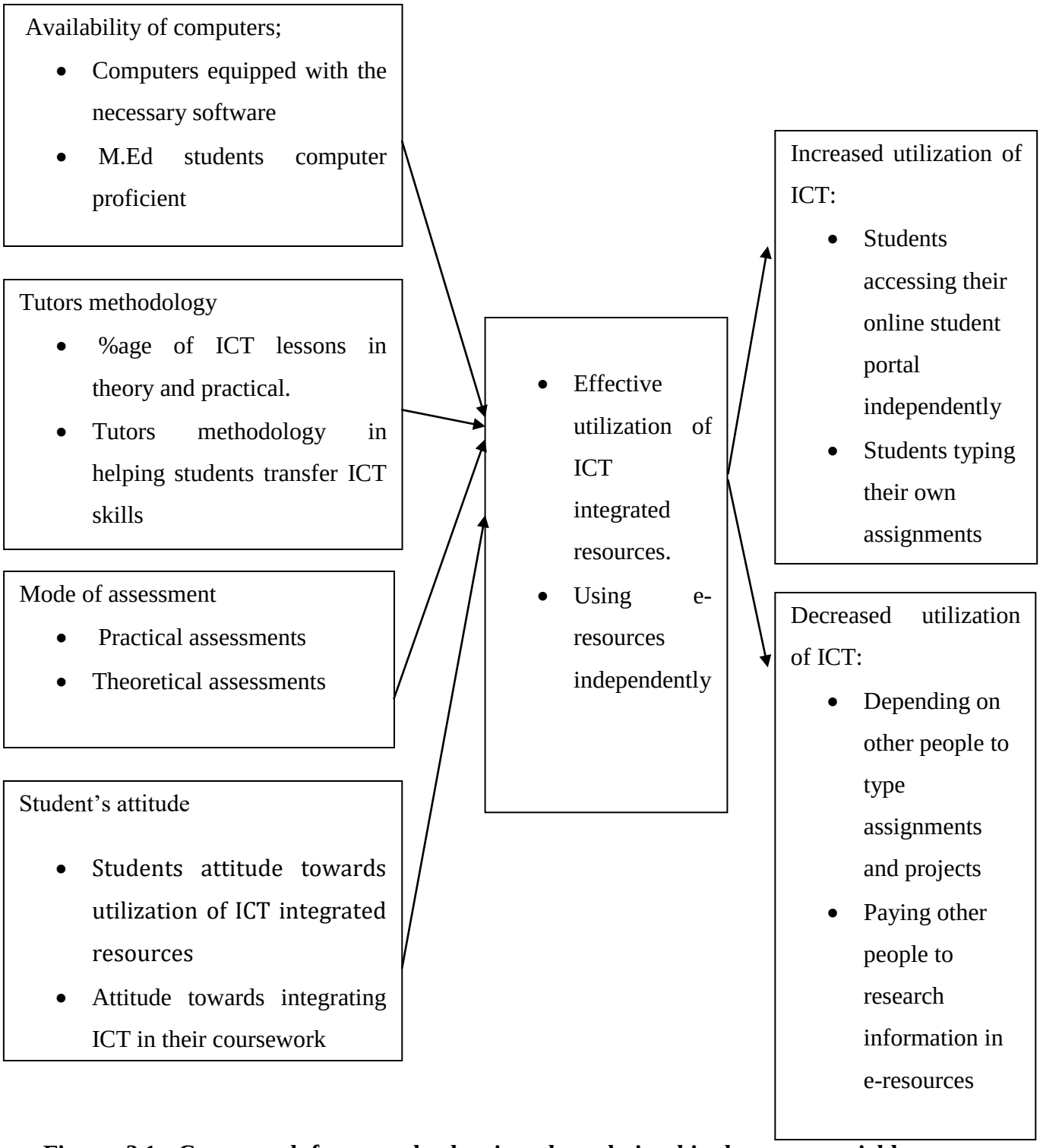

Figure 2.1: Conceptual framework showing the relationship between variables influencing student's utilization of ICT integrated resources.

The conceptual framework illustrates the four variables that influence master of education student's utilization of ICT integrated resources. They include Availability of computers, Tutors engagement, Mode of assessment and student's attitude. The process in the conceptual framework represents the effective utilization of ICT integrated resources and using e-resources independently while the outcome is either an increased utilization of ICT integrated resources or decreased.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methodology that was used during the study. It comprised 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 was conducted; it constitutes the blueprint for collection, measurement and analysis of data" (Kothari, 2004). The study adopted descriptive survey design. This method was appropriate for the study because of the large number of respondents and the nature of information it gathered. The study sought to investigate factors influencing M.Ed student's utilization of ICT integrated resources, University of Nairobi, Kenya.

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 two hundred thirty four (234) Master of Education students, three (3) ICT tutors, two (2) computer lab technicians and four program coordinators.

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 30 % of all the 234 master of education students was used, as for the 3 ICT tutors, the 2 computer lab technicians and 4 program coordinators was purposively sampled given the characteristics of their population and the objectives of the study.

Table 3.1: Target population and Sample size in the study (a trend of 5 years to 2018)

Category	Target Population	Sample	Percentage sample (%)
Students	234	90	30.0
ICT tutors	3	3	100.0
Lab technicians	2	2	100.0
Program coordinators	4	4	100.0
Total	**243**	**99**	

Source: (Dean of Education records office, 2018)

Table 3.1 shows the sample size and the population from which it was drawn. The sampled 90 from a target population of 230 students representing 30% of M.Ed students, the ICT tutors and lab technicians were 100 % selected.

3.5 Research Instruments

The study used questionnaires for master of education students, their ICT tutors and computer lab technicians, as an instrument for data collection. The study also conducted a checklist to inspect the computer labs in school of education Kikuyu campus and unstructured interview with the program coordinators. All the instruments were designed by the researcher. The questionnaires had both open and closed ended items. The aim behind including open-ended items in the questionnaires was to gather as much information as possible and give respondents space to articulate their responses. The questionnaires were self-administered. Each questionnaire was divided into parts; part A dealt with demographic information, part B solicited information on availability of computers and utilization of ICT integrated resources, part C asked about tutors methodology and utilization of ICT integrated resources and part D was mode of assessment and utilization of ICT integrated resources.

3.6 Validity of instruments

Kabiru and Njenga (2009) define validity as the extent to which a test measures what it is intended to measure. Validity of the instruments is paramount for the creditability of the results they will yield. Content validity of the instruments will be judged by the supervisors. Mugenda and Mugenda (2003), recommend the use of professionals or experts in the particular field to assess content validity of the instruments. Piloting of the questionnaires was done 5 % of the actual sample. Mugenda, and Mugenda (2003) recommend a piloting sample of 1 to 10 % of the actual sample. The results from the pilot were used to establish feasibility and assess whether the items on the questionnaires

convey the same meaning to all respondents and if they solicited the information they were intended to solicit.

