REMOTE ACCESS OF E-RESOURCES: A CASE OF UNIVERSITY OF NAIROBI-DISTANCE LEARNING

BY:

KENANI MARK NYAKWEBA

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DECLARATION

STUDENT

I, the undersigned, declare that this project is my original work and that it has not been presented in any other university or institution for academic credit.

Signature …… Date ……

KENANI MARK NYAKWEBA

P56/62544/2013

SUPERVISOR

This research project has been submitted for examination with my approval as university supervisor.

Signed …… Date ……

Name: Mr Samuel Ruhiu

School of Computing and Informatics

University of Nairobi

DEDICATION

I am indebted to my Dad Mr Samson Nyakweba Nyameyio and Mum Mrs Miriam Nyarangi Nyakweba, for taking care of me and supporting me both financially and spiritually throughout my life.

I dedicate this work to my wife Hellen Kinya who through her support, understanding and patience, I was able to overcome what otherwise stood as an insurmountable huddle.

To my lovely sons Lebronne, Jayden and Eiden; I dedicate this with all my love to you.

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ABSTRACT

This study was carried out to investigate remote access of e-resources by distance learning students of the University of Nairobi. Five research questions were raised. The study sought to find out the types of e-resources and services available for use by UoN DL students, their sources of e-resource, their search pattern, how they evaluate and filter the quality of e-resources they use. The research adopted survey method; the instrument used for data collection was the questionnaire. Proportionate stratified random sampling was used to select respondents for this study. Data collected from the research questions were analyzed using frequency tables, cross tabulation and simple percentages, Pie Chart and Column Charts. The study discovered that majority of the students are aware of the e-resource which they frequently use. They are also aware of e-journals, e-books and electronic theses and dissertations; majority of the DL students in University of Nairobi are extraverted and enthusiastic by the results and amount of information they get remotely. This behavior affects their ability to get the required material; there is no significant difference among students of different academic levels of concerning the challenges faced in searching for e-resources; majority of the students use Google and other search engines to look up e-resources. The study concluded that DL students in the University of Nairobi have realized and have come to terms with the web knowing fully well that it is packed full with e-resources that they need for their academic advancement and research productivity. However, many of the DL students have developed poor remote e-resource search making it difficult for them to locate the right information. It is recommended that more awareness should be created on the availability on the repository and how to effectively search for information therein; the University Library should intensify the existing training programme for DL students on how to effectively search for e-resources.

TABLE OF CONTENT

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

UON -	University of Nairobi
DL –	Distance Learners
CD -	Compact Disk
CD-ROM -	Compact Disk Read Only Memory
Df -	Degree of freedom
e-mail -	electronic mail
ETD -	Electronic Theses and Dissertations
ETS -	Educational Training Services, USA
FTP -	File Transfer Protocol
HTML -	Hyper Text Markup Language
ICT -	Information and Communication Technology
ICTL -	Information and Communication Technology Literacy
ISP -	Information Search Process
JSTOR -	Journal Storage
ListServ -	List Server
MIS -	Management Information System
MS-Word -	Microsoft Word
n.d. -	not dated
n.p. -	not published
RARE -	Remote Access to Research in the Environment
OPAC -	Online Public Access Catalogue
PDF -	Portable Document Format
SMS -	Short Message Service
www -	world wide web

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In the present society, Information Technology is developing at an amazing speed; it has eventually become a part of our day-to-day life, hence providing numerous benefits and values in various fields. Technologically, there is increased thenumber of information communication technologies applied to help humans deal with difficulties and problems. As a result, the growth of Information Communication Technologies (ICT) and soaring computer skills of students enables new enlightening learning forms to appear in present markets (Georgiev, Geirgieva & Smrikarov, (2004)). Recent decades have witnessed the unparalleled growth of Internet and resultant transformation in the learning landscape (Choo, C.W. Detlor, B. & Turnball, D. (2000)).

Deserting most of the weaknesses that exist in teacher-student contact and the direct feedback that the old-style classroom education has, the old-style education mostly relies on the condition that both teacher and student must substantially get involved (Georgiev *et al*., (2004)). Electronic learning (e-learning) is one of the momentous new learning forms that influence our usual study. A wide range of adopting web-based tools has risen e-learning trends in education worldwide (Choo et al., (2000)).

Researchers and most government agencies are emphasizing on students to apply technology efficiency through ICT literacy. This literacyincludes using technology as a tool for research, organizing, evaluating and communicating information and the use of digital technologies for accessing, managing, integrating, evaluating and creating information to efficaciously function in a knowledge world(Chicago: American Library Association, (2010)). Additionally, with the number of modern students increasing yearly, institutions ought to reevaluate how, especially at what time and space, they give learning opportunities for the students. In earlier days, universities and other institutions that traditionally targeted these students by providing online classes and remote accessibility of e-resources.

1.2 Relevance of Information to Academicians

The importance of information in an educational environment cannot be over emphasized. Remotely accessible online e-resources, as asserted by Gbaje (2007) is that which provides for access to relevant, current and updated information for teachers, learners and researchers development. Mostly academicians in our societies are viewed as knowledge propellers.

Higher education is rapidly changing with the advent of technology. Shuling (2007); in recently, electronic information has progressively become a major resource in most institutional libraries. Maji detail (1999) claimed that technological progressions haveopened up new prospects for the creating, storing, accessing, distributing and presentation of information. Brophy (1993); stated that benefits of electronic information resources as compared to print ones include: speed, ease of use, ability to search a couple of files simultaneously, ability to save, print and redo searches, more frequent updates and ability to access e-materials remotely (more advantageous to distant learners).

Academicians now live in a better-resourced world. The rapid advancement of Information and Communication Technologies (ICT's) has brought a radical change in the information scenarios world-wide; hence,rise to some options to users' community, to handle varied information sources expediently and effortlessly (Swain and Panda (2009)). Dadzie (2005) emphasized the importance of online information resources to academicians by stating that online information resource could be accessed remotely by users that are restricted by geographical location and financial element, access to current e-resources and providing extensive links to additional e-resources or related content there in. These can be stored electronically hence saving space and reducing the risks of data loss, theft and damage. Academicians are encouraged to become information knowledgeable, life-long learners to handle challenges of the fast-pacing society, knowledge explosion, technological progression, information culture revolution and new academic and occupational opportunities. Because of the Importance of information searching behavior for academicians, every institution of higher education needs to facilitate a culture of information searching and improving the utilization of resource

support, especially in library and documentation services. With information changing rapidly and readily accessible technology, academicians ought to upgrade their knowledge and skills to cope with the rapid increase of knowledge (Eskola, (1998); Griffiths& Brophy, (2002);Miculincer,(1997)).

1.3 E-Resource Access Behavior

E-Resource access behavior encompasses information searching as well as the totality of other unintentional or passive behaviors such as encountering information, as well as purposive behaviors that do not involve searching and avoiding information (Case, 2002). Based on the information behavior model developed by Wilson (1997), he postulated that the model of information seeking behavior needs to include at least the following elements:

1) Information need and its drives, i.e. factors that give rise to an individual's opinion of need,
2) Factors that influence individual's response to the opinion of needs.
3) Lastly, the processes or actions involved in the need-based response.

Taylor (1991) proclaimed that information being a product of certain element of the information use in environments. The kind of problems seen as important and normal by this set of individuals, constraints and opportunities of typical environments in which any sub-group orgroup of this set of people operate or work, and the conscious or unconscious assumptions made as to what institutes a solution or better said are solutions to problems and what makes e-resources useful and valuable in their contexts. From the above, information searching behavior can be said to be the totality of human behavior as related to sources and channels through which information is acquired and disseminated, including both passive and active resource seeking and use.

