FACTORS INFLUENCING USE OF COMPUTERS IN ACCESSING INFORMATION BY DISTANCE LEARNERS: A CASE OF BACHELOR OF EDUCAITON (ARTS) STUDENTS OF THE UNIVERSITY OF NAIROBI.

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DECLARATION

The research project is my original work and has not been presented in any university or any other institution of higher learning for any award.

..... Date 10th Aug 2012

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This research project report has been submitted for examination with my approval as the University Supervisor

..... Date 10th August 2012

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DEDICATION

This research project is dedicated to my loving husband Eddie, daughter Evangeline, Sons Oliver and Lewis.

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ABBREVIATION AND ACRONYMS

ARPANET-	Advanced Research Projects Administration Networks
C.C.K-	Communication Commission of Kenya
CD-ROM-	Compact Disk Read Only Memory
D.E-	Distance Education
D.E.S-	Distance Education Studies
E-mail-	Electronic Mail
HTTP-	Hypertext Transfer Protocol
I.A.T-	Institute of Advance Technology
IBM-	International Business Machines
I.C.T-	Information Communication and Technology
I.S.D.N-	Integrated Services Digital Network
K.C.P.E.-	Kenya Certificate of Primary Education
L.A.N-	Local Area Network
MKU-	Mount Kenya University
N.R.E.N-	National Research and Education Network
P.D.A`.s-	Personal Digital Assistant
U.O.N-	University of Nairobi
w.w.w-	World Wide Web.

ABSTRACT

Use of computers in accessing information is crucial to continued scientific advancement and to technological progress (Hughes,1994). Information accessibility today through use of computer application skills is unprecedented (Kochmer,1995). It is not exaggeration to suggest that majority of the people(students, teachers, lectures, researchers, journalists and others) who are hungry for information, are turning to computers, almost pushing the traditional sources (books, magazines, journalist, libraries)to the periphery (Ely,1995). This study sought to establish the factors influencing use of computers in accessing information by distant learners. This research was guided by the following objectives: to establish the influence of learners' level of knowledge, experience in computer application skills, attitudes towards computer application skills- on accessibility of information. Literature reviewed showed a disparity between the expected levels of access to information by distant learners and what really the case on the ground was. Purposeful sampling method was used to get the sample of the study. Data was collected using questionnaires. The findings of this research indicate that distance learners lack computer application skills and this has influenced their access to information. The study also establishes that level of knowledge in computer application skills and learners' attitudes towards computers has influence on learners' access to information. The study recommends that educational institutions should teach and train their students in computers skills starting at an early age and even before students enrol for distance learning. The study also recommends the availing of computers to distance learners at cheaper prices. From the findings, the study also recommends that distance learners start to value computers.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Computer application skills have revolutionalised many sectors in the society and education is no exception. New technologies have necessitated the replacement of the traditional paradigm of face to face teaching with electronic learning. Using various ICTs there are possibilities of getting knowledge and information out to the learners at their own pace thus offering a whole new world for knowledge transfer (Dick, 1995)

There have been numerous efforts to increase distance learners' access and use of computers through witnessing rapid development networks, dramatic development in the processing power of personal computers and striking advances in magnetic storage technology. These developments, according to Verdwin (1991), have made the computer a dynamic force in distance education, thus proving a new and interactive means of overcoming time and distance to reach students. The new global Distance Education Classroom allows the dissemination of knowledge and skills to professionals who work in various geographical locations, when and how they need it.

Most students have highly adopted use of mobile phones, computers and internet. As by July 2011, statistics from Communications Commission of Kenya (CCK), indicated that the number of mobile phones subscription had risen to 25.27 millions. This means therefore that more than 60% of Kenyan population has access to basic communication through the mobile. This is attributed to several factors, among them relative affordability of the devices, reduced cost of accessing services and the rising popularity of mobile cash transfer applications.

Access to information using computers by the student would therefore warrant the need of fast and reliable computer connectivity so that education can be transacted via video and teleconferencing means or even while in transit on ones mobile phone. This would see computer industry growth towards the uptake of mobile communication technology that gives distant learner access, to wide area wireless voice services, mobile internet access, video calls and mobile television. All these services are accessible from ones phone, giving them the freedom to make use of all these services anytime and anywhere. This technology is not only restricted to use via ones mobile. It is also accessible through other devices- one's computer via a higher speed dongle or a Wifi router (Mwangi, August 2009).

All distant learning students with a computer need not try or find a Wifi hot spot such as cyber café in order to access the information at high speed. Instead they would insert a modem card or plug to their laptops and access information from any site, downloading videos and songs in mere seconds, surfing the internet at flash speeds, line streaming of broadcasts from their laptops and using their cell phones, also allowing distance education students to send pictures (video messages) from single mobile device, integrating basic computer and communication functions (Willis, 1994)

This being the position then, is it a true reflection of distant learners of the University of Nairobi? What would the students say about their basic computer skills? What number of students is able to access information through these skills? What connectivity challenges do they experience? Does access to information this way

improve their academic performance? These and more questions keep bothering the researcher as she undertakes the venture of exploring this topic.

1.2 Statement to the Problem

Leveraging on the computer, distant Learners can participate in various education programmes that are affordable, flexible and convenient. Computers reduce education costs in that they make education accessible to individuals in remote areas and to parents, professionals, businessmen and women who are too busy to attend physical classroom as well as to the young who are technologically savvy (Tabitha, 2007). Apt access to information creates effective communication that enables interaction similar or better than conventional classes. Distant learners would get fast registration to their courses, receive reading materials, receive lecture support, get assignments, sit for examinations, hold discussions and tutorials, etc.

According to an article of a case study research- Ontario Institute for studies in education, Baath (1977) reports that students' interaction with online computers started submitting assignments to a greater extent, adopted more favourable attitude towards courses and completed the courses in shorter time. Hiltz (1988) in his large scale comparison study reported that courses conducted through computer mediated communications had improved educational quality, were easily accessible, more convenient, involved students more actively in classes and improved students access to the professors.

Access to information using computer application skills avails education to many people even to those who have had no chance of attending classes; hence achieving millennium development goals on education. This would make many acquire

university degrees and diplomas with the benefits of retaining their jobs, meeting with families, learning at their own pace, therefore saving time. Age may not be a requirement for one to study (Macharia, 2009).

Distant learners use computer to access information. There is much activity with the computers, more than with books. This has led to the proliferation of computer colleges and cyber cafés and students using their laptop computers and mobile phones to access information, even within the universities. Some students also use a lot of money in paying people to access and print information for them. Students are shunning books, newspaper and libraries in favour of going to cyber cafés.

Various questions therefore emerge: Is it that students are too busy to read books? Is it that computers are replacing libraries, classrooms and printed books? Is it that computer skills are a must today for D.E learners? Is it that computer knowledge and skills can avail all knowledge and lead to completion of courses? It is against this background that this research wishes to find out the factors influencing use computers in accessing information by distance learners.

1.3 Purpose of the Study

The purpose of this study was to determine the factors influencing use of computer in accessing information by distance learners.

1.4 Objectives of Study

1. To establish the extent to which learners' level of knowledge in computer skills influence accessibility of information.
2. To establish the extent to which learners' experience in computer application skills influence accessibility of information.

3. To establish the extent to which learners' attitude towards computer application skills influence accessibility of information.

1.5 Research Questions

1. To what extent does learner's level of knowledge in computer application skills influence accessibility of information?

2. To what extent does learner's experience in computer application skills influence accessibility of information?

3. To what extent does learner's attitude towards computer application skills influence accessibility of information?

1.6 Significance of the Study

The research sought to establish the factors influencing use of computers in accessing information by distance learners. The information gathered through the study will provide useful data to educational institutions for use during the appraisal processes when giving out research work. The information will be extremely useful to the University of Nairobi, School of Continuing and Distance Education as it makes policies on issues regarding accessing information by use of computer by students. Successful completion of the research study will also add onto the knowledge so far gained in the area.