3.7 Reliability of research instruments

Reliability, according to Fraenkel and Wallen (2001), is the level of internal consistency or stability over time, of a measuring instrument. Reliability analysis was done using Cronbach's Alpha, the most commonly used coefficient of internal consistency. This test was used for this study because; some of the questionnaires had open-ended questions that yielded more than one answer. According to Mugenda (2008) "this technique requires a single administration and it provides a unique, quantitative estimate of the internal consistency of a scale". Cronbach's Alpha coefficient test for internal consistency was computed using the following formula;

Alpha = Nr/ (1 + r (N- 1))

Where; r = is the mean inter- item correlation

N = number of items in the scale (Mugenda, 2008 p. 255)

A correlation value closer to 1.0 will imply that the instrument is reliable and hence suitable for use (Mugenda & Mugenda, 2007). The reliability index of M.Ed students' instrument was 0.79 while that for the teachers was 0.80. This established that the instruments were above 0.5 and closer to the correlation value of 1.0. The instruments were therefore considered reliable for use in collecting data for the main study.

3.8 Data collection procedures

The researcher obtained a research permission letter first from the Department and then from the National Commission for Science, Technology and Innovation (NACOSTI). Upon securing the research permission, the researcher presented it to the school of

Education and all the head of departments and embarked for data collection. The researcher followed up by making scheduled visits to the departments to collect data. On the agreed dates, the researcher administered the research instruments to the respondents after having explained the purpose of the study to them and collected after one week.

3.9 Data analysis techniques

After collecting data, the researcher checked through the returned questionnaires for errors such as spelling mistakes and black spaces. Data were then coded and entered into the Statistical Package for Social Sciences (SPSS) version 21. Descriptive statistics such as frequencies and %ages were used as well as inferential statistics such as Pearson's correlation to establish the factors influencing M.Ed student's utilization of ICT integrated resources. The data were presented in tabular form. Open-ended items were organized thematically and presented in a narrative form. In the analyses of Pearson correlation, p value of 0.05 was used as the cutoff for significance. If the p-value was less than 0.05, then a significant relationship was reported between the dependent and independent variable.

3.10 Ethical considerations

The importance of ethical considerations in social research cannot be overemphasized. According to Cohen et al (2007) this helps in protecting the integrity of the research process and the data obtained therein. The study was conducted under strict adherence to ethical guidelines governing social research. Questionnaires were self-administered and did not solicit personal information or identity. Confidentiality and anonymity was upheld. Respondents were asked not to reveal any personal information and that they are

free to stop if they feel distress or any other discomfort. Data collection procedure began by obtaining clearance from the department and applying for a research permit. The study also ensured that it was ethical in terms of acknowledging all cited sources.

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 master of education student's utilization of ICT integrated resources in their studies within the University of Nairobi. The findings have been presented with respect to each of the objectives of the study. Data analysis is both qualitative and quantitative. The main issues discussed include the following; the questionnaire return rate, demographic data of respondents and responses to the research objectives.

4.2 The Questionnaire return rate

Three sets of questionnaires were used to collect data for this study; one for M.Ed students, one for ICT tutors and one for lab technicians. Data obtained from these three sets of questionnaires were included in the data analysis. Response rate is presented in Table 4.1

Table 4.1 Questionnaire return rate

Categoryof respondents	**Sampled**	**Returned questionnaire**	**% return rate**
M.Ed students	90	70	78.0
ICT tutors	3	3	100.0
Lab technicians	2	2	100.0
Total	**95**	**75**	**93.0**

The questionnaires were administered in person to the students, tutors and lab technicians where 70 out of 90 M.Ed students returned the questionnaires which accounted to 78.0% and ICT tutors and lab technicians returned 100.0 % of the questionnaire. The average return rate was 93.0%. The response rate was adequate based on the recommendations of Mugenda and Mugenda, (2003) who suggest that a response rate at and over 70.0 % is adequate for analysis.

4.3 Demographic data of the respondents

The study sought to determine the background information of M.Ed students, ICT tutors and lab technicians. This background information of key respondents was imperative to confirm whether the research reached the targeted audience and whether or not the research captured the information it effectively sought. For the M.Ed students, gender, age and year of study were asked. The ICT tutors and lab technicians were asked to indicate their gender, age and level of professional training.

The M.Ed students were asked to indicate their gender. The findings are presented in Table 4.2.

Table 4.2 Distribution of M.Ed students by gender

Gender of students	**Frequency (f)**	**Percent (%)**
Male	37	52.9.
Female	33	47.1
Total	**70**	**100.0**

Table 4.2 shows that the male students were the majority followed by the female students. This is shown by (52.9%) of females and (47.1%) of the male gender. This indicates that gender parity has not quite been achieved.

The M.Ed students were also asked to indicate their age. The findings are presented in Table 4.3.

Table 4.3 Distribution of M.Ed students by age

Age bracket in years	**Frequency (f)**	**Percent (%)**
25-29	21	30.0
30-35	29	41.4
36-40	16	22.9
41-45	3	4.3
Above 45	1	1.4
Total	**70**	**100.0**

Table 4.3 indicates that majority of students are 30-35 years (41.0%) of the total population followed by 25-29 years age group (30.0%), third category was 36-40 years at (22.0%), fourth category was 41-45 years at (4.3%) and only 1.4% were 45yrs. This implies majority of the students come back for master degree at the age of 30-35 yrs.

The M.Ed students were also asked to indicate their academic year. The findings are presented in Table 4.4.

Table 4.4 Distribution of M.Ed students by academic year

Year of study	**Frequency (f)**	**Percent (%)**
First	45	64.3
Second	25	35.7
Total	**70**	**100.0**

Table 4.4 shows that majority (64.0 %) of the students was in their first year and (35.7%) were in their second year. ICT unit is taken in the first semester which means majority of the students had taken the unit and were in position to give feedback about how the study variables influence students utilization of ICT

The ICT tutors were asked to indicate their gender. The findings are presented in table 4.5.

Table 4.5 Distribution of ICT tutors by gender

Gender	Frequency (f)	Percent (%)
Male	3	100.0
Female	0	0.0

Table 4.5 shows that 100.0 % of ICT tutors in school of education are male. There is obviously gender disparity in this department.

The ICT tutors were also asked to indicate their professional training. The findings are presented in Table 4.6.

Table 4.6 Distribution of ICT tutors by professional training

Professional training	Frequency (f)	Percent (%)
Degree and PGDE	2	66.7
Master degree	1	33.3
Total	**3**	**100.0**

Table 4.6 shows that majority (66.7 %) of the ICT tutors has a degree in IT and a PGDE and 33.3% of them have a master degree in IT. This implies that selecting ICT tutors is given less attention. The data contradicts with the suggestions of Carlson & Gadio, 2000;

in order for tutors to be effective and efficient, they need to acquire an appreciable level of ICT proficiency. This is necessary in order to meet up with the demands of their job. The lab technicians were asked to indicate their years of service. The findings are presented in Table 4.7.