1.4 Remote Resource Seeking Behavior

Remote resource-seeking behavior begins immediately someone realizes the presence of an information need and essentiallyusers deem it fulfilled after the need has beenmet (Krikelas1983). The information seeker turns to informal and formal sources of information and is eventually satisfied or dissatisfied with the final result (Wilson, 2009). Similarly, it can be worth-while defined as an individual's way and manner of searching, gathering and sourcing for information for personalized use, knowledge update and development. Fairer-Wessels (1990:361inKakai etal. (2004)) referred to it as a way people search for and utilize resources. Remote resource-seeking behavior refers to those activities an individual engages in when identifying his or her own information need, searching and retrieval for such e-resources in any way, and using or transferring that e-resource. About this study; hence, it can be deduced that remotee-resource-seeking behavior is the purposive searching for information as a result of a need to satisfy some or entire goals. In the process of seeking for research and assignments, the person may interact with manually available information systems such as newspaper or a library resource or with computer-based systems, for example, the Internet-world wide web.

1.5 **E-Resource Access Theories**

E-resources remote access is the process of attempting to obtain information in technological contexts regardless of where and when the individual is geographical located. Some varieties of theories of e-resource access behavior e.g. (Zipf's Principle of Least Effort (1935 [1969]), Elfreda Chatman's Life in the Rounds (1986)) seeked to understand the processes and procedures that surround information searching, Brenda Dervin's Sense-Making (1983, 1996), Foster (2005) and Kuhl that (2006), declared that e-resource searching has generally been accepted as dynamically andnon-linear way. People experience e-resource search remotely and access as a process of an interplay of thoughts, feelings and actions (Kuhlthau, (2006)).

1.6 E-Resource Access Systems, Resources, and Services

E-Resource access systems are highly defined as elements of inter-related components that areworking together in collecting, retrieving, processing, storing and disseminate e-resources over a given network. Also consists of the networking of all communication

channels that are used within a given organization. E-material access systems occupythe Centre most stage of e-resource searching in the online environment.

Remotely access e-resources as emphasized by Gbaje (2007) are relevant informing resources and communication technology that aids in accessing of relevant and most current e-materials to enhance learning, teaching and research development. Remotely accessed e-resources encompass potentiality of allowing institutions and researchers to share individual research output with a given global community. Remote accessible e-resources are capable of enhancing research and also lifelong learning process through the establishment of constant and continuous access to shared e-resource archival collections, as well as access to Electronic Thesis and Dissertations (ETDs) for the entire global community.

1.7 Remote Resource Search and Access

The challenge faced by education in the twenty-first century is preparing students on the use of e-resources in their learning processes and workplaces, in their personal lives, as responsible and accountable citizens. This is clearly elleborated in the Report of the ALA Presidential Committee on Information Literacy that states as follows:

"Such are structuring of the learning process will not only enhance the critical thinking skills of students but will also empower them for lifelong learning and the effective performance of professional and civic responsibilities."

Learning process is changing from the assembly-line based environment as earlier in the industrial age offered through textbook teaching to the data-rich current environment of the digital information age offered by e-resource-based learning. In response to this change, e-resource centers have to design new ways in which users can eventually maximize the use of these e-resources with the purpose of gaining access to the information there in as required. In searching for an e-resource, basically four steps are involved as stipulated by Kulhthau (2004). The processes are as follows:-

1. **Analyze the topic:**-To start a productive search, it is always good to first analyze the topic at hand. The topic should be broken down into main

concepts; relevant terms and phrases should be equally identified. A list of terms or phrases can also be created as well.

2. **Choose searching tool:** - Always begin the searching process with relevant e-resource for the chosen topic. After thoroughly searching this resource, move on to other available-resources to find different, broader and more items. Examples of these search tools include WebPages, citations, Full text, Journal articles, etc.
3. **Narrow and Broadening your Search:**-For fewer and precise outcome, it is good to narrow your search. The emphasisin using a more specific search terms and phrases is advised. If the search tool being used includes indexes or a single index, use it to help pick most specific terms to use for searching, the use of hyperlinks if any is provided for. For lesser precise results, one can as well try out the broader search. Use lesserspecific and alternative search terms and phrases too. Try out using the "OR/AND" searches. Try to change search tools to achieve needed results. Try out the broader search. Use less specific and alternative search terms and phrases. Try out using the "OR/AND" searches. Try changing search tools to achieve needed results and more specific ones.
4. Finally, trying other searching tips such as;-
    - Always checkout for help or searching tips information when using a non-familiar search tool. As they will mostly suggest the kind of search operators, you to use for the same.
    - Be aware that most searching tools have a list of stop or end words e.g. the, and, or, in, etc. they are usually left out unless purposely inserted.
    - Most databases offer indexes for their users. Check out for the terms and phrases before engaging in searching.

E-Resource access, on the other hand, boarder sensuring that e-resource users have the opportunity to get and use e-resources therein. Therefore, ease of access to the informational materials by users should be safeguarded regardless of their geographical location, position or status in the society. Access to e-resources remotely is paramount on

almost all users' minds. With the dawn of technology giving birth to the Internet or World Wide Web, it has been known for its fruitfulness regarding its availed information content. It eventually promoted learning and allowed universal remote access to e-resources. It has allowed students to broaden their academic boundaries, access to information, and communication with others by academics. The Internet has given remote access to educational databases and websites that could make a user perverse and deviant as the case maybe. Also, the World Wide Web and internet as a whole can give access to up-to-date digitized and uploaded research works and other materials of a University remotely. Therefore, it is pertinent noting that remote access to e-resources requires literacy skills by the researcher, offers acquisition of required skills and assists the e-resource seeker to make uninformed and precise decision as required at that particular moment in time, thereby making the right choice in return.

1.8 **Statement of Problem**

Information is source vitally needed by all students to perform well in their academic pursuit. The web is used to access remotely relevant, useful and up-to-date e-resources from different fields of learning all over the world. Use of the web in no doubt, enhances quality research, access to a variety of e-resources and current informational resources on the web remotely. Education requires studies that uncover how to use fully technology for the benefit of students and researchers as a whole.

Remote access of e-resources is identified as an important information resource for students. Having acknowledged the importance of remotely accessible-resources, the management of the University of Nairobi has invested so much to ensure that students have access to library learning e-resources remotely and on site by positioning Internet access-points and hotspots in the Libraries and within each and every UoN Campuses at large.

The researcher wanted to observe, whether many students are faced with the challenges brought about by the entire process of accessing materials remotely and use of the same as supported by most of the scholars. Abdulkadir (2011), Challenges encountered

mostly is the use of relevant search terms and phrases, lack of e-resource availability awareness, inadequate search techniques applied by students and some students lacked knowledge on how to use the phrase and word combination to get the most relevant information. Hence, Abdulkadir (2011) statement that students spend very long hours in the quest for e-resources. It is important to note that a shift from print to electronic resources requires IT skills for its effective use. It was observed that many students in universities cannot use the web and other ICT facilities independently. Savolainen and Kari (2001) stated that skills to search for and retrieve information are necessary because there is often a wide range of relevant documents to do with the same proposed search.

In light of the above, this study investigates how UoN DL students remotely access e-resources, e-services, search techniques the students apply at various levels of education, and formats in which the prefer the resources to be presented the campus libraries.