Outcome of the study would further make institution dealing with Distance Learners to decide on whether to make acquisition of computer skills mandatory before joining D.E or whether to expand computer networks and interconnectivity rather than expand libraries and books or whether to avail computer gadgets such as laptops, modems, mobile phones to the students.

1.7 Limitations of the Study

The limitations the researcher encountered were the delayed return of questionnaires due to busy schedule of distance learners who are only available on residential sessions. Some of the respondents were not willing to disclose their level of knowledge in computer application skills while others had difficulties in disclosing their age brackets. Another major limitation was on financial constraints in providing questionnaires and travelling expenses.

1.8 Delimitations of the Study

The study was carried out in the University of Nairobi, Kikuyu campus. It focussed on the Distance Learners' B.Ed (Arts) Academic Year 2011/2012

1.9 Basic Assumptions of the Study

The researcher assumed that the sampled students were honest in their responses giving correct information.

1.10 Definition of Significant Terms

Access to Information- The aspect of obtaining facts using computers.

Application- The putting to use of computers to get information.

Attitude- Manner of feeling or behaving, judgment and opinion that guides use of computer application skills.

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

Distance Education: The process of providing instruction when students and instructors are separated by physical distance and technology often in tandem with face-to-face communication, is used to bridge the gap.

Distance Learning- The desired outcome of distance education

Electronic Mail (email)- sending messages from one computer to another

Experience- The gaining of Knowledge or skills which comes from practice rather than books

Hypertext Transfer Protocol- The protocol used to signify an internet site is a www site, HTTP is a www address.

Information – Something that gives knowledge in the form of facts, Fact accessed to through computer application skills.

Knowledge – Understanding and learning that is known, familiarity with and information about computer application skills

Modems- A piece of equipment to allow computers to interact with each other via telephone lines by converting digital signals to analog for transmission along at analog line.

Network- A series of points connected by communication channels in different locations.

Skills - Practical knowledge, power and ability to use computer and manipulate computer application skill as to access information.

World Wide Web (www): A graphical hypertext- based internet tool hat provides access to homepages created by individuals, businesses and other organization.

1.11 Organization of the Study

This research study has five chapters. Chapter one is an introduction of the whole study giving background of the study, statement to the problem, study objectives, research questions, significance of the study, limitations and delimitations, assumptions of the study and definition of significant terms. Chapter two presents available literature on use of computer and access to information, level of knowledge in computer application skills and accessibility of information, experience in computer application skills and accessibility of information, attitudes towards computers and accessibility of information, theoretical framework and conceptual framework. Chapter three covers research methodology- research design, location of the study, target population, sample size and sampling procedure, research instruments, validity, reliability, data collection procedures, data analysis and operation of variables. Chapter four is an analysis, presentation and interpretation of data. Chapter five is a summary of findings, discussions, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

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

2.2 Use of Computer and Access to Information

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

To operate a computer, it is paramount to have computer literacy background. This is often contained in computer training manuals, for example one designed and structured by Megasoft Technique for Equity Bank. This explains what computer is, types of computers, opening up a computer, shutting a computer, elements of a

computer, parts of computer, operating system and windows programmes (Equity Bank Computer Training Manual, 2005).

The students should be able to use the mouse to right click and right drag appropriately. They should identify and use right parts of window-title bar, menu bar, tool bar, icons, working space, border, status bar, scroll bars and the task bars (IAT, 2002). Knowledge and skills in window operation control buttons to minimize, maximize, restore and close the programmes using the mouse, displaying more than one window on the screen, commands of the task bars, facilities of the computer icons, recycle bin, internet explorer, command of the computer using icons to open folders, create folder, operate on folders, open flies, load programmes on the windows etc are all essential (IAT 2002). Having a computer (preferably running an up- to- date operating system) a modem can access telephone lines or local Area Networks and connect a student to the internet to access the World Wide Web (www).

The internet potential is limited only by user's vision and creativity. As the internet grows, new and innovative uses will surely follow. The computer users should be in position to view a home page appearance using browser tools 'bookmark' list and hypertext hotlinks email links. He/She should have computer skills to access the internet through a network connection through their schools or work place systems, dial-up connection through a modem and phone line, cable internet, satellite connections integrated services Digital Network (ISDN), wireless connection, and web TV (IAT, 2007).

To search and access information through the internet, computer users should identify a few of the popular web indexes e.g. Yahoo! (http://yahoo.com) yahoo! (http://yahoo.com) web Lycos (http:lycos.com) WebCrawler (http:/www.webcrawler.com) infoseek (http://www.infoseek.com/) (Mwangi, August 2009). Computers have made it possible for people all over the world to communicate with one another effectively and inexpensively. Unlike traditional broadcasting media, such as radio and television, computers and internet do not have centralized distribution system. An individual whose computers can access information can communicate directly with anyone, make information available to others, find information provided by others, or sell products with minimum overhead cost (Kochmer, 1995). Access to information requires users to be apt in computer skills.

The first generation computers were very expensive and bulky. They used machine language for computing and would solve just one problem at a time. They did not support multitasking. Till the 1950s all computers that were used were vacuum based .In the 1960s transistors based computers, made computers smaller and cheaper. They made computers energy efficient but transistors led to emission of large amounts of heat from the computer which could damage them. The use of transistors marked the second generation of computers. Computers of this generation used punched card, for input. They used assembly language (Equity Bank 2005 Computer Training Manual, 2005). The integrated circuits ushered in the third generation of computers .Their use increased the speed and efficient of computers. Operating systems were the human interface to computing operations and keyboards and monitors became the input-output devices (IAT, 2002)

COBOL, computer language was developed in 1959-60. Basic came out in 1964, designed by John George Kemeny and Thomas Eugene Kurtz. Douglas Engel Bart invented the first mouse prototype in 1963.Computers used a Video Display Terminal (VDT) in the early days .The invention of colour graphics adapter in 1981 and that of enhanced graphics adapter in 1964, both by IBM added 'colour' to computer display. All through the 1990s computer monitors used the CRT technology. LCD replaced it in the 2000s.Computer keyboard evolved from the early typewriters. The development of computer storage devices started with the invention of floppy disc by IBM again (MKU, 2007)

In 1968, Dec launched the first minicomputer called the PDP-8.In 1969 the development of ARPANET began with the financial backing of the department of Defence. Thousands of integrated circuits place onto silicon made up a microprocessor. The introduction of microprocessor was the hallmark of fourth generation computers. In 1974 Xerox came up with Alto workstation at PARC. It consisted of a monitor-a graphical interface mouse and an Ethernet card for networking. By 1988 more than 45 million computers were in use in the United States. The number went up to a billion in by 2002 (IAT, 2007).

The fifth generation computers are in their development phase. They would be capable of massive parallel processing, supporting voice recognition and understanding natural language .The current advancement in computer technology are likely to transform computing machine into intelligent ones that possess self

organising skills. The evolution of computers will continue perhaps till the day their processing powers equal human intelligent (Mavindu, 2006).

Many higher educational institutions offering distance educational courses have started to leverage the computer to improve their programmes reach and quality. (Willis 1994) the virtual university of the Monterrey institute of technology in Mexico uses computers to deliver courses to students throughout Mexico and in several Latin American countries. Similarly, the African virtual university, initiated in 1997 with funding support from the World Bank, uses satellite and computer technologies to provide distance learning opportunities to individuals in various English –speaking and French-speaking countries throughout Africa.

Distant Learners often do participate in online teaching that includes all categories of learning and teaching that is supported electronically (Moore, 1990). Information Communication and Technology (ICT) serves as the media use to execute the learning process. This includes the computer and network-enabled transfer of knowledge and skills that involve a number of application and processes.

These include web-based learning computer and base learning and virtual classroom opportunity, and digital collaboration. The content is usually delivered via the internet, intranet audio or videotape, satellite television and CD-ROM. An example of computer-based learning is the e-learning package doubled 'Msingi pack' created by virtual essence, a curriculum aimed at candidate as they prepare for KCPE.