Table 4.7 Distribution of lab technicians by years of service

Years of service in years	Frequency	Percentage
1-5	1	50.0
6-10	1	50.0
Total	**2**	**100.0**

The study sought to establish how many years the lab technicians worked in school of education. The results show that (50%) of them worked between 1-5 and (50%) worked 6-10 years which is quite sufficient, in the sense that they accumulated years of experience in working in the lab.

A cross tabulation was run on availability of computer and knowledge of computer use according to students. The findings are presented in Table 4.8.

Table 4.8 A cross tabulation of availability of computer and background knowledge of computer use according to students

		Background knowledge of computer use				
Competent		**Excellent**	**Good**	**Average**	**poor**	**Total**
Access to	Yes	5	32	18	3	58
computer	No	0	2	9	1	12

Competent		Background knowledge of computer use				
		Excellent	**Good**	**Average**	**poor**	**Total**
Access to	Yes	5	32	18	3	58
computer	No	0	2	9	1	12
Total		**5**	**34**	**27**	**4**	**70**

The results of the cross tabulation shows the relationship between availability of computers and having knowledge of computer use. The table shows that majority (58.0) of the M.Ed students have access to computers. Looking at the last row, only 34 out of 70 of our respondents have good knowledge of computer use and 27 of them have average knowledge of computer use. This is a clear indicator that availability of computers does not imply that the students necessarily have competence in using computers.

The findings agree with Palaigeorgiou et al., (2005) who observed that the success of the implementation of ICT is not dependent on the availability or absence of computers but is determined through a dynamic process involving a set of interrelated factors. It is suggested that ongoing training must be provided for students.

4.4.1 Findings on the availability of computers and M.Ed students utilization of ICT integrated resources

The first objective of this study was to establish the influence of availability of computers on utilization of ICT integrated resources by master's students at the University of Nairobi, data was sought to provide information on availability of computers and utilization of ICT. To answer this question the researcher asked various questions such as availability of software in the university computer labs, whether students have enough

computers to use in the university computer labs and how long they have been using computers in years.

In order to establish the availability of computer to students in the University, the study asked students whether they have computer/ laptops to use at the University.

4.4.1 Availability of computers in the university computer labs according to students

The study sought to establish the availability of computers in the university labs. The findings are shown in fig 4.1

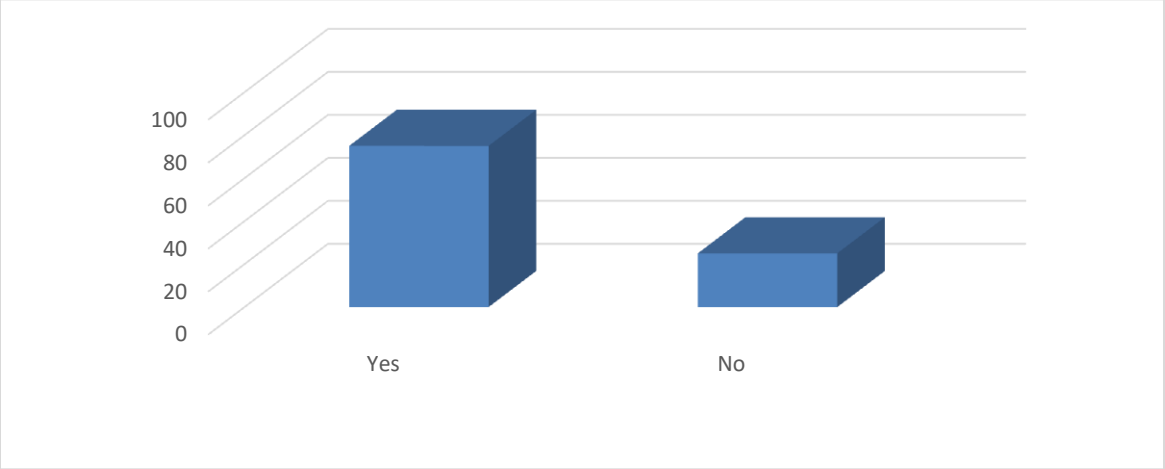

Fig 4.1 whether the computer lab is equipped with enough computers according to students

Figure 4.1 depicts the responses given by M.Ed students, most students accounting to (80.0%) indicated that they have access to computer while only (20.0%) are the ones who indicated they do not. This indicates that the university has done its job in equipping the computer labs with enough computers.

The study sought to establish how long students have been using computers in years. The findings are as shown in Figure 4.2

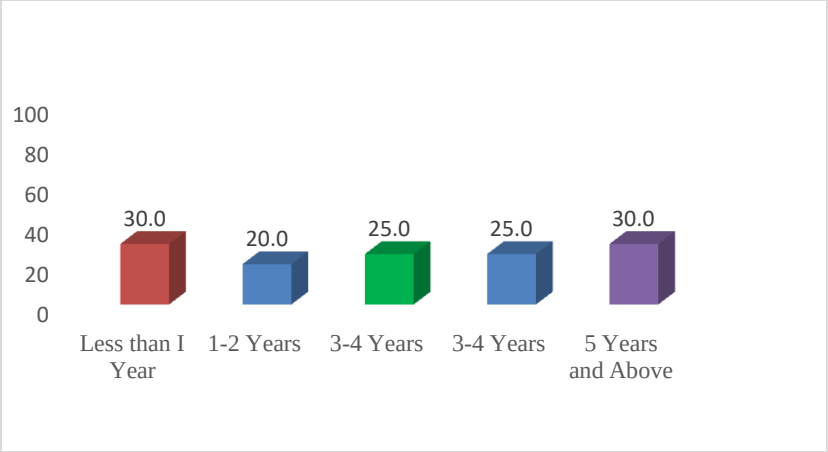

Figure 4.2 Experience of using computers

Figure 4.2 depicts the responses given by the M.Ed students, most students accounting to (30.0%) have been using computer for a period of 5 years and above, at the same percentage were those students who have been using ICT for less than a year. Followed by (25.0%) who said that they have been using computers for 3-4 years , on the lower side is those students who have been using it for 1-2 years. It implies that the (50.0 %) who had use computers far less than the 2 years would benefit from the ICT course while the other half would sharpen their skills.

In order to establish the level of exposure of students to ICT equipments the researcher sought information of the types of computer software's that the students use in the Universities. The findings are as indicated in Figure 4.9. This was done using a scale where the (1) Available, (2) is Not Available , (3) Not Sure.The findings are as tabulated in Table 4.9.

Table 4.9 Students' responses on availability of softwares

Software in computer labs	Available	Not Available	Not Sure
	%	%	%
Microsoft office	10.0	38.0	52.0
Adobe acrobat	15.0	28.0	57.0
Browsers	48.0	25.0	27.0
Skype	26.0	14.0	60.0
SPSS	22.0	21.0	57.0
n= 70,			

From Table 4.9 it was established that majority of the students (53.0%) were not sure whether the mentioned software were available or not. For instance the software "Microsoft office" (53.0%) of the students responded "not sure", followed by "adobe acrobat" at (47.0%). It means that most students do not give enough attention to what software are at their disposal or they are not using the computers in the lab.