1.9 Research Questions

The following are the research questions of this study.

1. What library e-resources are available remotely to DL students in the University of Nairobi?
2. What type of library e-resources and services is usually accessed remotely by the University of Nairobi DL students?
3. What searching techniques do the University of Nairobi DL students apply in remote search and use of library e-materials?
4. What format do University of Nairobi DL students prefer while accessing e-resources?
5. What search techniques do UoN DL students apply while searching e-resources remotely?

1.10 Objectives of the Study

The following are the objectives of this study.

1. To identify the types of e-resources and services that is available to the University of Nairobi DL students remotely.
2. To discover the techniques used by University of Nairobi DL students in search and use of e-resource remotely.
3. To determine what formats of e-resources University of Nairobi DL students prefer while accessing the e-resources.
4. To determine what level of education among University of Nairobi DL students access what e-resource and e-service frequently for their use.

1.11 Significance of the Study

Undoubtedly the findings of this study would be of great benefit to the students and the University and its authority at large. This wouldimprove upon the current techniques and behavior exhibited by DL students while using e-resources. This study is essentially timely because it will help users to improve their remote searching and use skills by providing them with the requisite knowledge and skills in order to effectively meet their information needs. This research work intends to add to the existing researches carried out on remote access and use of library e-resources. This study is also very important to librarians in their pursuit for providing effective access to their e-resources by making remotely accessible e-Resources and Services that are tailor–made to users' needs. It is also expected that it would be of help to policy makers as well, and all those in charge of information and communication technology in education by closely studying models involved in remote search and use hence advice in designing of better systems that would greatly enhance and support remote access of learning materials. Lastly, this research work can be of great importance to researchers who will plough this area of research to improve upon remote accessible e-resource provision.

1.12 Scope of the Study

This study covered the University of Nairobi DL students only, given the nature of this research was based on finding out what learning materials are available, accessed and

used by Distance Learning students, It did not cover the entire university since the study wanted actually tofilter out resources accessed by use of IT devices remotely and not on-site; Therefore study on DL students was ideal for they normally carry out studies while in a diverse geographical locations.

1.13 Limitation of the Study

The study was limited to the University of Nairobi Distance Learning students. It did not cover the entire University population, due to time, its size and the cost implication of carrying out such research work, secondly; while a large-scale survey in a particular university may offer insight into the preferences of its learners, hence it may be limiting in its generalizability. The results may be representative of the region or the university in which specific participants are located.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter is forecast on subsequent studies made on e-resources role in learning processes. Itbegins by giving an understanding of the Information and Communication Technology, (ICT) and the way it can be distinguished from Information Technology (IT), remote access e-resources and services, remote access systems in academically fit institutions, searching strategies involved, ICT abilities in remote searching, e-resources remote access and some behavioural search theories associated. This chapter also discusses the theoretical review and the conceptual framework considered, and the one adopted.

2.1 Information and Communication Technology (ICT)

Information and Communication Technology (ICT) has been ininexistence since the early 1980s, as it was popularized in the United Kingdom (ICT). Information and Communication Technology (ICT) can be differentiated from Information Technology (IT) because it stresses the role of IT, integration of telecommunications networks and computer hardware and software networks (Vignare, (2013)). The communications component is critical when designing and delivering technology that is meant to widen dissemination among communities, deepened understanding for individuals and the increased democratization of information which allows more people to provide access and disseminate information.

Communication technology involves people and telecommunications technologies that include Internet, radio, television. The media used can be of same technology but may also include telephones, computers and smaller devices, for example,smart phones, which is a combination of telephones features and computers using Internet connectivity. Increasingly, tablets and iPads have become prevalent too. ICTs like any technological advancement are designed to cater the needs of specific group of individuals. They are formed by social forces such as the needs of those who pay for their development and the

expectations of the technologists who develop them. Most mobile devices and services in western cities are designed to meet adequately teenagers and businesspeople subsequently (Dey, Newman &Prendergast, (2008))

2.2 **Scholars' Views on E-Resource Remote Access**

Scholars face issues when defining e-resource access search and retrieval behavior as expressed by Case (2002), who explains that e-resource access search and retrieval behavior is a phenomenon on that often defies generalization and eliminates observation for the fact that it varies depending on individuals, situations, and researcher's objects of interest. A lot of it is imperceptible and takes place only in an individual's head, thus difficult to measure. Despite this dilemma, much more studies have been carried out, and articles are written examining e-resources behavior in diverse fields, resulting in a wide variety of definitions.

Haas and Meho (2001) states that e-resource access search and retrieval behavior is anexpansive term that encompasses the way individuals express their search needs by seeking, evaluating, and use of the e-resources. Another definition which is similar is provided by Jarvelin and Ingwersen (2004), who stipulated that e-resource access, search, and retrieval behavior is brought out in the act of acquiring Information from information sources. Fairer-Wessels …etal, (2004) states that e-resource access searching and retrieval behavior refers to the way people search, retrieve and use information.

As per Wilson (2000), "e-resource access, search and retrieval behavior is an intended seeking of information as a consequence fulfillment of a given need of an e-resource.

While seeking, the individual may intermingle with manual information systems such as a newspaper and other physical library materials, or with computer-based systems such as the World Wide Web.

Therefore, it appears as though e-resource access behavior involves some action being taken by a user to fulfill an information need, whether perceived or otherwise, and this culminates in an eventual interaction with some kind of information system. Information

seeking can be affected by the characteristics of the users, such as age, knowledge and experience. Information searching behavior is also encapsulated and expressed in various forms, from reading printed material, to research and experimentation.

Although e-resource searching and retrieval has a long history, remote searching and retrieval using the World Wide Web is a relatively new phenomenon. A brief inspectionofexisting literature indicates that there are very few definitions of World Wide Web e-resource accessbehavior parse.This is according to Choo etal (2005), web e-resource access behavior is the active process of finding data from the web. This simple definition arose from the notion that any activity a person engages in on the web is in a way a form of information searching. The above definition is regarded so far the closest identified. It thus informs and was used in this study to define parameters of what involves remote access, searching and retrieval of materials.

While studies of the internet as information and communication mediums are much younger, they have made tremendous enthusiasm (Turnball, and Choo,Detlor (2000)). Statements by Fourier (2006) states that over previous years, there has been noticeable growth in the number of studies on internets' e-resource access and retrieval behavior. This remarkable growth has created an increasing body of empirical research examining many aspects of user interactions with the internet. Stenmark &Jadaan (2006) confirms that a long-side development especially in technologies, researches on users' behavior when interrelating with technology has gained extensive momentums. Hider (2005) stated that "Research into remote access behavior is now under-way across a variety of disciplines. "Gleeson (2001) agreed, arguing that exact study of e-resource access and retrieval behavior of various people is well-known and major research areas being in library and information sciences, but not wholly since it is also most popular research area in multiple fields such as communication, computer sciences, and consumer science. The conceptof information searching and retrieval behavior is hence broader in scope and goes across a variety of other disciplines. Hargittai and Hinnant (n.d) suggested that researchers in specific areas e.g. library and information science have extended their ideas to areas of study in information searching research, making e-

resources access and retrieval part of a bigger part that they refer to as human beings' information searching and retrieval behavior.