Proper computer application skills allow access to a revision kit with KCPE past papers, enabling pupils to choose a subject they want and the year it was done. Pupils

can answer questions by clicking on multiple choices provided. The work is instantly marked by the click of a mouse and result of performance given through a report. It is also possible to analyse the test to find which question one fails and what segment the question was set from. This curriculum enables access to learning resources, both online and offline for schools, college and universities in line with the ministry of Education, Science and Technology curriculum policy. In Kenya vision 2030, one of the flag ship project for education and training is to establish computer supply programme.

The government has already started to implement Wezesha laptop project where university students acquire laptops after receiving funding from World Bank. This initiative was implemented by Kenya ICT Board under the ministry of information communication. The government is also distributing laptop computers to school around the country. Despite the increasing number of ICT experts developing online teaching materials, Kenyan's still do not utilize these inventions. This has mainly been attributed to lack of infrastructural capacity to access information and use ICT equipment and therefore limiting the involvement of teachers and students in modern learning methods. Students in the rural areas are the worst hit since some areas do not have electricity to power electrical gadgets – computers and mobile phones needed for e-learning, though solar energy technology has helped to ease this problem (Elijah, 2006).

According to the ministry of education the provision of the necessary computer application skills and infrastructure as well as e-learning materials is an urgent need which should go hand in hand with adequate training of teachers in the use of ICT

which in turn will enable the education sector be ready to move towards the attainment of vision 2030. The Kenya Institute of Education and the Ministry of Education aim to provide the necessary ICT infrastructure and develop technological skills to enhance ICT integration in pedagogy and use of digitized contents.

Virtual Essence Limited, a company that developed a comprehensive local e-learning revision package for Kenya primary schools says that ICT's have become part and parcel of Kenyans especially in the education sector. "Call it the digital age the ICT era, the computer age, the information superhighway or technological revolution, one thing remains a fact we have no choice but to shape and move with the times. Information communication technologies are rapidly taking over every sector of our lives today, from the simplest of communication to the way we transact business", said Virtual Essence Chief Executive officer Michael Wachira (Daily Nation June 2011).

Students may have access to the ICT facilities but are not able to utilize computers and other technologies to improve their academic performance due to lack of access and proficiency skills (IAT, 2007). Managing Director of schools Master Charise Sakari said that the country lacked awareness in terms of ICTs since the necessary is available. "We are just late for e-learning in Kenya. We have the necessary communication infrastructure such as the fiber optics cable and mobile telephony that can get us there in terms of e-learning but we are not using it", said Sakari. Accordingly there is no proper policy guidelines given by the government and the prior-initiative of integrating ICT have been left entirely to vendors.

Distance learners continuously get challenges in their quest for higher education as they spend most of their time searching for knowledge (Berge, 1998). In this search computer and internet cannot be left out as they are the 'closest friend' to them. However, most of them are faced with challenges as they don't have basic information technological skills (computer skills) and those ones who have don't know how to search for the information from the internet. In Kenya institutions of higher learning including the University of Nairobi introduced distance education learning to cater for the demand of education and thus students have to do much research on their own and if they can utilise computer skills, this can be easier (Daily Nation, January, 26 2012.)

It is against this background that this research wishes to examine the role of computer application skills in accessing information by the distance learning students.

2.3 Level of Knowledge in Computer Application Skills and Accessibility of Information.

The impact of computer use on our life is obvious and cannot be sidelined (IAT, 2002). It is used in almost each and every domain of business. Computer users can access any information of anything just by browsing through a few websites, using emails, blogs, IM chats, and social networking websites and communication software for sharing information the world.

Computer use has made access to information cheaper and easier. This has enabled business and advertising industries to thrive (O'Brien, 2002). The use of computer for networking and communication is very popular among all age groups, providing an effective and easy platform for interaction, sharing of photographs, seeking for job vacancies and conducting interviews. Computers also access entertainment facilities

like listening to online music, downloading music, games, sports and video movies. They can also be used for banking and shopping.

According to Wakimani, Lecturer in Inoorero University, computers are also a popular medium used by distant learners. Many students use it for educational purposes like finding study materials, applying to some colleges and universities. Students use websites for their institutions to check examination results, examination schedules, and application procedures for project help and for obtaining the required images (Daily Nation 25th January 2011).

Computers have revolutionalised common man's life and have brought a dramatic change in the life of every human being (MKU 2011). Plentiful information is available on the internet and can be read by means of a computer. Almost everything that the books once carried is now accessible through a computer. Everything that the textbook has is now just a click away. Computer teaching plays a major role in education. A lot of many things are simpler to teach by means of computer. When the information is supplemented with an attractive interface, it can result in greater readership. The different font style, colours and sizes provided by the computer software enable ease in reading and understanding. Content on a computer can be made livelier than in textbooks by eye-catching pictures, colours and animations.

Computer teaching provides students with a learning system where they can view watch videos and listen to speeches or lectures, making the process of teaching interesting and interactive. Computer use in education save paper and optimize information storage. A lot of paper is used in the making of textbooks. For example,

for bringing out elaborate explanation on topics, books take up a lot of pages, thus contributing to a high amount of the usage of paper. Information can be stored in condensed form on computer system thus saving paper and environment (Ngechu, 2010)

Computer teaching and learning can inculcate the idea of self study in distant learners, making them self- reliant. According to Luciano (2005) computer teaching could introduce distant students to the new world of knowledge, making way for technology to be part of their education. Computers can replace textbooks to a certain extent. Computer use in education is fast and less costly; information can be updated or modified at any time and for a number of times. Students can contact any other students or their teachers through their email. Teachers can also contact their guardians easily through their computers. Students too can access encyclopaedia of different subjects on the internet, latest news including current affairs and speeches.

According to Abrahamson (1998), a positive effect of computers in education is the onset of distance education. With these facilities one can take up courses with the course material available online, learn and take examination. People from any part of the world can gain knowledge of different subjects and complete courses with the help of online learning. Winter Pack High School in Orlando, Fla is gearing up to become the state's only online school name ;the Florida High School. The school is hoping to completely do away with classrooms in near future, offering all classes by computer. It is believed this will help the problem of overcrowding in schools (Mwangi, August 2009).

Many countries including Kenya wants to expand and enhance their education and is looking at Distance Learning to facilitate this communication network. Particularly the computer has great potential in taking education to people for whom access is difficult. Distance Learning has shown that it could provide educational opportunities for large numbers who have previously been denied such opportunities.

Kenyan's universities and research centres have a unique role to play in knowledge production and dissemination. To do this, they need to be locally grounded and socially wired. They also need to be well integrated into global knowledge system to be able to draw freely from and contribute to a pool of global science (Ngechu, 2010). Computer use has opened up unprecedented communication and collaboration but there is a major constraint of scarcity and high cost of access for African institutions (Berge, 1998). Research conducted by National Research and Education Network (NREN) Kenya found out that while average university in the European Union has almost 800 times more bandwidth than their African counterpart, African universities pay about 50 times more per unit than their counterpart in North America or Europe. To rectify this, African institutions need increased and cheaper access to bandwidth. However, to be fully effective, this must be complemented by development of content and methodology appropriate to enhanced learning, teaching and research. This can be achieved by providing sustainable and high speed internet connectivity, facilitated electronic communication, support learning and teaching over the internet, support sharing and learning resources (Berge, 2001).

To students and indeed scholars, the use of computers to access information cannot be over emphasised. Most of them especially D.E students seem to use the computers

excessively. It is important therefore to find out the perception of the university of Nairobi students, about the use of computers and also if computers are fast in replacing libraries as a source of reference materials.

2.4 Experience in Computer Application Skills and Accessibility of Information.

Proficiency in computer skills especially for a distant learner avails a lot of information. Among other things a worldwide collection of computer networks cooperate with each other to exchange data using a common software standard (Mwangi, Aug 2009). Through telephone wires, optic cables and satellite links, computers users can share information in scope, and design of the computers allow users to connect easily through ordinary personal computers and locate phone numbers. There are also exchanges of electronic mails (E-mail) with friends, teachers and colleagues who have E-mail addresses. Information can be posted for others to access and to update it. Computer skills also allow access to multimedia information that includes sound, photographic images and even videos. There is also access to diverse perspectives from around the world.