In order to establish the level of exposure of students to computers, the researcher sought information from tutors of the types of computer software's that the students use in the Universities. This was done using a scale where the (1) Available, (2) is Not Available , (3) Not Sure.The findings are as tabulated in Table 4.10

Table 4.10 Availability of software in the university computer labs according to ICT tutors

Available softwares	Available	Not Available	Not Sure
	%	%	%
Microsoft office	15.0	55.0	30.0
Adobe acrobat	12.0	60.0	28.0
Browsers	60.0	25.0	15.0
Skype	16.0	54.0	30.0
SPSS	22.0	21.0	57.0

N=3

From Table 4.10 it was established that the response were similar to that of M.Ed students. For instance the software "SPSS" (57.0%) of the ICT tutors responded "not sure", followed by "Skype" at (30.0%). This indicates that crucial software like SPSS which students need to analyze their data are either not available or tutors are not sure if it is available. The study agrees with Dias & Atkinson, (2001) who suggested when driven primarily by hardware and software evolution, accessibility to computers in educational settings, and popular instructional technology trends, technology integration has covered the continuum from instruction on self-directed drill and practice, interactive learning software, online training, instructional delivery augmentation, and Internet-based accessibility to information and communication.

In order to establish the level of exposure of students to computer, the researcher sought to find out about the time in hours that students spend on computer practices in the lab.

Table 4.13 Time spent at the computer during lessons according to students

Time spent in the lab (hours)	Frequency (f)	Percentage (%)
1	15	21.4
2	49	70.0
more than 2	6	8.6
Total	**70**	**100.0**

The findings show that most of students indicated that they have accessed computers 2 hours a week as shown by (70.0%) of the respondents, which is followed by those who said they spend 1 hour only as indicated by (21.0%) of the respondents. This indicates that the hours students spent on practice per week are not sufficient.

The study agrees with Grabe & Grabe, (2001) they suggested Technology integration is meant to be cross curricular rather than become a separate course or topic in itself. Hence, every teacher should use learning technologies to enhance their student learning i because it can engage the thinking, decision making, problem solving and reasoning behaviors of students.

4.5 Findings on the influence of Tutor methodology on utilization of ICT integrated resources by master's students

The second objective of this study was to establish the influence of tutor's methodology on utilization of ICT integrated resources. The researcher analyzed the opinions of the

sampled tutors on tutor methodology and utilization of ICT integrated resources. This was done using a 5 level likert scale where (1) is Strongly Agree (2) Agree (3) Disagree and (4) Strongly Disagree. The findings are as shown in Table 4.11

Table 4.11 Coverage of ICT course content as explained by tutors

ICT integrated resources as explained by Tutors	SA	A	D	SD
It is nearly impossible to cover the course content in a span of one semester	55.0	10.0	25.0	15.0
The opening hours of the computer lab are not sufficient	56.0	28.0	10.0	6.0
Students have acquired basic computer application knowledge before starting the ICT unit	25.0	25.0	30.0	20.0
Students have acquired the necessary ICT skills they need from the ICT unit	30.0	46.0	7.0	17.0

n=3

The findings in Table 4.11 explain how the ICT course content is covered as explained by tutors. As shown (55.0 %) of the ICT tutors strongly agreed that it is impossible to cover the course content is a span of one semester, it means that the tutors do not complete the course content leaving vital information untouched. Further, (30.0 %) of the tutors disagreed that students have acquired basic computer application before starting the ICT unit, as much as the ICT course introduces master students to IT and its uses, it would have been helpful if students had acquired basic computer application skills beforehand.

The study concurs with Burniske, (2001) who suggested that a shift in the role of a tutor utilizing ICTs to that of a facilitator does not obviate the need for tutors to serve as leaders in the classroom; traditional tutor leadership skills and practices are still important (especially those related to lesson planning, preparation, and follow-up The existence of

ICTs does not transform tutor practices in and of itself. However, ICTs can enable tutors to transform their teaching practices.

The study sought to establish how ICT classes are delivered. How much of the unit is delivered in practical and how much is theoretical.

Table 4.12 Delivery of lessons in ICT unit according to students

Delivery method	Below 50%	50%	Above 50%
Practical	30.0	50.0	20.0
Lectures	30.0	15.0	55.0
Group work/Research	70.0	20.0	10.0
Presentations	69.0	27.0	4.0

n=70

Table 4.12 indicates that from the students perspective the tutor utilizes variety of methodology to aid students training for ICT, most common methodology as indicated by most students (55.0 %) was lecture method. ICT is a very hand on unit and it requires the practical method to be the primary one.

The study concurs with UNESCO, (2011) ICT competency framework for teachers, the framework discusses how new technologies in education implies new teacher roles, new pedagogies and new approaches to teacher education. The successful integration of ICT into the classroom will depend on the ability of teachers to structure the learning environment in new ways, to merge new technology with a new pedagogy, to develop

socially active classrooms, encouraging co-operative interaction, collaborative learning and group work. This requires a different set of classroom management skills. The teaching skills will include the ability to develop innovative ways of using technology to enhance the learning environment, and to encourage technology literacy, knowledge deepening and knowledge creation.

The study sought to find out the effectiveness of the course content to transfer the necessary skills; the categories were rated in terms of their significance to M. Ed student's utilization of ICT integrated resources. Strongly Agree =5, Agree=4, disagree=3. Strongly Disagree=2.

Table 4.12 Effectiveness of course content in enabling students transfer ICT skills according to students

Transferring these ICT skills	**SA**	**A**	**D**	**SD**
Typing and editing skills	5.0	12.0	45.0	38.0
Browsing different search engines for academic journals	10.0	4.0	42.0	44.0
Using PowerPoint for presentation	17.0	20.0	13.0	50.0
Accessing the student online portal to register their courses, check their fee status and all other features.	10.0	20.0	40.0	30.0
Analyzing data	12.0	6.0	40.0	42.0
Storing files and folders	9.0	10.0	30.0	54.0
The role of integrating ICT to their studies	10.0	10.0	50.0	30.0

n=70

Table 4.12 depicts the responses given by M.Ed students on how the ICT course helps them transfer the necessary skills. On the statement typing and editing skills, majority of students accounting to (45.0%) disagreed. Similarly on the statement to independently

access your student portal to access the features, (40.0%) of the students disagreed. As the data shows there appears to be a great disconnect between the actual ICT skills the students need and how the ICT unit is delivered. The study concurs with Scrimshaw, (2004) who suggested that tutors' methodological practices and reasoning influence their uses of ICT and the nature of tutor ICT use impacts students' achievement. Types of usage of ICTs correlate with tutor pedagogical philosophies. Tutors who use ICTs the most and the most effectively are less likely to use traditional 'transmission-method' pedagogies.

4.6 Findings on mode of assessment and utilization of ICT integrated resources by master's students

The third objective of this study was to establish the influence of mode of assessment on utilization of ICT integrated resources by master students at the University of Nairobi.