2.3 Remote access Resources and Services Available in Academic Institutions

In deliberating the above about academic institutions, it will be problematic not to consider academic libraries all the same. Academic libraries serve as a linkage between the students and the Remote access System, e-resources, and Services. Therefore, it is pertinent to link these systems'-resources and services about libraries. The inclusion of ICT into the higher education system, learning has brought a lot of changes in the academician and educational world. The use of ICTs has brought an enormous shift from printed to digitized information; this has highly created an influence on present libraries and information Centers'. Gbaje (2004) proclaimed that the use of ICTs in libraries and remotely accessible e-resource Centre's has made remote access to information resources and services and file transfer extremely possible, quick and sharing of information through networking. It is important to recognize that ICT by its self-does not add much quality to learning processes, but it provides very efficient, reliable and effective information system for delivery, it, therefore, boosts teaching and other learning processes. Head librarians and the library at large have a great role to play especially in this challenging ICT era, by the provision of advanced library e-resources and services, utilization of new systems and emerging advanced technologies. An academic library is equally defined as that infrastructurewhich is attached to an academic or learninginstitution with itsprimary aim is to support the given institution in its daily responsibilitiesof teaching and researching purposesneeds of students and staff at large, also, it should be geared to meeting thevision and mission of the parent institution. Aina (2004) proclaimed that the primary purpose of the Academic Library is to support aims and objective of a university.

To reinforce further, Aguolu (1983) acknowledged six functions of universities as follows:

1. Knowledge Conservation;
2. Knowledge promotion, pursuit and dissemination of through teaching;
3. Knowledge advancement through applied, pure research, and development oriented;
4. Endowment of intellectual leadership;
5. Increase of human resources to meet manpower needs;
6. Advancement of social and economic transformation.

As emphasized and speculated by Aina and Aguolu, the primary aim and objective of academic libraries are fundamentally setup to sustain the university to achieve the above objectives efficiently and competently. Forthis to be possible, Academicians and academic libraries should acquire and put in a place remote access systems, e-resources and services for students and other researchers as a whole to have access to. In order for Academic libraries to succeed in supporting universities realize there vision and mission stated, its e-resources should not be exactly limited to especially books and journals, but should also includeother information resources such asmanuscripts,newspapers, photographs,magazines, audio-visual materials, online database,CD-ROMs, microforms, and access to the world wide web.This willenhance libraries to have the most current and updated in their disposal hence encouraging their users to come regularly to use them as their core source of information. Aguolu (2002) postulated that Academic libraries are essential part and Persil of the tertiary learning system. Additionally, he additionally proclaimed that they should not exist as the apathy of knowledge access, but as an energetic instrument of knowledge and education to enhance and promote institutions to effectively discharge the learning, teaching and research functions to students. He lastly stated that underutilization of e-resources and services of the libraries.

2.4 Remote access Resources and System in Academic Institutions

A Remote access e-resource or system can be equally defined as any medium in which data is presented, accessed, processed, stored, retrieved and disseminated remotely. Coming to terms with Remote access e-resource /systems, importantly it is very good to understanding what they representing the traditional sagacity. Furlong etal (1993) elaborated an information e-resource as an existing well keeping of knowledge and expertise. Mason (1997) stated that it in a simpler way means any sources of material developed within given organization such as memos, reports correspondences, notices papers, bulletins, etc. From outwardenvironments, it takes any format such as journals, books, pamphlets, newspapers, magazines, manuscripts, conference seminar papers, mono graphic, indexes, etc. Information e-resources are a very important tool used in the most organization and institution in organizing libraries, archives and information Centre etc. Equally, Yahaya (2000) stated e-resources as printed or non-printed collections in any given organization. Discoursing on the format in which it should take, Pritchett (1995) demonstrated hate-resource can be educational materials in any given format, whether accessible at any time or held in reservation section. Whichhave been developed either as general or special resource regarding depth or coverage.

Gupyem (1997) observed that for information resource to be effective in teaching and learning the idea of selecting relevant information resources processing the materials and making the information resources readily available for use by the intended users should be of paramount value to any library. Phyllis (1997) observed that students of all levels in their academic Pursuit will excel in their academic activities when relevant, and pertinent information is available and easily accessible to them are provided. Based on the preceding, it can be attested that information resources are the bedrock for good academic performance. This wasin conformity with Dan (1991) who remarked that the use of information resources is a key for all success in academic, political, business and social activities. Therefore, relevant resources and systems put in place for students to utilize will ensure their academic success. For the determinationof this study, the followingonline information resources and systems are examined:-

Electronic Mail: diffusionof letters and other documents from one computer to another through a telecommunications network.

Listserv: anextensively used, US-originated, mailserver program frequently used when setting up Mailing lists.

Web: Short name of the internet which is a network of a vast and upwardnumber of information servers. It covers e-resourcein many different subject areas in manyforms.

FTP: (File Transfer Protocol): a function that certifications the logging on to a remote computer host, the location of overtlyavailable files (e.g. electronic texts, programs, graphics files) and the downloading of those files to the home machine.

Online Catalog: This referees toup-to-date and complete list of alibrary holdings accessible via a computer terminal.

Electronic Journal: usually an electronic counter part to a conventional printed journal. Though some e-journals do not have a printed equivalent.

Database: file or thoroughlyorganized collection of references or unit records representing original items, published literature or other recorded material; data thatIs stored in some form (usually electronic) which can be retrieved and manipulated; a collection of information that can be organized in some way (possibly very simply) to facilitate storage and retrieval of individual items. Today this implies computer storage, but could include card indexes.

Portal: gateway to the web, which is often subject-specific, that includes a search engine, other link store relevant sites, a new service, e-mail and chat groups, as well as a list of search hits.

The following resources and systems have been observed totally with what is being put in place at the University of Nairobi.

2.5 Remote Accessible Services in Academic Libraries

Academic libraries have been developing and changing to meet up with the current trends of satisfying the needs of users. Various resources and services have been put in place to build and maintain confidence in their users. Among these efforts is the introduction of services such as remote accessed online reference service, e-mail services i.e. current awareness service; online discussion forum/group, selective

dissemination of information; bulletin boards; online exhibitions services, user education, online charging in and out of information resources, etc. By embracing the Internet Technology, Academic libraries have been able to establish their presence on the web by providing a variety of rich open source electronic thesis and dissertation (ETDs).

This hastremendously created another opportunity for Academic Libraries through their websites to reach thousands of users worldwide. Academic libraries are established to provide information resources and services to support the purpose of the university. Remote e-resource services can be defined as those activities concerned with ensuring the availability, accessibility and use of information by users remotely. However, with the adoption of Information and Communication Technology (ICT) facilities in the library, it is needful to say that Academic libraries could employ any of these ICT services like e-mail facilities, SMS alerts, and online databases and websites to showcase what the library has.

It is important to stress that with the dynamics and growth of knowledge and information, academic libraries are expected to provide manual and automated/ online information services to meet the ever-growing needs of their users. Based on this, Fabunmi (2004) cautioned Academic libraries to work harder to provide information services that are timely in its delivery and easy to understand and use and is delivered by courteous and knowledgeable staff. Also, the advent of ICTs has ushered in new dimensions and challenges in library and information services provision in Academic libraries. Today, many of the major information services that are provided manually are now available and accessible on the Internet. Interestingly, library users can now search different databases, both online-and-offline on CDs as well as online public access catalogs (OPACs) of other Academic libraries all over the globe.