In addition to text documents the computer makes available graphic files (digital photographs and artwork) and even files that contain digitized sound and video through the internet, one can download software, participate in interactive forums where users post and respond to public messages and even chats in which one type and in some cases speak messages that are received by the chat participants instantly (Mboroki, 2011).

Distance students can take advantage of their computer skills to share research and lesson notes among colleagues and like minded individuals. They can also

communicate with others and transmit files via E-mail. Computer skills can also help D.E students in requesting and providing assistance with problems and questions and in marketing and publicizing product and services. Proper use of computers skills allows the gathering of variable feedback and suggestions from other students and teachers (Abrahnamson,1998).

Other distinct advantages of specialized computer skills is open standard that allow web pages to be viewed through almost any computer with an internet connections and a web browser. Also the ability to make software and data files available for downloading and ease of use – just point and click on your browser to access the information needed (Williams, 2003) For individuals or organizations wishing to distribute information, the computer makes 'publishing' easy and cost effective. Putting the information on the computer is quite inexpensive compared with the traditional publishing, yet puts that information before a potential audience of millions and unlike a printed publication a computer document can be revised and updated at any time (Turban, 2004)

Specialized computer skills would allow Distance learners to publish and make frequent updates to on-line documents and receive direct feedback on those documents through E-mail, further connecting with a diverse, global audience – a community defined not by geography but by interests. It also allow the students to keep abreast of the latest news and development in educational professions- often before such news appear in conventional media , access other resources easily via hypertext, access otherwise obscure information not readily available in other media and download useful software at little or no cost (Willis, 1995).

The computer can be connected to the internet through the same cable that carries the TV signal. Monthly service charges are not much more than modem connection cost. Satellite connection is an efficient method of receiving large web graphics and other items. An ISDN line is a type of digital phone line connected to the computer that transmit data many times faster than a conventional modem and phone line. Pagers, cellular phones and Personal Digital Assistants (PDAs) now allows varying levels of internet access, from notification of email to limited web connections. Web TV introduced in late 1996 provides web and email access through ordinary television sets. The connections are made through a custom high speed modem. One must purchase a special set-top unit for the T.V then subscribe to the connection service (Hughes, 1994).

Robert (1994), a Canadian cultural critic has expressed the concern that information technology "will change the economics of reading and the place of knowledge in society" He sees this development as a significant challenge to what he calls the Ideology of the Book. The central principal of the Ideology of the Book is a commitment to the universal availability of knowledge. According to their ideology, knowledge is a public good and its widespread accessibility is critical to the cultural, economic and political development of the citizens of an open democratic society. The consequences of this commitment are evident in many ways universal public education, reduced postal rates for the distribution of published material, tax supported libraries, widespread distribution of government information through policies that balance the rights of users and creators.

Most universities, including the University of Nairobi have availed education to very many students through distant education (U.O.N Student Handbook from DES 2010). Further these distant learners are motivated and asked to not only use their libraries but also to find information, interaction and collaboration from the internet, using computers. It is for this reason that computer application skills are a must for any D.E student if he /she has to access information. Possession of computer skills would make D.E students search for information from their laptops, cybercafés and mobile phones even as they travel in their work stations at any time, even in their homes. Possession and use of computer skills therefore increase the uptake of education, and maintain D.E students in their institutions, leading to fast completion of their courses, therefore earning their certificates, diplomas or degrees and eventually promotion.

2.5 Attitude towards Computers and Accessibility of Information.

Access of information using computer and computer application skills is influenced by attitude of those involved (IAT, 2007). Observation reveals that young people often have time to study and learn in computer colleges, since they are available, unlike the old who are engaged in their businesses, work or family. In the urban areas, where these colleges are found because there is electric power, computer use is widespread. Those in the middle class income group, have gone up to or beyond K.C.S.E level of education and are ambitious to gain knowledge, whether male or female can go to any extent to gain computer application skills because they know that their 'dreaming big' according to Kamal Budhabatti, CEO and founder Craft Silicon Company (Kenya), would be irrelevant without computer and computer application skills.

According to H. Moraa, 24, Head Wezalele Company, the young people love for technology and innovation spurs them to look at life, including school life in applied dimension. They believe that there is money in information technology. They have seen others get rich by selling their technological skills. This often makes them accept that being ambitious, aggressive and tech-savvy can turn their technology including computer application skills into a successful business by conquering the virtual world. M.Njihia, 28, CEO Symbiotic Company echoes these sentiments by revealing that computer application skills can be focused on mobile business, mobile entertainment, custom web and mobile application solutions (Daily Nation, Jan 26 2012). Most young people think that they can provide solutions by use of computer application skills, curiosity, determination and faith in information technology have inspired most young people to become solution providers using computer industry.

Most computer users have evidence that technology is rapidly changing .To them computer technological skills are evolving so quickly that they focus solely on innovation, not meeting tangible needs, and constantly changing equipment in an effort to keep pace with the latest technical advancement (O'Brien, 1999). Advances in technology according to Andrew Heller of IBM have a way of consigning the status symbols of yesteryears to the backwaters of fashion, taste and prestige. K.Mutunga in DN2, a magazine published every week by Nation Media Group ltd (NMM) chronicles technological gadgets that have become almost obsolete: Black and white TV, transistor radio, record player, analogue camera, telephone landlines, telex, typewriters, among others. The fear is that computers and the skills that go with them would eventually become absolute. (Daily Nation, Jan 25, 2012)

Most Distance Learners did not study computer in school. For this reason, widespread computer illiteracy still exists. While computers have been widely used since the 1960s, there are many who do not have access to computers or computer networks (Berge 1998). Since students must be highly motivated and proficient in computer operations before they can successfully function in a computer based distance learning environment, there is large enrolment in computer studies in the very many computer colleges in Kenya. Observation reveals that in almost every town that is served with electricity, there is a computer college. Too, most students use assistants to access information for them. This is often costly since these assistants have to be paid to access information, do printing and do e-mailing.

Dr. Mboroki (2010) in his 'Distance Education at a glance' compiles that, costly development of computer networks limits their uses. This is despite that individual computers are relatively in expensive and the computer hardware and software market is very competitive. It is costly to develop instructional networks and purchase the system (printers, modems and flash disks) to run them. This makes some people, though possessing computer application skills, to rely on others for access of information, rather than do it themselves. Some lack time to access information because they are busy in their work or families. Some people also would want to put their computer application skills to use but they come from places without network or power supply.

According to Bernard (1997) some students hesitate to contribute to computer conferences or to send E-mails because of lack of familiarity with the proper protocol. They are also not often familiar with resources and information available for access.

They feel they need encouragement on use of E-mail classroom conferences and electronic bulletin board w.w.w website early in the course so that they can overcome these inhibitions.

Most would be computer users are discouraged by the immense responsibility involved, in terms of having internet and w.w.w access to ensure equal opportunities for computer interaction and feedback. There are also challenges involved in learning basic computer skills, new software and appropriate on-line communication skills. These, together with occasional trouble- shooting student computer problems often slow access to information through computer application skills (IAT, 2002)

Many students who over-use computers often complain of computer addiction disorder which is simply the excessive use computer in one's daily life, with various negative effects especially on the children. Computer use leads to reduced physical activities, easy access to pornography, vulnerability to cyber crimes, theft of personal information spamming (sending of unwanted E-mails in bulk that may obstruct the entire system) and social disconnect. This often makes many people disapprove of use of computers and learning of computer application skills (American Psychology Association, 1997)

2.6 Conceptual Framework

The conceptual framework for the study is presented in figure 1. It shows the relationship among the variables identified in the study.