The research sought information on specific skills and abilities that are assessed in ICT unit. The findings were tabulated as shown in Table 4.15

Table 4.15 Mode of assessment and utilization of ICT integrated resources according to students

ICT unit assess the following	Yes	No	Not Sure
Accessing e-resources in the e-library	10.0	62.0	28.0
Accessing their student portal to register their courses and other features	15.0	55.0	30.0
Typing and editing their assignments	20.0	70.0	10.0
Analyzing their data	10.0	68.0	22.0

n=70

Table 4.15 indicates that most students indicated that ICT Units exams do not assess accessing e-resources in the e-library at (62.0 %) followed by accessing their student portal to register their courses at (55.0 %). The next statement shows that (70.0%) of the students said that ICT unit assessments do not asses their ability in Typing and editing their assignments. In the findings, it is clear that the assessment given to M.Ed students does not measure their ICT skills.

The findings concur with the observations of Ololube, (2006) who found it was essential to develop systems for assessment which reflect our core educational goals, and which reward students for developing skills and attributes which will be of long-term benefit to them and to society.

The research sought information on tutors opinion on assessment of ICT unit. The findings are as shown in Table 4.16

Table 4.16 Mode of assessment and utilization of ICT integrated resources according to ICT tutors

The ICT unit assess the following skills	**Yes**	**No**	**Not Sure**
Accessing e-resources in the e-library	9.0	63.0	28.0
Accessing their student portal to register their courses and other features	10.0	76.0	22.0
Typing and editing their assignments	10.0	40.0	50.0
Analyzing their data	22.0	20.0	58.0

n=70

The findings from the tutors were similar to that of students. Most tutors (63.0%) indicated that the ICT unit assessments do not assess accessing e-resources in the e-library followed by accessing their student portal to register their courses (76.0%).
In addition to the questionnaires the researcher used unstructured interview with the tutors and they gave some explanations like the course curriculum were given to them and they are not really part of the curriculum design. That their main job is to implement that curriculum, and for that reason the assessments are a reflection of the course content.

The researcher sought information on what type of assessments students prefer ;parctical, theoretical or mixed assessment as shown in Table 4.13.

Fig 4.6 Types of assessments students prefer.

Type of assessment	Frequency (f)	Percent (%)
Theoretical	6	20
Practical	15	30
Mixed	49	45
Total	**70**	**100.0**

The study found that most students prefer mixed mode of assessment for their examination as accounted for by (45.0%) of students, follwed by 30.0% who indicated that they prefer practical assessment and finally 20 % who indicated they prefer theoretical assessment. This indicates that students prefer when their assessments are a mix of theory and practical that way it will assess 360° of the unit.

The study agrees with Magrass, (2005) who suggested that well designed assessment systems both in theoretical and practical's lead to improved student performance. In the ICT domain in particular: Technology advocates describe a range of potential impacts that ICT can have when applied to education. These include: Student outcomes such as use of knowledge in the library, improved data analysis skills for research, typing and editing their own projects and general improvement in students' attitude towards using ICT integrated resources).

4.6.1 Findings on the attitude of Students and utilization of ICT integrated resources by master students

The objective of the study was to establish whether there is a significant relationship between the attitude of M.Ed students and their utilization of ICT integrated resources.

The first section will discuss the findings of M.Ed student's attitudes towards the utilization of ICT integrated resources in their studies.

The M.Ed student's questionnaire had several items to determine the attitudes of students towards utilization of ICT integrated resource. It was developed using a Likert scale for each item as follows: Strongly Agree = 5, Agree = 4, Undecided = 3, Disagree = 2 and strongly disagree. Given the least score of (1) and the most favorable or the positive attitude is given the highest score of (5). The M.Ed student's instrument consisted of 8 statements related to their attitude towards the utilization of ICT integrated resources.

The score values were:

8 x 5 = 40 most favorable response possible (Positive attitude)

8 x 3 = 24 a neutral attitude

8 x 1 = 8 most unfavorable attitude (Negative attitude)

The scores for the M.Ed students fall between 40 and 8. If a score was above 24 the student was said to have a positive attitude towards the utilization of ICT integrated resources, a score below 24 meant a negative attitude towards its utilization and a score of exactly 24 was suggestive of a neutral attitude. These findings are presented in Table 4.16.

The study sought information about the attitude of students towards utilizaiton of ICT integrated resources to their studies.The findings are as shown in Table 4.16

Table 4.16 Student's attitude and utilization of ICT integrated resources according to students

Student Attitudes	Frequency	%
Negative <8	48	15.0
Neutral 24	22	25.0
Positive >40	10	60.0
Total	**70**	**100.0**

The table 4.16 indicates that majority of students (60.0%) had a positive attitude towards student's attitude and utilization of ICT, 25.0% neutral while only 15.0% had a negative attitude towards implementation of ICT integrated resources at the University of Nairobi. The findings agree with Palaigeorgiou et al. (2005) who observed Students' attitude towards computers is an important factor in influencing their acceptance of computers for their studies and use. The intention to use or not to use the computer affects an individual's attitude towards the computer has a great impact on the use of computers. Attitudes, skills and practice are interrelated variables.

The study sought information about the attitude of students towards utilizaiton of ICT integrated resources to their studies according to ICT tutors.The findings are as shown in Table 4.17

Table 4.17Attitude of students according to ICT tutors

Student Attitudes	Frequency	%
Positive >40	0	0.0
Neutral 24	2	75.0
Negative <8	1	25.0
Total	**3**	**100**

The table 4.17 indicates that (75.0%) of the ICT tutors had a neutral attitude towards student's attitude and utilization of ICT integrated resources, while 25.0% negative.

The researcher found this quite alarming, for tutors to pass knowledge, skills and attitude to their students they should, to begin with have a positive attitude towards what the students can achieve, that is their abilities and performance.

The study concurs with the Congress of the United States' Office of Technology Assessment, (1997) one of the explanations responsible for the situation could be according to the general acceptance and use of a new technology usually lags considerably behind its availability. The traditional practice of using print journals may still be with the students hence, low utilization of scholarly electronic publications.

4.6.5 Attitude of students and utilization of ICT integrated resources according to lab technicians

The study sought information about the attitude of students towards utilizaiton of ICT integrated resources to their studies according to lab technicians.The findings are as shown in Table 4.18

Table 4.18 Attitude of students according to lab technicians

Student Attitudes	Frequency	%
Positive >40	0	0.0
Neutral 24	1	50.0
Negative <8	1	50.0
Total	**2**	**100**

The table 4.18 indicates that (50%) of the lab technicians had a neutral attitude towards student's attitude and utilization of ICT integrated resources, while (50.0%) had a negative attitude. The study indicates that the attitude of the lab technicians in the computer lab towards students ICT utilization is not a positive one. The study concurs with a study done at Turku University in Finland on 'The effect of ICT on School' Ilomaki, (2008) that found that students are capable and motivated users of new technologies as long as the environment is conducive.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter provides the summary of findings, gives the conclusions, recommendations of the study and suggestions for further studies based on the objectives of the study.