Aina (2004) identified the following e-resource services as major services to be provided by Academic libraries in its quest to satisfy the information needs of its diverse user groups. These services are summarized as follows: document delivery

service, reservation services, reference services, selective dissemination of e-resources, this services have been translated from their manual/traditional form to services that can be performed remotely. It is important to know that the academic library deals with different kinds of users with diverse e-resources searching behavior. Academic libraries, therefore, need to provide new services, redesign study, and research facilities and acquire collections that will meet the needs of their users. Based on the said discussions, it is authoritativeto state that with an effective online information service put in place by academic library, members of the university community would find these essential e-resource services very valuable, and will help in achieving the key functions of enhancing teaching, research and community service upon which the university stands.

2.6 Remote Search Strategies by Students in Academic Institutions

Assimilating information technology into teaching has been promoted inacademic institutions of learning for decades. Searching e-resources on the Web have become a common learning activity in university teaching in all subject domains. Students are often required to search remotely for resources via the Web to finish and turn in their homework or research work (Fleisheretal. (2008); McGreevy etal. (2006), Tekinarslan, 2008). However, remote e-resource searching and dispensationare a complex reasoning process involving multilayeredcognitive the same timeand metacognitive strategies (Hill,1999; Marchionini,1995;Tsai &Tsai,2003; Tsai, 2009). Many prior studies (Bos, 2000; Debowski, 2001; Dias, Gomes &Correia, 1999) statedthat students often had perplexity problems and were not be able to evaluatee-resources critically.

As researchedby (Chu &Law, (2008) ,Bond, Fevyer & Pitt, (2006), Walraven, Brand-gruwel &Boshuizen, (2008), Phelps et al., (2006), Also Tekinarslan (2008) specifiedthat students and adult learnersalso had similar troubles inspecifying search terms, search results, judging e-resource sourcesand information as well as malleablethe search process.The above statement is actuallyaccepted by the researcherthat some students find it difficult to search and retrieve e-resources remotely. Tsai and Tsai (2003) projecteda three-dimensional framework foranalyzing searching strategies. Following

this study, an instrument was developed by Tsai (2009) and metacognitive domain strategies were referredas the most critical strategies to determine search out-comes. Laxman (2009) also conducted a base line study for students' information literacy proficiencies. Tsai, Hsu &Tsai (2012) more observed searching methods from a perspective of implicit versus explicit plans framework. They found reading time and evaluation plans were importantforecasters and, therefore,optionala further examination ofimplicit strategies. Alternatively, on the other hand, Laxman (2010) found that training for Internet information searching strategies was required for students' ill-structured problem solving.

Topics or contexts of remote inquiries could be one of the factors that influence students' use of remote e-resource searching strategies. Tohelp students utilize effectively and critically e-resources for learning, educators and information literacy librarians must understand how students search e-resources, profile students' e-resources searching strategies and examine the factors influencing their search strategies. However, the Big 6 suggested five strategies students can use to seek and utilize e-resources. The stages are as follows:-

1) **Task Definition**-In this step, the student determines exactly what the information problem is and the specific e-resource related to the given issues. For example,when assigning a project, a researcherneeds to know which questions ought to be answered, what kind of e-resourceis neededto answer questions, when it is due.
2) **E-Resource Seeking Strategies**-Once the problem is clearly expressed, attention turns to the range of possible e-resource sources. Searching Strategies involves making decisions and selecting sources appropriate to the defined task.
3) **Use of e-resource**-Once researcherscanlocate and access a source, they must be able to read, view, listen or interact with thee-resource and declarewhat is valuable for their particular situation. They must matchthe information that they need using notes, copies, citations, etc.
4) **Synthesis**-There structuring or repackaging of information into one word

different formats to meet the necessitiesof the task is synthesis. Fusioncan be as simple as relayingspecific fact. Synthesis can be equally complex involving several sources, a variety of media orformats in which they are presented, and the effective communication of abstract ideas. This is where the real learning takes place as new information is brought in and links are made to pre-existing knowledge.

5) **Evaluation**-Evaluation determines how effectively and efficiently the information problem-solving process was conducted.

Other models of e-resource searching be it remotely/Online or offline have been considered in this study, some of which are that of Taylor and Chrome(Question-Negotiation and Information Seeking model), Dervin's Sense making Metaphor, Ellis Model of Information Seeking Behavior, and Kulthau's Model of the Information Search Process. All these models are designed to assist librarians and information service provider, design and implement information systems having carefully, observed and studied the e-resources searching pattern of students to ensure that they come up with better search results. As common with all the models stated, it was noted that search strategies are the crux of the matter, students search strategies need to be enhanced to come up with better search result search time they engage themselves in an information search process.

2.7 Information and Communication Technology Competencies for Remote Search

Information and Communication Technology Literacy (ICTL) is increasingly being recognized worldwide as a panacea for functioning effectively in an emerging electronic environment. With ICTL, one can as wellgain access and make use of ICT, in return enhance e-learning and adapt to changing skills requirements. Moreover, an ICT knowledgeable workforce is capable of attractivean economy's competitiveness. Likewise, the level of digital awareness and skills are crucial to the deployment and use of a variety ofICTs. Technological skills are needed so that the technologies put in place can be maintained or adapted to local use, from which greatereducational advantages can

be derived.

ICT literacy is also vital for reaping the greatest advantages from the emerging digital era (Mutula and Wamukoya, 2007). ETS (2002) defined ICT literacy as using digital technology, communication tools, and or networks to access,integrate, manage, evaluate and create information to function in a knowledge society.

ICT represents these two technologies that fall into the union of IT and communication technologies. Global industry, international media and academic since increasingly now use ICT to describe this union. Broadly defined, ICT literacy mentionsto the ability to use internet dependent applications and non-internet dependent applications. Internet-dependent applications include, among others, networked environments encompassingarrange of multimedia communication technologies, interactive and connected environments, email, chatting, blogging,surfing and. Non-internet dependent applications include, for example, computers,standalone and simple data entry devices, suchas Microsoft applications, desktop publishing, Video games and mobile phones, to mention but a few (Mutula and Wamukoya, 2007).

The concept of ICT literacy is various well-definedin theliterature. Some of those definitions are as follows

1) Accessibility and use of computers and said technological devices to improve learning, productivity,and performance (US Department of Education, 1996).
2) Knowing basics of ICT, such as saving and opening a file, using a word processing program and sending or receiving anemail,having agood level around computers rather than having fear or a feeling of ominous(New York Times Company, 2006).
3) The ability to use digital technology, communications tools, and network to access, evaluate, manage, integrate, and eventually creatinginformation to function in a knowledge society (International

ICT Literacy Panel, 2002).

4) Knowledge regarding what technology world is madeof, what purpose it serves, whatit can serve and how it can be used efficiently to achieve specific goals (Trilling and Hood, 1999;International Technology Education Association, 2000).

2.8 Remote Access and Search Behaviour Models

This study, therefore, considered the following models in the review of related literature

• Taylor's Question-Negotiation and Information Searching Model (1986)

• Dervin's Sense-Making Metaphor (1983, 1996)

• Ellis' Model of Resource Searching Behaviour (1989, 1993)

• Kuhlthau's Model of the Information Searching Process (ISP) (1991)

E-Resources searching are the process of attempting to obtain information in both human and technological contexts. A variety of theories of information behavior e.g. "Zipf s Principles of Least Efforts (1935, 1969), Brenda and Dervin's Sense, Making (1983, 1996) and Elfreda and Chatman's Life in the Rounds (1986)" which seeks to understand the processes that surround information search and use. Foster (2005); Kuhlthau (2006) asserted that information seeking has generallybeen accepted as dynamic and non-linear. People experience information search as a process as interplay of thoughts, feelings and actions (Kuhlthau, 2006).