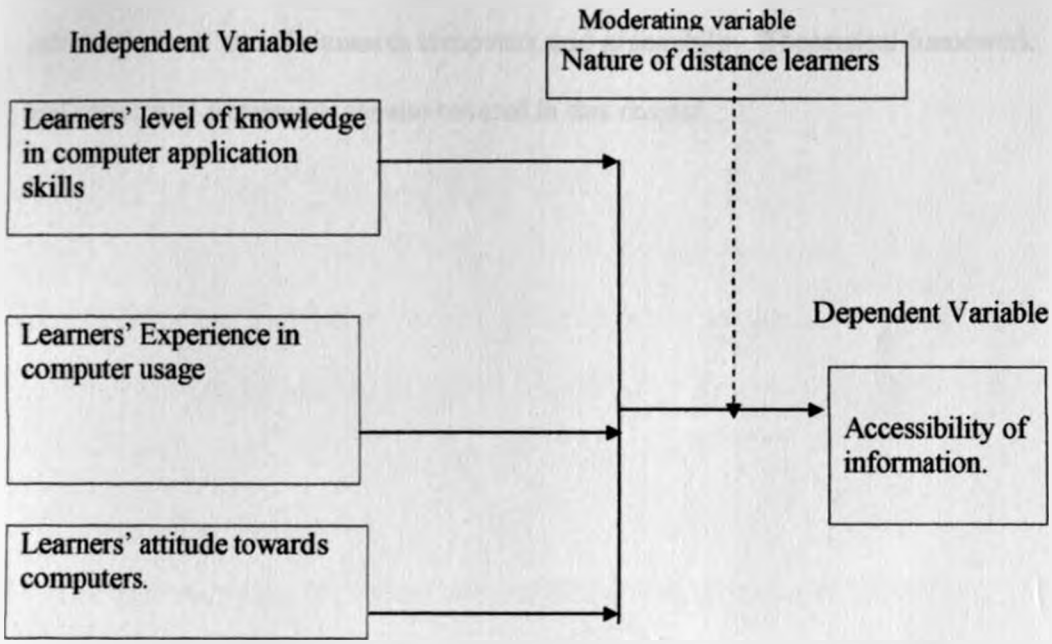

Fig 1 Conceptual framework

In this study, there were three independent variables- level of knowledge, experience of the learner and attitude of the learner towards computer application skills. These independent variables influence computer application skills on accessibility of information which is dependent variable. Apart from these, nature of students who are distance learners affects the computer application skills on accessibility of information. This is the moderating variable.

2.7 Summary of the Literature Reviewed

This chapter has put across the meaning of computer and computer application skills. It has also chronicled the use of computers and access to information, and level of knowledge in computer application skills and accessibility of information. The chapter also focuses experience in computer application skills and accessibility of information and attitude towards computers and accessibility. Theoretical framework and conceptual framework are also covered in this chapter.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1: Introduction

This chapter describes the research design used during the study. It also discusses the location of the study, target population, sample size and sampling procedure, research instruments, reliability, validity and data collection procedures. It ends with the operationalization of variables and the summary.

3.2: Research Design

This study adopted survey research design where the data to be collected would help the researcher to obtain specific characteristics of groups (distance learners) by asking them questions in form of questionnaires. The questions were clear and legible to help the respondents to answer them thoughtfully and honestly.

3.3: Location of Study

The study was conducted in the University of Nairobi Kikuyu campus amongst the distance learners, B. Ed (Arts) Academic Year 2011/2012. Kikuyu campus is located at Kiambu County approximately 25 km from Nairobi city.

3.4: Target Population

This study targeted distance students who are in the department of Distance Education, School of Continuing and Distance Education. The study specifically studied students in part III and IV in the Academic Year 2011/2012. This category had about 1,000 distance learners, 500 from each part.

3.5: Sample Size and Sampling Procedure

A sample of 10% (100) of the total population was studied .The stratified random sampling was used in selecting students for the study. Students were first of all be

divided according to constituent parts and then randomly selected with these strata. Simple random sampling was used to come up with sample of students from each strata technique. All students in Distance Education pasts (III) and (IV) Academic year 2011/2012 had equal chances of being selected. Use of stratified random sampling permitted the researcher to include parameters of special interest to control for internal validity in terms of section through the use of moderator or control variables (Tuckman, 1994). Random sampling led to selection of a sample that could be inferred back to the larger population (Thomas and Nelson, 1996).

Table 3.1 below shows target population, population and sample size.

Table 3.1 Target Population, Population and Sample Size

Target Population	Population	Sample Size
Part III	500	50
Part IV	500	50
TOTAL	1,000	100

3.6: Research Instruments

This refers to the tools to be used by the researcher. This study used questionnaires. Closed and open ended questionnaire items were used and administered to the selected sample. These were used because they are easy to administer and were cost effective. Questionnaires were also preferable since the respondents were all literate.

3.7. Validity of the Instruments

Validity is the ability of a chosen instrument to measure what it is intended to measure. Validity of data is an essential component in ensuring that the tools used for data collection is precise in capturing the intended information and is able to gather

consistent data. In instrument validation pilot study was done on research instruments. The research supervisor read over the question. The supervisor and a panel of five educational computer experts provided variable critiques about the research instruments, format, content, expression and important test items, which led to deletion, addition and revision of items where need be and made recommendations for improvement.

3.8 Reliability of the Instruments

Reliability of a research work indicates the extent to which the research work is without bias (error free) and hence offers consistent measurements across time and across the various items in the instrument. To ensure reliability the researcher used split-half method in which she randomly divided the distance learner under study into two sets. The entire instrument was administered to a sample of students and the total score calculated for each randomly divided half. The split-half reliability estimate is simply the correlation between these two total scores.

3.9 Data Collection Procedures

The researcher sought permission to conduct research from the University of Nairobi, School of Continuing and External Studies, Department of Distance Education. The researcher visited venues holiday residential sessions were taking place in. She introduced herself to the respondents and explained that the studies were being conducted for academic purposes only. Before issuing the questionnaires, the researcher sought the consent of respondents to participate in the survey. The researcher ensured that the respondents' names were not a requirement in the questionnaires. All respondents voluntarily participated in the study and gave the information requested at free will. An assurance was made to all respondents on the confidentiality to be observed during the study.

3.10: Data Analysis

The data was coded and then a data base was developed in statistical software. Due to the type of analysis required, the researcher opted for S.P.S.S (Statistical Package for Social Scientists). In the data base, a form of matrix was developed where each question was given a variable name, type and value where there was need.

The data obtained was first arranged in logical order followed by the drawing of tables. Cross tabulations were done to check computer knowledge and ability to search information via internet. Descriptive analysis was used and also an aspect of correlation to show if there was any association between the ability to search information and the comfort while using computers which assisted to gauge the attitude levels versus the search ability. Since SPSS graphs could not be edited to include various aspects in the graphs, some tables were exported to the excel software where this was done with ease.

3.11 Operationalization of Variables

Table 3.2 illustrates how the variables were measured. Actual and concrete measurement was used so as to eliminate subjectivity during and throughout the study.

OBJECTIVES	VARIABLES	INDICATORS	MEASUREMENT	LEVEL	DATA COLLECTION TOOL	DATA ANALYSIS METHOD
1.Establishing the influence of learners level of knowledge in computer	-Learners' level of computer knowledge	-Training -Interaction with computers.	-No. of hours of training -Numbers of hours of interaction	-Ordinal -Ordinal	-Questionnaire	-Descriptive
2.To establish the influence of learners experience in computer.	-Learners experience of computer usage	-Duration of computer usage -Internet Knowledge	-Frequency in Computer usage -Accessibility of internet -How others rate them	-Ordinal -Nominal	-Questionnaire	-Descriptive
3.To establish the influence of learners attitude towards computer.	-Learners' Attitude towards computer	-Interests -Perceived ease of usage	- Level of interest - Ease of usage	-Nominal	-Questionnaire	-Descriptive statistics; Comparative study and correlation analysis

3.12: Chapter Summary

Chapter three focuses on the research design used during the study at the study location, Population target, sampling procedure and methods of data collection, validity, reliability and operational definition of variables.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter discusses the research data obtained. Specific details on the deliberate efforts made by the respondents to familiarise themselves with computer applications are considered and the extent to which this influences their performance. The chapter starts with a summary of the characteristics of the respondents and of the data collected. This is followed by a detailed presentation of results relating to each of the three objectives in turn. In addition and where relevant, selected findings from the personal interviews with key respondents are used to inform and contrast for some of the hypotheses.