5.2 Summary of Study

The purpose of this study was to investigate factors influencing Master of Education student's utilization of ICT integrated resources at the University of Nairobi. The study sought to address the following research objectives; to establish the influence of availability of computers on utilization of ICT integrated resources by master's students, to examine the influence of tutor's methodology on utilization of ICT integrated resources, to determine the influence of the mode of assessment on utilization of ICT integrated resources by master students and to establish the influence of students attitude on the use of ICT integrated resources. The study adopted the innovation diffusion theory (Carol Rogers 2003). It explains why some individuals embrace technological change and adopt innovations more readily than others do.

The study adopted descriptive survey design. The total population of this study was all the two hundred thirty four Master of Education students, three ICT tutors and two lab technicians .A sample of 30 % of 234 students was used, as for the ICT tutors and the computer lab technicians they were purposively sampled. The study employed three sets of questionnaires to gather data; one for M.Ed students, one for ICT tutors, one for lab technician and a key informant interview with the program coordinators. Questionnaires

were used for data collection for M.Ed students, ICT tutors and lab technicians. All three questionnaires had open and closed-ended items. Both inferential and descriptive statistics were used for the analysis of data and results presented in tabular and narrative forms.

Reliability analysis was done using Cronbach's Alpha, this test was used for this study because; some of the questionnaires had open-ended questions that yielded more than one answer. The score for M.Ed students' instrument was 0.79 while that for the teachers was 0.80. This established that the instruments were above 0.5 and closer to the correlation value of 1.0. The instruments were therefore considered reliable for use in collecting data for the main study.

5.3 Summary of the Findings

The summary has been arranged thematically according to the research objectives.

5.3.1 Availability of computers in the university computer labs according to students

In order to establish the availability of computer to students and their knowledge in computer use, the study run a cross tabulation students, tutors and lab technicians. The results of the cross tabulation shows the relationship between availability of computers and having knowledge of computer use. Majority (58) of our respondents have access to computers, of the 58 only 14 of them have good knowledge of computer use and 27 of them have average knowledge of computer use and 17 said they have poor knowledge in computer. This is indicates that availability of computers does not affect utilization of ICT. The study sought to establish how long students has been using computers and found out that most students accounting to 30.0% have been using computer and ICT for a period of 5 years, followed by 25.0% who said that they have been using computer and

ICT for 3-4 years , on the lower side is those students who have been using ICT for less than year.

During the interviews conducted with the program coordinators, they made the following suggestions:

- The unit should be allocated at least two semesters
- The course content should be reflecting the necessary ICT skills that M.Ed student need
- The ICT unit should be delivered more practical than theoretical

5.3.2 Tutor methodology on utilization of ICT integrated resources by master's students

In order to find out the type of methodology the tutors use the researcher sought to find out the effectiveness of the course content in enabling students transfer skills. The first statement was "typing and editing skills", (45 %) of students said somewhat effective and (30%) of the students responded not effective at all. On the "accessing the student online portal to register their courses, check their fee status and all other features" statement (28%) of the students responded somewhat effective. This indicates that the tutor's methodology does not cover the areas that can help students learn the necessary skills.

From the findings it was found that from students perspective the tutors utilizes variety of methodology to deliver the ICT unit, most common methodology as indicated by most students was lecture method, at (70 %) followed by practical method and the least methodology were found to be group work/ research and presentation at 20% and 10% respectively . In order to establish how much time students spend on computer practice sessions per lesson the researcher sought information on time in hours that students spend

on computer practice in the computer lab. The study found that most of students indicated that they have accessed 1 hour a week as shown by 60.0% of the respondents, which is followed by those indicating 2 hours only as indicated by 40.0% of the respondents.

5.3.3 Mode of assessment and utilization of ICT integrated resources by master's students

The research sought information whether students prefer parctical assessements over theoretical or mixed assessments.The study found that most students prefers mixed assessment method for their examination as accounted for by 45.0% of students which is follwed by 30.0% who indicated that they prefer practical assessment and finally 20.05 indicating they prefer theoretical assessment ,The study found that most students indicated that they have not covered all ICT units within a span of a semester as indicated by 80.0% of students followed by 20.0% of the students,The research sought information from lab technicians on whether students get enough practicals in their ICT Class and this shows that Lab technicians indicated that students does not get enough time to perform practical's in the laboratory as indicated by 80.0% of the respondents.

5.3.4 Students attitude on the use of ICT integrated resources at the University of Nairobi.

The findings indicate that majority of students (60.0%) had a positive attitude towards utilization of ICT; while 25.0% neutral while only 15.0% had a negative attitude towards implementation of ICT integrated resources at the University of Nairobi.

For the ICT tutors, the study found that 75.0% had a neutral attitude and 25.0% negative towards students ICT utilization. The researcher found this quite alarming, for tutors to pass knowledge, skills and attitude to their students they should, to begin with, have a

positive attitude towards what the students can achieve, that is their abilities and performance.

5.4 Conclusion

From the findings, it can be concluded that the that availability of computers does not influence ICT utilization, 80% of the students said they have access to computers and when they were asked about their computer proficient, fast majority of them at (60%) they responded average proficient while (20%) said they are poor in computer usage.

It can be concluded that the tutors methodology influences ICT utilization from the findings most common methodology as indicated by most students was lecture method, ICT unit is a very hand on unit and it requires the practical method to be the primary one.

It can be concluded that mode of assessment influences students utilization of ICT integrated resources. The study found that the way the ICT unit is examined is not effective at all in assessing the necessary skills. Student agreed that had the unit been assessed better it would have contributed to increased ICT integration to studies. It can be concluded that the attitude of M.Ed. students influences the use of utilization of ICT integrated resources. The more a student has a positive attitude towards integrating ICT to studies the more he/she utilizes ICT.

The researcher conducted key informant interview with the program coordinators of the different departments in school of education

5.5 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 are suggested. It is evident that the availability of computers does not influence ICT utilization, the tutor's methodology influences ICT utilization, the mode of assessment influences students utilization of ICT integrated resources and the attitude of M.Ed. students influences the use of utilization of ICT integrated resources; therefore the researcher recommends the following in boosting students utilization of ICT integrated resources to studies:

- It is recommended that the university put strategies in place to encourage master students to spend more time in practicing ICT skills in the computer labs because more practice in these skills is deemed to be effective.
- It is recommended that the tutors be encouraged to make the ICT unit as practical as possible with very little theory since the unit is very hands on. This can be done by the university organizing seminars for tutors to enlighten them on how best to deliver ICT unit
- It is recommended that the tutors be encouraged to better assess the unit and develop assessments that reflect the core course objectives which will be of long-term benefit to master students
- Master students responded the attitude questions positively and showed eagerness in utilizing ICT integrated resources, it is recommended that student's morale be boosted and encouraged to put their thoughts to work. This can be done by lecturers holding meetings with students to strengthen their attitude towards ICT.