2.8.1 Taylor's Question-Negotiation and Information Searching Model

Taylor and Chrome (1994)labeled levels of information needs asfollows:

Ql"Real and unstated need for information well defined asvisceral need

Q2 "the conscious, with-in brain description of the need (the conscious need)"

Q3 "the formal statement of the need (the formalized need)"

Q4 "the question as presented to the information system (the compromised need)

(Question-Negotiation and Information Searching)

The **visceral level (Ql)** is "defined as an individual's need to information". This need will change as e-resource information increases. At the **conscious level (Q2)** the individual has avaguemental know-how of what it is that he or she is looking for", at this stage a colleague may be needed to help them focus the particular topic". Normally at this moment, the user has a conscious description of the required process. At the **formal level (Q3),** the user can form some questions, whether or not the information system can answer his or her question and here the individual may or not realize that a librarian is part of the system.C**ompromised level (Q4)** is the level where the user formalizes the question. At this stage, the user may contact the reference librarian or take into account the organization of the files of information, the librarypossesses (books, pamphlets, tables, etc.). The reference librarian may have to go back to earlier stages to obtain information from the process that will help obtain the answer to the inquiry. Therefore, this model gives a clear step on how users can better present their information need to either a traditional system or in the online environment. A clear understanding of the need to be satisfied is to be properly stated to achieve the anticipated result.

2.8.2 **Dervin's Sense-Making Metaphor (1983)**

Dervin stated that "e-resource search and retrieval is a set of assumptions, a theoretic perspective, a procedural approach, a set of research methods, and practice designed to cope with e-resource perceived as a human tool designed to make sense of a reality assumed to be both chaotic and orderly" due to industrialization over several years, it can not be referred to as simply a model of e-resource searching behavior only butrather it is applicable in terms of four basic elements – being a situation in time and space, defining the context in which e-resource problems arise; gaps which differentiates between the desired situation and the contextual situation e.g. uncertainty; the bridge tends to close the e-resource gap and the desired outcome. Dervin presents these elementsregarding a triangle: situation, gap/bridge, and outcome, which can be seen in the figure below:

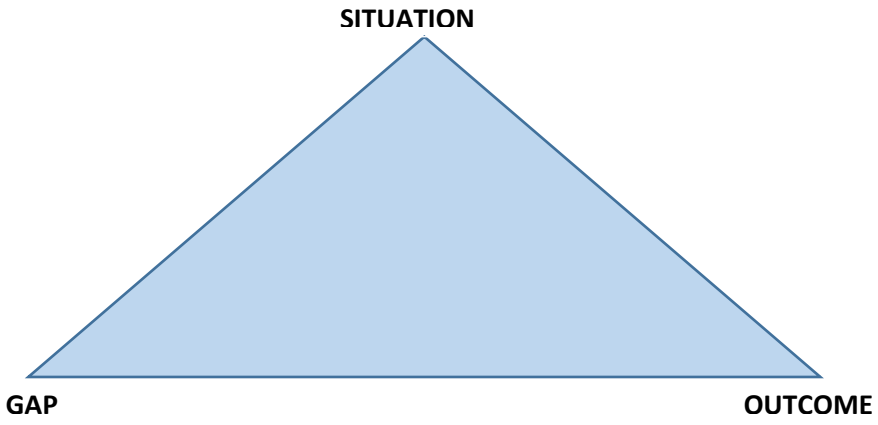

Fig 2.0: Dervin's 'Sense - Making' Triangle

Though, it is as well preferable to use the bridge metaphor directly as presented in figure 2.1 below:

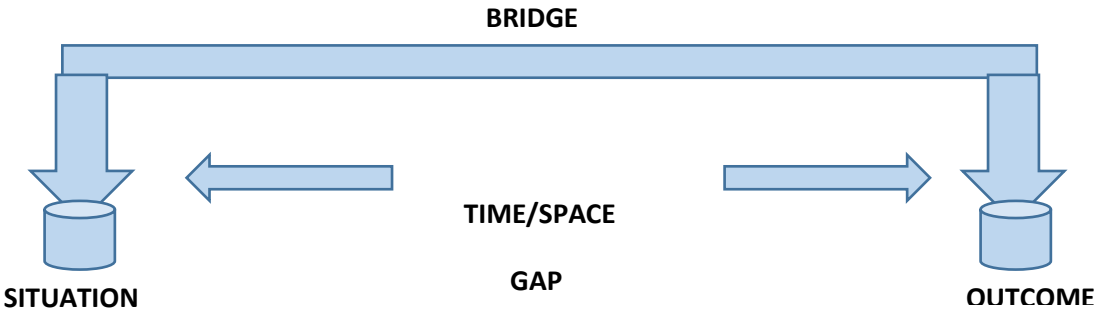

Figure 2.1: Dervin,s 'Sense – Making' Model Re-draw

Dervin's model slightly lies in methodological consequences, since in relation to e-resource search and retrieval behaviour, one may have questions that can disclose the nature of a prevailing problematic situation, the extent to which information serves to bridge the gap of uncertainty, confusion and the nature of the outcomes from the use of e-resource. Applied consistently in 'micro-moment, time-line interviews' such questioning leads to genuine insights that can influence information service design and

delivery.About this study, the sense-making model brings to light the fact that access remote sources help in bridging the gap between a user's uncertainties to a desirable outcome that is fulfilling to the user.

2.8.3 Ellis' Model of e-resource Searching Behaviour

Ellis (1989), Ellis et al (1993) and Ellis and Haugan (1997), proposed and elaborated a general model of e-resource seeking behavior based on studies of resource-seeking patterns of academics. The model describes six categories of e-resource searching activities as generic: starting, chaining, browsing, differentiating, monitoring and extracting.

Browsing: This is the activity of semi-directed search in areas of potential search. The individual often simplifies browsing by looking through tables of contents, lists of titles, subject headings, abstracts, and summaries and so on. Browsing takes place in many situations in which related informationhas been gathered together in away of subject empathy. Chang and Rice (1993) defined browsing as "the process of exposing oneself to a resource space by scanning its content meaning objects or representations, structure, possibly resulting in awareness of unexpected or new content paths in that resource space." They went a head and regarded browsing as a "rich and fundamental human e-resource searching and retrieval behaviievalour" that could lead to outcomes such as unanticipated findings, modification of information needs, learning and so on.

Differentiating: During this process, the individual filters and selects from among the sources scanned by noticing the differences between the nature and quality of the information offered. This process is likely to depend on the individual's prior or initial experiences with the sources, word-of-mouth, recommendations from personal contacts, or reviews in published sources. Taylor (1986) pointed out that for information to be relevant and consequential, it should address not only the subject matter of the problem but also the particular circumstances that affect the resolution of that problem. He identified six categories of criteria by which individuals select and differentiate between sources: ease of use, noise reduction, quality, adaptability, time saving and cost saving.

Monitoring: This is the activity of keeping abreast of developments in an area by regularly following particular sources. The individual monitors by concentrating on a

small number of what are perceived to be core sources. Core sources include the following: journals, remote search updates, newspapers, conferences, magazines, books, catalos and so on.

Extracting: This involves systematically working through a particular source or sources in order to identify material of interest. Taking the form of retrospective searching, extracting may be achieved by directly consulting the source, or by indirectly looking through bibliographies; indexes or online databases. Retrospective searching though, tends to be labour intensive, is more likely when there is a need for comprehensive or historical information on a topic. From the foregoing, the identification of categories of e-resource searching behaviour suggests that e-resource retrieval systems could increase their usefulness by including features that directly support these activities. Ellis posited that hypertext-based systems would have the capabilities to implement these functions (Ellis 1989).