4.2 Questionnaire Return Rate

The study questionnaires were issued to a hundred respondents. Table 4.1 shows the return rate.

Table 4.1 Return Rate of Questionnaires

Number of respondents issued with questionnaires	Number of questionnaires retrieved	Return rate (%)
100	100	100
Total	100	100

Return rate of questionnaires was important in determining whether the respondents turn out was statistically admissible to work with. The return rate of questionnaires was 100%. This was achieved through making immediate follow-ups for all

questionnaires issued. The questionnaires were issued to a 100 respondents during the April- May 2012 holiday residential sessions.

4.3 Characteristics of the Respondents

A sample of a 100 respondents was involved in the study. The respondents' profile was noted. Table 4.2 shows gender of the respondents. Table 4.3 shows marital status of the respondents. Table 4.4 shows age of the respondents.

4.3.1 Gender of the Respondents

The gender of the respondents is presented in Table 4.2

Table 4.2: Respondents Gender

Gender	Frequency	Percent (%)	Cumulative Percent(%)
Male	73	73	73
Female	27	27	27
Total	**100**	**100**	**100**

According to Table 4.2, 73% were males and 27% were females. This shows males were more enthusiastic to respond than the females. Males would probably have an upper hand in the access of information.

4.3.2 Marital Status of the Respondents

The marital status of the respondents is presented in Table 4.3

Table 4.3: Marital Status of the Respondents

Marital status	Frequency	Percentage
Single	37	37%
Married	60	60%
Separated	3	3%
Divorced	0	0%
Total	**100**	**100**

According to Table 4.3 above, 60% were married, 37% were single and 3% were separated. None of the respondents was divorced. This shows that most respondents were married and this may have influenced on their knowledge, experience and attitude in computer use thus affecting their access to information.

4.3.3 Age Bracket of the Respondents

The age bracket of the respondents is presented in Table 4.4.

Table 4.4: Age Bracket of the Respondents

Age Bracket	Frequency	Percent (%)
Below 20	4	4
21-30	35	35
31-40	35	35
41-50	10	10
51-60	16	16
Total	**100**	**100**

From Table 4.4 above, the age brackets 21-30 and 31-40 had 35% of the respondents each while below 20 years had 4%. 41-50 had 10% of the respondents and 51- 60 had 16% of the respondents. This showed that majority of the respondents 70%, were between ages 21-40 years. These were respondents who were mostly married and had

other family and societal obligations which affect their search for information using computer application skills.

4.4. Learners Level of Knowledge in Computer Application Skills

The extent to which learners level of knowledge (computer literacy) in computer application skills influence accessibility of information was measured. Table 4.5 shows whether the respondents had a personal computer/laptop. Table4.6 shows background knowledge of a computer. Table 4.7 shows ability to search information via internet. Table 4.8 shows asking assistance when unable to use computer. Table 4.9 shows the general ability to search information.

The respondents possession of a personal computer is presented in Table 4.5

Table 4.5 Respondents Possession of a Personal Computer/ Laptop

Owning a computer/ laptop	Frequency	Percentage
Yes	24	24
NO	76	76
No response	0	0
Total	100	100

The Table 4.5 shows that of the 100 respondents, 76% confirmed that they do not have a personal computer or laptop while 24% confirmed they have, one would expect therefore that there would be no advanced use of computer in the access of information.

The respondents' background knowledge of the computer is presented in Table 4.6

Table 4.6: Background Knowledge of the Computer

	Background knowledge	Comfort using computers	Attended computer class
Yes	78	75	70
No	22	17	30
No response	0	8	0
Total	**100**	**100**	**100**

From Table 4.6 above, 78% of the respondents had background of computers and only 22% of the respondents had no computer background. When interviewed further, 75% said they were comfortable using computers, 17% said no and 8% did not respond to the question. This shows that respondents are ready to acquire knowledge. Further to this, 70% of the respondents said they have attended computer class for familiarizing themselves on computer applications. In addition, 86% of the respondents said they know internet. However, even if they knew what is internet, 71% said they could not be able to use internet for information search. This is evident from Table 4.7 below.

The respondents' ability to search for information via internet is shown in Table 4.7

Table 4.7 Ability to Search Information via Internet

Ability to use Internet	Frequency	Percentage
No	71	71
Yes	27	27
No Response	2	2
Total	100	100.0

From this table 71% of the respondents could not be able to search information despite majority saying they have attended classes and that they know internet. As

hypothesized and from the first objective, respondents could not be able to use the knowledge they had to search for information via internet thus poor or inadequate information accessibility.

When asked to give a detailed answer on why they were not able to search information, the respondents cited inadequacy in knowledge in computer applications skills. This reaffirmed the hypothesis set from objective one that indeed that learners level of computer skills influence information accessibility.

Table 4.8 shows respondents asking assistance when unable to use computer

Table 4.8 Asking Assistance when Unable to use Computer

Asking questions	**Frequency**	**Percentage**
Yes	60	60
No	16	16
No response	24	24
Total	**100**	**100**

Table 4.8 shows that 60% of the respondents asked assistance when unable to use computers, 16% did not ask for assistance, 24% did not respond to the question.

Respondents' poor knowledge in computer applications were confirmed when a question on features which they were able to search was asked. Respondents were given even examples to choose from (sports, financial, educational) from question 8 but they could not be able to identify clearly or even single out what they were able to search for in the internet. Consequently, they could not respond also to any benefits

they accrued from the internet. It is thus indeed true that these respondents had poor computer skills which hinder them from the information accessibility.

General ability to search for information of the respondents is presented in Table 4.9

Table 4.9: General Ability to Search Information

Ability to search Information	Frequency	Percentage
Excellent	2	2
Very Good	4	4
Good	20	20
Poor	66	66
Very Poor	6	6
No Response	2	2
Total	**100**	**100**

Table 4.9 above shows that respondents have poor ability in search for information. This can be attributed from the poor computer knowledge

4.5 Learners Level of Practice in Computer Application Skills

The extent to which learners experience (level of practice) in computer application skills influence accessibility of information was measured. Table 4.10 shows number of hours spent daily on computers. Table 4.11 shows how often respondents use computer. Table 4.12 shows duration of computer/laptop use.

Table 4.10 presents respondents number of hours spent daily in computers.

Table 4.10: Number of Hours Spent Daily in Computers

Hours Spent Daily	Frequency	Percentage
0hrs	29	29
1-2	26	26
3-5	36	36
6-8	9	9
Total	**100**	**100**

According to Table 4 .10 above, 29% didn't spend any time using computers, 26% used 1-2 hours, 36% used 3-5 hours and 9% used 9 hours. Of interest to note was the 55% of the respondent who used between 0-2 hours. This explains the lack of experience noted in the research which again emphasizes why the respondents had challenges in accessing the information. An adage goes that practice makes perfect. It is quite clear these respondents lack experience hence the extent to which their experience influenced accessibility was very clear as they were unable to use the system and internet to search information.

Table 4.11 below shows how often respondents use computers.

Table 4.11 How often Respondents use Computers.

Scale of use	Frequency	Percentage
0	10	10
1	10	10
2	34	34
3	18	18
4	10	10
5	10	10
No Response	8	8
Total	**100**	**100**

This research has established that respondents rarely used computers. From Table 4.11 above, it is only 10% who often used; the others rated themselves on poor scale. This puts their experience into question and this becomes a contributory factor to their ability to access information. The respondent's lack of experience contributed to their inability to access information as noted in what was hypothesized by second objective and sought to establish the extent to which learners experience influenced accessibility to information.

Table 4.12 represents the duration of computer use by the respondents

Table 4.12 Duration of Computer Use

Duration	Frequency (%)	Percent (%)
Less than one year	6	6
1-2 Years	10	10
3-4 Years	14	14
No Response	70	70
Total	**100**	**100.0**

24% of the respondents confirmed that they had computers while 70% did not respond to question on duration of time they had been using them, whereas 6% had used them for less than six years. The 76% of those respondents who said they did not have computers confirmed that they didn't have accessibility and 12% of the others were ignorant of the same. In addition, when asked if they would like to own computers, 55% said they would like to have one whereas the rest remained silent.