5.6 Suggestions for Further Research

The researcher recommends the following areas need further research:

i. This study was conducted in the University of Nairobi, school of education. It would be advisable for a comparable study to be done in other universities to ascertain whether they had different more effective strategies.

ii. The study was based at Master level students. There should be a comparable study to find out the students utilization of ICT integrated resources at undergraduate level. This would help ICT tutors and program coordinators to provide hands-on ICT content for students.

iii. This study only established that the ICT tutors and lab technicians had a negative attitude towards the students' utilization of ICT integrated resources. An in depth qualitative study should therefore be carried out to find out the factors that are contributing to this.

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APPENDIX A: LETTER OF INTRODUCTION

Saynab Dahir Abdi

P.0 Box 30197-00100

NAIROBI.

Dear Sir/Madam.

RE: PERMISSION TO CARRY OUT RESEARCH

I am a student at the University of Nairobi pursuing a Master of Education degree in Curriculum Studies. I am carrying out a research entitled **"Factorsinfluencing master of education students' utilization of ICT integrated resources; a case of University of Nairobi**"

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.

Yours faithfully,

Saynab Dahir Abdi

APPENDIX B: QUESTIONNAIRE FOR M.Ed STUDENTS

This questionnaire aims at getting your opinion on master of education student's utilization of ICT integrated resources in their studies. You do not have to write your name 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.

Part A: Demographic information

1. What is your gender? a. Male [ ] b. Female [ ]
2. Indicate your age category? a. 25-29 [ ] b. 30-35 [ ] c. 36-40 [ ] d. 41-45 [ ] e. Above 45 [ ]
3. Which academic year are you in? a. I year [ ] b. II year [ ]
4. Which semester do you take Education Management Information System (ICT) unit? a. Semester 1 [ ] b. semester 2 [ ] c. semester 3 [ ]

Part B: Availability of computers and utilization of ICT integrated resources

5) Do you have a personal computer/ laptop? a) Yes [ ] b) No [ ]

i) If yes in 5 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 [ ]

6. Rate your background knowledge of computer use?

a. Excellent [ ] b. Good [ ] c. Average [ ] d. Poor [ ]

8. Are computers easily available in the computer labs at the university? a. Yes [ ] b. No [ ]

Available software in the university computer lab	**Available**	**Not available**	**Not aware**
I. Microsoft Office			

II.	Adobe Acrobat			
III.	Browsers			
IV.	Skype			
V.	SPSS			
VI.	Others			

9. Does the university expect you to acquire the above listed software by yourself?

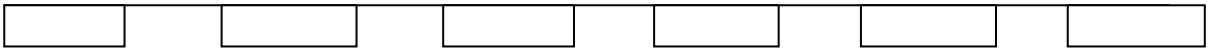
a. Yes [ ] b. No [ ] c. some of them [ ]

Indicate whether you agree with the following statements or not:	**Strongly agree**	**Agree**	**Strongly disagree**	**Disagree**
I. There are time restrictions in using the computers at the university				
II. Students queue to use computers				
III. Computers are not easily available in the computer labs at the university				
IV. You have attended computer classes to familiarize yourself on computer application				
V. Not all computers in the lab are functioning				

10. Please rate your ability in using the internet to search academic information. Tick the one that applies to you: a. Very good [ ] b. Good [ ] c. Fairly good [ ] d. Poor [ ]

11. How often do you use computers in the lab or your own laptop for study/research purposes? Use the scale below to show the frequency. The number 5 means very often while 0 means never.

a. 0 b. 1 c. 2 d. 3 e. 4 f. 5



12. Do the technicians in the computer lab assist you when you need help? Please tick the one that applies to you

Always [ ] b. Usually [ ] c. Sometimes [ ] d. Rarely [ ]

Part C Tutors methodology and utilization of ICT integrated resources.

13. Whether tutors use different methodology in training ICT? Yes or No…If yes

%age of your lessons in ICT unit are	**Below 50 %**	**50 %**	**Above 50 %**
I. Practical			
II. Lectures			
III. Group work/ research			
IV. Presentation			

14. How much time did you spend on computer practice sessions per lesson in your ICT unit: a. 1 hour [ ] b. 2 hours [ ] c. more than 2 hours

How effective was the tutors teaching methodology in helping you transfer these skills:	**Very effective**	**Effective**	**Somewhat effective**	**Not effective**	**Not decided**
I. Typing skills					
II. Browsing different academic journals					
III. Using PowerPoint for your presentations					
IV. Storing files and folders					
V. Formatting and editing your work					
VI. Accessing your student portal to register your courses, track your academic records and fee status.					

15. In your opinion how effective is the tutors methodology in delivering ICT unit: Very effective [ ] b. Effective [ ] c. Somewhat effective [ ] d. Not effective [ ] f. Not decided [ ]

I. Does the ICT unit exams assess your	Yes	No	Not

	ability in:			sure
II.	Your ability in accessing e-resources such as academic journals			
III.	Typing your assignments			
IV.	Analyzing your data			
V.	Accessing your online student portal			

Part D Mode of assessment and utilization of ICT integrated resources

16. Whether a tutor uses different modes of assessment to train ICT? Yes or No…..If Yes

17. In your opinion how effective is the way the ICT unit is examined?

Very effective [ ] b. effective [ ] c. somewhat effective [ ] d. not effective at all [ ]

18. Do you prefer practical assessments over theoretical assessments or mixed?

a. practical [ ] b. theoretical [ ] c. Mixed [ ]

19. Have you covered all the ICT course content in the spam of one semester? a. Yes [ ] b. No [ ]

20. Part E Attitude of students and utilization of ICT integrated resources

Statement		**Strongly agree**	**Agree**	**Disagree**	**Strongly disagree**
I.	The integration of ICT to my studies has helped me to carry out my assignments				
II.	The training we were given in how				

	to access e-library wasn't enough				
III.	Using the e-library is a very effective mode of searching information for my assignments				
IV.	It is not easy to catch up with the vast growing technology				
V.	Using ICT to integrate studies is not easy for everyone				
VI.	My knowledge in ICT has helped me access a lot of online academic information				
VII.	I greatly doubt the credibility of the online academic information				
VIII.	Having ICT knowledge helps me access my online student portal to register my courses, track my academic record and my fee status				

21. Can you suggest 3 ways to improve the ICT integration to studies in school of education?

- ……
- ……....
- ……

Thank you for your cooperation

APPENDIX C: QUESTIONNAIRE FOR ICT TUTORS

This questionnaire aims at getting your opinion on master of education student's utilization of ICT integrated resources in their studies. 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.

1. What is your gender? a. Male [ ] b. Female [ ]
2. In what category does your age fall?

25-29 [ ] b. 30-35 [ ] c. 36-40 [ ] d. 41-45 [ ] e. Above 45 [ ]

3. Level of professional training

Master [ ] b. Degree and PGDE [ ] c. Degree [ ] d. Diploma [ ]

4. What is the level of your ICT training?

Certificate Proficiency packages [ ] b. Diploma in ICT [ ]

Availability of computers and utilization of ICT integrated resources

5. Does the availability of computers affect M.Ed student's use of ICT? a. Yes [ ] b.No [ ]
6. Rate your student's background knowledge of computer use?