Table 2.1: Literature Search Moves: Adopted from Ellis Model of Resource Searching Behavior (1989).

INFORMATION SEEKING BEHAVIOR	STARTING	CHAINING	BROWSING	DIFFERENTIATING	MONITORING	EXTRACTING
LITERATURE SEARCH MOVES	IDENTIFICATION OF SOURCES OF INTEREST	FOLLOWING UP REFERENCES FOUND IN THE MATERIAL	SCANNING TABLE OF CONTENTS OR HEADINGS	ACCESSING OR RESTRICTING INFORMATION ACCORDING TO THEIR USEFULNESS	RECEIVING REGULAR REPORTS OR SUMMARIES FROM SELECTED SOURCES	SYSTEMATICALLY WORKING THROUGH A SOURCE TO IDENTIFY MATERIAL OF INTEREST
ANTICIPATED WEB MOVES	IDENTIFYING WEB PAGES THAT CONTAIN SOURCE OS INTEREST	FOLLOWING LINKS FROM START UP PAGES TO LINK RELATED	SCANNING TOP LEVEL PAGES, LINKS, HEADINGS	SELECTING USEFUL PAGES BY BOOKMARKING, PRINTING ETC	RECEIVING SITE UPDATES USING EG PUSH AGENTS	SYSTEMATICALLY SEARCHING A LOCAL SITE TO EXTRACT INFORMATION OF INTEREST AT THAT SITE

Relating Ellis's model above to e-resource remote searching, it will be noted that it is already being supported by capabilities available in common web browser software. An individual could begin surfing the web, from one of a few favourite starting pages or sites (starting) follow hyper textual links to related information sources, both in backward and forward linking directions (chaining); scan the web pages of the sources selected (browsing); book mark useful sources for future reference and visits (differentiating; subscribe to e-mail based services that alerts the use of new information or developments (monitoring) also search a particular source or site for all information on that site on a particular topic (extracting). The Table 2.1 above shows comparison between the original formulations of Ellis and Extensions of the activities to web information searching.

2.8.4 Kuhlthau's Model of the Information Search Process (ISP) (1991)

The model of the ISP describes users' experience in the process of e-resource searching as a series of thoughts, feelings, and actions. Thoughts that begin as uncertain, vague, and ambiguous become clearer, more focused, and specific as the search process progresses. Feelings of anxiety and doubt become more confident and certain. Through their actions, people search e-resources relevant to the general topic in the beginning stages of the search process and pertinent to the focused topic toward closure. Formulation of a focus or a personal perspective ofa topic is a pivotal point in the search criteria. At that point, feelings shift from uncertain to confident, thoughts change from vague to more clear and interest increases. The model was verified in longitudinal case studies and large-scale studies of diverse samples of library users. Further studies have examined the implementation of a process approach in education contexts and investigated the ISP in the workplace.

The ISP describes common experiences in the process of e-resource searching for a complex task that has a discrete beginning and ending and that requires considerable construction and learning to be accomplished. The model reveals a search process in which a person is seeking meaning in the course of searching information. From the user's perspective, the primary objective of remote e-resource seeking is to accomplish the task that initiated the search, not merely the collection of information as an end in

itself. The ISP presentssearchinginformation as a means to accomplish a goal. The model of the ISP is articulated in a holistic view of information searching from the user's perspective in six stages:

- **Initiation:** When a person first becomes aware of a lack of knowledge or understanding and feelings of uncertainty and apprehension are common.
- **Selection:** When a general area, topic, or problem is identified, and initial uncertainty often gives way to a brief sense of optimism and a readiness to begin the search.
- **Exploration:** When inconsistent, incompatible e-resource is encountered and uncertainty, confusion, and doubt frequently increase and people find themselves "in the dip" of confidence.
- **Formulation:** When a focused perspective is formed and uncertainty diminishes as confidence begins to increase.
- **Collection:** When information pertinent to the focused perspective is gathered and uncertainty subsides as interest and involvement deepens.
- **Presentation:** When the search is completed with a new understanding enabling the person to explain his or her learning to others or in some way put the learning to use.

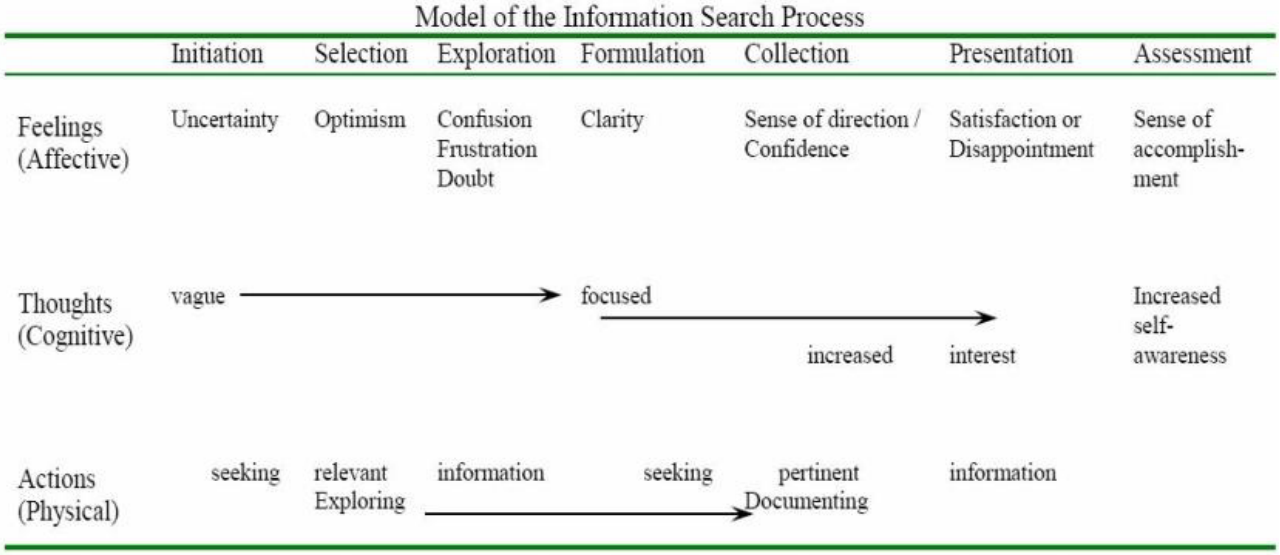

Fig 2.2: Kuhlthau's Model of the Information Search Process (ISP) (1991)

2.9 Conceptual Framework Comparison and Justification of adoption

The research carefully studied and compared the following models for adoption and observed the following:-

Considered Models for Adoption

- Raya Fidel and Dagobert Soergel's (2007)
- Dervin,s 'Sense – Making'Metaphor (1983, 1996)
- Ellis' Model of Information Seeking Behavior (1989, 1993)
- Kuhlthau's Model of the Information Search Process (ISP) (1991)
- Taylor's Question-Negotiation and e-resource search Model (1986)

1) Raya Fidel and Dagobert Soergel's

Raya Fidel and Dagobert Soegel'sframework (2007) was adopted for reasons justified as follows: The first part describes the various roles that Independent variables play in a research study, the second part gives the conceptual framework dependent variables with examples of individual variables for illustration. The framework considers the following elements of the total retrieval situation: the setting, the request, the database, the search system, the searcher/ user, the search process and the search outcome. For each of these elements (excluding search outcome) a detailed list of variables is given in figure 2.3. The variables are organized in a table according to themes that are applicable across elements.