4.6 Learners Attitude towards Computer Application Skills

The extent to which learners attitude in computer application skills influence accessibility of information was measured. Table 4.13 shows enjoyment while using computer. Table 4.14 shows general interaction with the computers. Table 4.15 shows if computer knowledge and ability to search information via internet helps in academic performance. Table 4.16 shows rating of fellow colleagues.

Enjoyment while using computers of the respondents is presented in Table 4.13

Table 4.13 Enjoyment while Using Computers

Using Computers	Frequency	Percent
Very Much	35	35
Much	35	35
Fairly	18	18
Not at all	8	8
No Response	4	4
Total	**100**	**100**

According to Table 4.13 there is a balanced response in the enjoyment level shown by the respondents while using computers. This shows that this is a group that can actually learn on computers use if subjected to the same

Respondents' general interaction with computers is shown in Table 4.14

Table 4.14: General Interaction with Computers.

Interactions	Frequency	Percent
Excellent	17	17
Very Good	5	5
Good	22	22
Poor	46	46
Very Poor	6	6
No Response	4	4
Total	**100**	**100**

It is evident from Table 4.14 above that the respondents had poor interactions with computers. More than 50 % had poor interactions and only 22% could be said to have a good interactive atmosphere with the computers. It was the respondents who gauged themselves and felt this way. They were yet to develop confidence and hence attitude to them in computer use was also poor. Statistically this translated to the objective 3

which sought to establish the extent at which attitude influence the accessibility to information.

In spite of respondents enjoying computer use, they had poor interaction with the same and were unable to search the information. If this attitude could be improved, the search would be positive as the respondents showed some willingness to learn and acquire knowledge.

Table 4.15 below shows computers help in academic performance of the respondents

Table 4.15 Computer Knowledge and Ability to Search Information Helps in Academic Performance

Helps in academic performance	**Frequency**	**Percentage**
Yes	84	84
No	8	8
No response	8	8
Total	**100**	**100**

When asked if computer knowledge and ability to search information helped in academic performance, respondents were quickly to agree by an overwhelming majority of 84%.This is shown in table 4.15 above. It was therefore clear that respondents knew how much they could gain if they had the knowledge in computer applications which they lacked. This rekindled the first objective which sought to establish the extent to which learner's level for computer skills influence accessibility

to information. It was quite clear if this knowledge was given to the respondents, definitely it could have a positive contribution to their academic work.

Respondents' rating of fellow colleagues is presented in Table 4.16

Table 4.16 Rating Fellow Colleagues

Rating colleagues	Frequency	Percentage
Very Inadequate	44	44
Inadequate	42	42
Adequate	12	12
Very inadequate	2	2
Total	**100**	**100**

Table 4.16 above shows respondents' attitudes towards their fellow colleagues. In this regard, 44% and 42% of the respondents termed them as very inadequate and inadequate respectively. This shows that they observed each others' capability to use computers and found that this was not also satisfactory. This limited accessibility to information since a respondent who did not know how to access the information could not rely on fellow colleagues who are termed as inadequate in the use. This reaffirmed the hypothesis set by objective 3 that learner's attitude influence accessibility to information.

4.7 Accessibility of Information by Distance Learners

Factors that influence use of computers in accessibility of information by distance learners formed a key theme for this study. The questionnaires filled by the respondents had questions on the extent to which learners' level of knowledge (computer literacy), learners' experience (computer practice) and attitude in computer

application skills influenced accessibility to information. The results were organized into the following subsections: Learners level of computer knowledge, learners' level of experience and learners attitude. On learners level of computer knowledge the study found that of all the respondents 76 % had no computers and only 24% had personal computers. 70% did not respond to having used computers while 6%, 10% and 14% had used computers for less than one year, 1-2 years, 3-4 years respectively. 70% had background computer knowledge.

On learners' level of practice the study found that 29% of the respondents spent 0 hours daily on computers while only 9% spent 6-8 hours daily in computers. 10% never used computers while 8% did not respond to this question.

On learners' attitude, 35% of the respondents enjoyed using computers very much while 8% did not enjoy using computers at all. An overwhelming number of learners, 84% were positive that computer knowledge and ability were helpful in searching information via internet. 8% thought it was not helpful.

From the foresaid, the level of learners' knowledge, experience and attitude did not measure to the expected level for optimum accessibility of information. This means that, distance learners have not been able to fully use the computer as a self contained teaching machine, to present individual lessons, to organize instructions and to track their records and progress or describe computer application that facilitates the delivery of instruction including electronic mail, fax, real time computer conferencing and World Wide Web applications. There is therefore need for distance learners to embark on achieving the necessary computer knowledge, gaining computer

experience and having the correct computer attitude towards use of computers. This would make it possible for them to access the right information at the right time.

4.8 Correlation Analysis

Correlation analysis shows the strength of the relationship of variables. This analysis is shown in the cross tabulation table and correlation table shown below.

Table 4.17 Cross Tabulation Table

		Q.7 Are you able to search any information		
		Yes	**No**	**Total**
Q.3Do you have any background knowledge of computer use	**Yes**	7	69	76
	No	20	2	22
Total		27	71	98

Cross tabulation Table 4.17 above compares the knowledge respondents had in computer and their ability to search information. It is clear from the table that respondents lacked good computer knowledge hence their inability to search information. This was done by cross tabulation of questions 3 and 7 of the questionnaire. Only 2% of the respondents did not respond to this question. From this table thus, computer knowledge is important as far as search for information is concerned. Answer to the two questions shows there is very strong association in that the learner who does not have any knowledge in computer use have the ability to search for information difficult. This is again in line with the analysis indicated that

those who frequently use the computer are more knowledgeable in information search.

Table 4.18 Correlations

		Q.4Are you comfortable when using computers	Q.9 Indicate your general ability to search for Information
Q.4Are you comfortable when using computers	Pearson Correlation	1	.766**
	Sig. (2-tailed)		.000
	N	92	92
Q.9 Indicate your general ability to search for Information	Pearson Correlation	.766**	1
	Sig. (2-tailed)	.000	
	N	92	96

**. Correlation is significant at the 0.01 level (2-tailed).

Correlation analysis shows the strength of relationships of variables. In this case it is evident that the respondents are comfortable when using computers. Then this has a strong association with the general ability to search for information. This is shown in the correlation Table 4.18 which puts the strength at 0.766 at 90% confidence intervals. It is thus evident that when their attitudes are strong their ability to search information is also high and the reverse is also true.

4.8.1 Learners' Level of Knowledge in Computer Application Skills and Accessibility of Information

This analysis compared the knowledge respondents had in computer and their ability to search information. It is clear that respondents lacked good computer knowledge hence their inability to search information. This was done by cross tabulation of question 3 and 7 of the questionnaire. Only 2% of the respondents did not respond to this question.

4.8.2 Learners' Level of Experience in Computer Usage and Accessibility of Information

From this table thus, the knowledge is important as far as search for information is concerned. The two shows a very strong association in that if the learner does not have any knowledge in computer use, the ability to search is also difficult. This is again in line with what the analysis indicated that those who frequently use the computer are more knowledgeable in information search.

4.8.3 Learners' Attitude towards Computer and Accessibility of Information

In this case, it is evident that if the respondent is comfortable when using computers then this has a strong association with the general ability to search for information. This is shown in the correlation table 4.18 which puts this strength at 0.766 at 90% confidence intervals.

4.9 Chapter Summary

This chapter has focused on analysis, presentation and interpretation of data collected from the field. Questionnaires collected data on the influence of the level of knowledge, influence of experience and influence of attitude in computer application skills on accessibility of information. The return rate of the questionnaires was 100%. Questionnaires applied open ended questions and likert scale with a range of between one and five to show the level of agreement by the respondents. Content analysis was used on the information given.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of this research was to establish the factors influencing use of computers in accessing information by distance learners at the University of Nairobi. Computers and internet have opened up unprecedented communication. Computers have opened up new frontiers for its users particularly the scholars. This chapter examines summary of research findings, discussions of the findings, conclusions and recommendations. It finally suggests areas of further study.