Excellent [ ] b. Good [ ] c. Average [ ] d. Poor [ ]

7. Are computers easily available for master students to access?

a. Yes [ ] b. No [ ]

8.

Availability of software in the university computer labs	**Available**	**Not available**	**Not sure**
I. Microsoft office			
II. Adobe acrobat			
III. Browsers			
IV. Skype			
V. SPSS			
VI. Others			

9. Does the university expect students to acquire the above software themselves?

a. Yes [ ] b. No [ ] c. some of them

Indicate whether you agree with the following statements or not:	**Strongly agree**	**Agree**	**Disagree**	**Strongly disagree**
I. To cover all the course content in the spam of one semester was nearly impossible				
II. The opening hours of the computer lab are not sufficient for students				
III. Students have acquired basic computer application knowledge				

before starting the ICT unit				
IV. Students have acquired the necessary ICT skills they need from the ICT unit				

10. Please rate your student's ability in using the internet for study/research purposes. Tick the one that applies: a. b. Very good [ ] c. Good [ ] d. Fairly [ ] e. good [ ] f. Poor [ ]

Tutors methodology and utilization of ICT integrated resources.

%age of your lessons in ICT unit are :	**Below 50 %**	**50 %**	**Above 50 %**
I. Practical			
II. Lectures			
III. Group work/Research			
IV. Presentations			

11. How much time do students spend on computer practice sessions per lesson:1 hour [ ] b. 2 hours [ ] c. more than 2 hours

How effective is the course content in enabling students transfer these skills:	**Very effective**	**Effective**	**Somewhat effective**	**Not effective**	**Not decided**
I. Typing and editing skills					
II. Browsing different search engines for academic journals					
III. Using PowerPoint for presentation					
IV. Accessing the student online portal to register their courses, check their fee status and all other features.					
V. Analyzing data					
VI. Storing files and folders					
VII. The role of integrating ICT to their studies					

Mode of assessment and utilization of ICT integrated resources

12.

I. Does the ICT unit exams assess students ability in:	Yes	No	Not sure
II. Accessing e-resources in the e-library			
III. Accessing their student portalto register their courses and other features			
IV. Typing and editing their assignments			

V. Analyzing their data			

Student's attitude and utilization of ICT integrated resources

Indicate whether you agree with the following statements or not:	**Strongly agree**	**Agree**	**Disagree**	**Strongly disagree**
I. Integrating ICT to their studies helps students carry out their assignments/projects				
II. The IT training students receive in how to access e-library is not sufficient				
III. Students understand how resourceful the e-library is.				
IV. Students understand that the e-library is a very effective mode of searching information				
V. Some students are unable to adjust to the vast growing technology				
VI. Some students feel integrating ICT to their studies is not for them				
VII. Students are able to access their online student portal independently				
VIII. Some students doubt the credibility of the online academic information				

13. Can you suggest 3 ways to improve the ICT integration to studies in school of education?

- ……
- ……
- ……

Thank you for your cooperation

APPENDIX D: QUESTIONNAIRE FOR LAB TECHNICIANS

1. What is your gender? a. Male ( ) b. Female ( )
2. What is your highest academic qualification?

Diploma ( ) b. Bachelor ( ) c. Master ( ) d. PhD ( )

3. For how long have you been a lab technician in school of education, kikuyu campus? A. 1-5 years ( ) b. 6-10 years ( ) c. above 10 years ( )
4. Please rate the following categories in terms of their significance to M. Ed student's utilization of ICT integrated resources. A. Very significant=5 b. Significant=4 c. fairly significant=3 d. insignificant=2 e. Not applicable=1

Availability of computers and utilization of ICT integrated resources

5.

Indicate whether you agree with the following statements or not:	**Very often**	**Often**	**Sometimes**	**Rarely**	**Not applicable**
I. Frequency of master students visiting the computer lab					
II. Master students specifically browsing academic journals instead of Google search					
III. Master students asking for assistance					

for basic computer applications					

6. Please rate the following categories in terms of their significance to M. Ed student's utilization of ICT integrated resources. Strongly agree =5, agree=4, disagree=3, strongly disagree=2, not applicable=1

Indicate whether you agree with the following statements or not:	**Strongly agree**	**Agree**	**Disagree**	**Strongly disagree**	**Not applicable**
I. Students prefer paper books over accessing e-resources					
II. Students are aware that there is scarce information online that is hardly found in the library					
III. Some students visit the computer lab to access non-academic stuff like Facebook and YouTube					

Tutors methodology and utilization of ICT integrated resources.

7. What pre-class arrangements do you do for ICT tutors?

……

……

8. Do students get enough practical's in their ICT class? a. Yes [ ] b. No [ ]
9. How many hours do ICT students spend in the computer lab a week?

2-3 hours b. 4-5 hours c. more than 5 hours

Attitude of students and utilization of ICT integrated resources

Indicate whether you agree with the following statements or not:	**Strongly agree**	**Agree**	**Disagree**	**Strongly disagree**
I. Integrating ICT to studies helps students carry out their assignments				
II. Some students feel that they do not receive enough training in how to access the e-library				
III. Some students browse non academic stuff instead of using the e-library for academic purposes				
IV. Students understand that the e-library				

	is a very effective mode of searching information				
V.	Some students are unable to adjust to the vast growing technology				
VI.	Some students feel integrating ICT to their studies is not for them				
VII.	Students are able to access their online student portal independently				
VIII.	Some students doubt the credibility of the online academic information				

Thank you for your cooperation

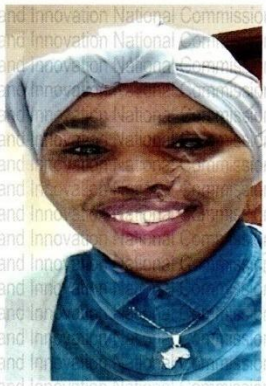
APPENDIX E: OBSERVATION CHECKLIST FOR COMPUTER LABS

Available items in the computer lab		**Yes**	**No**
I.	Are the available computers enough for students?		
II.	Are all the computers functioning?		
III.	Are the computers in the lab well maintained?		
IV.	Are the computers antivirus protected?		
V.	Are the computers equipped with all the software packages necessary for students such Ms Word and SPSS?		
VI.	Are computer labs technicians present all the time?		
VII.	Do computers have proper internet connection?		
VIII.	Do students browse academic journals or just mere Google search?		

APPENDIX F: RESEARCH PERMIT

THIS IS TO CERTIFY THAT:
MS. SAYNAB DAHIR ABDI
of UNIVERSITY OF NAIROBI, 0-100
Nairobi,has been permitted to conduct
research in *Kiambu County*

Permit No : NACOSTI/P/18/65840/23522
Date Of Issue : 24th July,2018
Fee Recieved :Ksh 2000



on the topic: *FACTORS INFLUENCING MASTERS OF EDUCATION STUDENTS' UTILIZATION OF ICT INTEGRATED RESOURCES IN THEIR STUDIES: A CASE OF SCHOOL OF EDUCATION, UNIVERSITY OF NAIROBI, KENYA*

for the period ending:
24th July,2019

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

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