5.2 Summary of Findings

This research aimed at establishing the factors influencing use of computers in accessing information by distance learners at the University of Nairobi. The factors considered were learners' level of knowledge in computer application skills, learners' experience in computer usage and learners attitudes towards computers.

On learners' level of knowledge in computer application skills and access to information it was found that respondents could not access to information despite majority saying that they had attended computer classes and that they knew internet. As had been hypothesized and from the first objective, respondents could not be able to use knowledge they had to search for information via the computer resulting to poor or inadequate information accessibility.

On learners' experience in computer usage and access to information the research study found that respondents used computers rarely and had no practice. This put their

experience into question. The respondents' lack of experience contributed to their inability to access information, as noted in what had been hypothesized by the second objective which sought to establish the extent to which learners experience influence accessibility to information.

On learners attitude towards computers and access to information it was found that the respondents were yet to develop confidence in handling and using computers. The poor attitude in computer use resulted to poor interaction with the computers and thus poor accessibility to information. Statistically this translated to objective three which sought to establish the extent to which attitude influence accessibility to information.

5.3 Discussion of Findings

Ability to use computer has helped and improved the level of academics as far as research and search for new ideas is concerned. The evidence adduced against those who dismiss this is not only overwhelming in this research but also watertight. Internet, a term that is very much in vogue, was in past a vague and to some a terrifying concept. Today it is a "buzzword" which has given rise to a global culture that is threatening to obliterate regional and local eccentricities, promoting instead a set of universal values and images that make the world one huge village.

On learners' level of knowledge in computer skills and access to information, it was noted that majority are ready to learn and are not hesitating to ask questions and seek guidance when they face difficulties while using computers. This is evident from tables 4.8 and 4.9 where respondents said they asked questions and that the ability to gather information from the internet could help in their academic improvement. The research heard and felt the hopelessness, discouragement, confusion and the feeling of

deception experienced by the respondents when elaborating their thirst for computer knowledge and willingness to own a laptop and be able to use it. An essential aspect that must be very clear from the outset is that the users at all cost should shun from using the internet to extract damaging materials, which depict moral decay in the society. By ignoring, flouting or refusing to comment on this and indeed ridicule it, our society may be undermining its own moral legitimacy. Obviously, this way of acting would be immoral and illegitimate and will be a temporary effort of trying to improve efficiency in academics doomed to failure.

On learners level of experience in computer use and level of information, despite the damages, lack of computer knowledge might have caused and exposed its users to, respondents have not lost hope and look forward to utilize these services as sources of learning. Responding to a general question on internet, some of the students said that though they could not be able to fully search information via internet they preferred it because it helped in solving problems more easily than the complex textbooks and hence saved time. In addition, they were quick to note that if they could own a computer/laptop, the experience in computer applications and accessibility to information could be improved.

On learner's attitude towards computers and access to information, the research has noted with concern that there is a strong influence on the ability to search for information attributed by the student's attitude. This is from the strong positive correlation of 0.766 seen from the analysis. In addition, cross tabulations have shown similar trends where background knowledge influences search capabilities

The research has therefore noted in general that computer skills is a concept lacking in distance learning students which has an influence on their perception and attitude in search for information. Further, lack of exposure to computer also affects them. Their colleagues are able to note this and rate each other poorly in computer applications.

5.4 Conclusions

In a healthy and growing nation, citizens should be guaranteed unfettered access to information especially in matters that directly affect their academic work and well-being in general. However, if the learners have poor knowledge in computer use, poor interactions and non-supportive attitude towards computers, this cannot be achieved. The world is learning to read signs as far as the use of internet is concerned and from the analysis, it can be conclusively reported that:

- ❖ The students' level of computer application skills influences the accessibility to information.
- ❖ Lack of experience in computer usage has a negative effect on the distance learners' ability to search for information.
- ❖ On learners attitude towards computers have a great impact on distance learners attempts to search information via the internet.

5.5 Recommendations

The research makes recommendation geared towards enhancing use of computers in accessing information by distance learners. This is because computer and internet is indeed one source of reference material and research centre which is ever growing and should be utilized effectively.

To improve on learner's level of knowledge in computer use and skills for access to information, the researcher recommends:

- ❖ Teaching and training of computer should start at an early age probably at primary level to improve on academic and research work.
- ❖ Students to be taught how to access information from the internet

To improve on learners' level of experience in computer use and skills for access to information the researcher recommends:

- ❖ Make library accessible via online catalogue to improve information accessibility.
- ❖ Costs of using internet service be reviewed by the stakeholders to attract more people in search of knowledge.
- ❖ The government to have deliberate efforts via the concerned ministries for students to access a personal computer/laptop by introducing cheap prices or loans for the same.
- ❖ University of Nairobi needs increased and cheaper access to bandwidth especially for distance students. However to be fully effective, this must be complemented by development of content and methodology appropriate to enhanced learning, teaching and research by acquiring the necessary computer knowledge.

To improve on learners' attitude in computer use and skills for access to information the researcher recommends:

- ❖ Everyone should value computer as a source of information. Everybody should watch out not to be a victim of the bad part of the new technologies. There are always winners and losers in any technological revolution.

5.6 Further Areas of Research.

A research can be conducted to establish the influence on use of computers to access information by distance learners.

There is also need to determine the factors that influence use of computers to access information by regular students at the University of Nairobi.

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APPENDICES

Appendix 1

LETTER OF INTRODUCTION

Lucy Wanjeri Kamau

P.O. Box 837-0100

Thika.

0728036478

Dear Sir/ Madam,

I am a Student at the University of Nairobi pursuing a degree course in Master of Distance Education. I am carrying out a research entitled 'Factors Influencing use of Computers in Accessing Information by Distance Learners, at the University of Nairobi.'

I request you to respond to the attached questionnaire to enable me to collect the relevant data in the study I am conducting. All the information you will give will be treated with confidentiality and will be used for study purpose only. Kindly give honest and objective responses to all the questions.

Yours sincerely,

Lucy Wanjeri Kamau

Appendix 2

STUDENTS' QUESTIONNAIRE

Kindly respond to all questions by filling in blank spaces or by use of a tick (√) in the brackets.

A. Demographic Data:

i. Gender – Male ☐ Female ☐

ii. Marital status

a) Single.....b) Married.....c) Divorced.....d) Separated.....

iii. Age bracket in years

a) Below 20 ..... b) 21-30.....c) 31-40..... d) 41-50.....e) 51-60.....

f) 61-70.....g) 71 and above.....

B. Research Questions.

1. Do you have a personal computer/Laptop?

a) Yes.....b) No.....

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

a) less than an year... b) 1-2 years.....c)3-4 years....d) 5 years and above....

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

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

a) Yes.....b) No.....

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

a) Yes.....b) No.....

4. Are you comfortable when using computers?

a) Yes.....b) No.....

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

a) Yes.....b) No.....

6) Do you know what is internet?

a) Yes.....b) No.....

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

a)Yes.....b) No.....

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

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

a) Yes.....b) No.....

8(i) Name the most common features you are able to search through internet (eg sports, financial issue, educational e.t.c).If more than one, kindly indicate them in order of capability and ease while searching.

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

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

a)Excellent.....b)Very Good.....c) Good..... d) Poor....e)Very Poor.....

10. Do you enjoy participating while using computers?

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

11. How is your general interactions with computers?

a) Excellent.....b)Very Good.....c)Good..... d) Poor....e)Very Poor.....

12. According to you, how would you rate your fellow colleagues (students) ability to access information through computers?

Very adequate ( ) Adequate ( )

Inadequate ( ) Very inadequate ( )

13a. How often do you use computers? Use the scale below to show the frequency. 5 means very often while 0 means never.

13. b Approximately how many hours do you spend in computers

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

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

Yes ( ) No ( )

14(ii). Give reasons for your answer in (14.i) above

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15. Suggest ways through which your experience in computer applications on accessibility to information can be improved.

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.....

.....

END.

Thank you for your participation. Once more, whatever responses/ information provided herein will be treated with utmost confidentiality.