The Independent variables of significance in remote access and retrieval process refer to eight elements of the entire process and the interaction among them alongside their respective Dependent variables: (1) The setting, (2) The user, (3) The request, (4) The Database, (5) The search system, (6) The searcher, (7) the Search process, (8) The search outcome. This list is based on the user interface variables which may influence how the user states his or her query. Application of the above variable in this study aided the researcher to collect data from respondents i.e. setting variable defined the organization in which the research was based on an academic institution, user variable enabled the researcher to analyze respondents educational level, e-resource search skills and respondents e-resource search techniques.

The request is defined by the manner and degree of specificity by the user in search process, purpose of search defines the request sent by the user and e-resource need ought

to define the type of resource to be accessed by the user. The database and search system though are two entities; they served one and the same purpose in this study, they aided the researcher to gather information concerning update frequency, currency from publication to inclusion, the thesauri available, log-on procedure by users, cross reference and exhaustively of indexing. Search process variable guided the researcher to collect information on search techniques of users, query formulation, database selection by the users and user research termination process. The outcome of the search defined the success or failure level of the search by the user.

There are still other ways in which additional meaningful variables may be generated. For example, searching aids may be used in different search phases generating combinations which may be treated as separate variables. Thus, the list of Independent variables presented in these articles is not closed; rather, it could be considered a generator of variables.

2) Dervin,s 'Sense – Making' Metaphor

The strength of Dervin's model lies partly in its methodological consequences, since in relation to information behaviour, it can lead to a way of questioning that can reveal the nature of a problematic situation, the extent to which information serves to bridge the gap of uncertainty, confusion, or whatever, and the nature of the outcomes from the use of information. The model only suggested three main variables (1) Situation, (2) Gap and (3) Outcome. This model has a limitation regarding additional independent variables and no specified dependent variables.

3) Taylor's Question-Negotiation and e-resource search Model

Taylor comes up with four levels of resource need: The **visceral level (Ql)** which is an initial need for information. **Conscious level (Q2)** where the user has an ambiguous mental description of what it is that he or she is looking for. **Formal level (Q3),** the user can form a question, may question whether or not the information system can answer their question and the user may or may not realize that the librarian is a part of the information system. The **compromised level (Q4)** is the level in which the question is formalized. This is the stage in which the user may contact the reference librarian or take into account the organization of the files of information the library possess (books, pamphlets, tables, etc.). This model concentrates only on the user need of information,

but it does not give clear procedure to acquire the resource needed to fulfill the need; hence con not be used in formulating data collection tool.

4) Ellis' Model of Information Seeking Behavior

This perticular model described six categories of information searching activity as generic: starting, chaining, browsing, differentiating, monitoring and extracting.similary it isDiscussed as:- A student can also begin by surfing the internet, from a few favourite startingsite (starting) follow hypertextual links to related information sources, both in back and forth linking directions (chaining); scan the web pages of the sources selected (browsing); bookmark reliable sources for future references (differentiating; subscribtion to e-mail based services that alert the user on any new information or developments (monitoring) also search a particular source or site for all information on that site on a particular topic (extracting).

The model lacks clear variables to bench mark the success or failure of an e-resource search and retrieval by the DL students of the University of Nairobi, hence, the researcher could not use it to research on the efficiency of the e-resources in fulfilling their information need through remote access of the e-resources.

5) Kuhlthau's Model of e-resource SearchesProcess (ISP)

Kuhlthau's model describes users' experience in information searching as a series of three independent variables namely: feelings, thoughts,and actions as compared to **Raya Fidel and Dagobert Soergel's model** of eight independent variables and an infinite number of dependent variable, Independent variables being: (1) The setting, (2) The user, (3) The request, (4) The Database, (5) The search system, (6) The searcher, (7) the Search process, (8) The search outcome as compared to ISP's six dependent variables namely: (1) Initiation, (2) Selection, (3) Exploration, (4) Formulation, (5) Collection, (6) Presentation; the researcher considered the above factors and favourably adopted Raya Fidel and Dagobert Model for this research.

Models of Taylor, Kuhlthau, Dervin and Ellis,have helped in the best way to understanding the way and manner users search for and satisfy their e-resource needs though Raya Fidel and Dagobert Model was adopted for this study for reasons elaborated in (2.8 Conceptual framework comparison and justification (1)).

INDEPENDENT VARIABLES

Variable Indicators

Setting	Searcher	Request	Database	Search System	Search Process	Outcome
➢ Organization orientation i.e. research or educational ➢ Organization affiliations i.e. commercial or governmental ➢ Subject area of the organization ➢ Organization mission to provide service or products	➢ Search Limitations, ➢ Education, ➢ Prior experience, ➢ Attitude ➢ Cost consciousness, ➢ Personality traits, ➢ Cognitive factors, ➢ Demographic variables ➢ Information Seeking Styles ➢ Subject Background	➢ Degree of specificity, ➢ Degree of difficulty ➢ Information provided by the user/ searcher ➢ Complexity ➢ Purpose ➢ Subject Coverage ➢ Subject Characteristics of indexing ➢ Types of documents included ➢ Time aspect of Coverage	➢ Coverage, ➢ Update frequency, currency from publication to inclusion. ➢ Thesauri availability, ➢ Cross-reference listings, ➢ Cost ➢ Reliability i.e. Down time ➢ Log-on Procedures ➢ Exhaustively of Indexing ➢ Specificity of Indexing	➢ Search aids, ➢ Search support capabilities, ➢ Search capabilities, ➢ Able to search all the fields of the field of the unit record. ➢ Use Boolean Operators	➢ Interaction with the user, ➢ Database selection, ➢ Query formulation, ➢ Termination of the search	➢ quality of retrieved results, ➢ precision, ➢ Recall ➢ Relevancy ➢ Quantity of available resources. ➢ Timeliness of retrieval ➢ Retrospective Coverage ➢ Document access capability ➢ Expected Search Length ➢ User Satisfaction

Figure 2.3 Conceptual Framework: adopted from Raya Fidel and Dagobert Soergel's Conceptual Framework for Research

CHAPTER THREE

RESEARCH METHODOGY

3.0 Introduction

This chapter describes the research methodology used by indicating the research design, target population, data collection method/techniques and data analysis that will be utilized to establish the impact of remote access of e-resources by university students, with a special focus on the University Of Nairobi-Distant Learning. The methodology is sub-divided into the following topics:

- The Research Design
- Target Population of the Study
- Sampling Procedure
- Instrument for Data Collection
- Procedure for Data Collection
- Procedure for Analysis of the Data

3.1 Research Design

To analyze remote access patterns and usage of library e-resources, with a special focus on the University Of Nairobi, the researcher adopted a case study research design. A case study is an in-depth investigation of an individual or a group or an institution with a primary motive to determine factors and relationships that have resulted in the behavior of the study (Robson, 2002). The research design enabled the researcher to undertake an in-depth study to establish extent of remote access to materials by students at the University of Nairobi

3.2 Target Population

The target population for this study comprised student in the University of Nairobi Distance learning Students; there are estimated 15,000 students in the University of Nairobi Department of distance studies who formed the target population of the study.The rationale behind the choice of this population is the fact that they make use of the Web, which facilitates their learning.

3.3 Sampling Procedure

The study was based on a convenience sample. To reach the target of respondents, the survey was self-administered and distributed to Nairobi University students. The Sample demographic information was taken considering the age, gender, location for control purposes. A ratio was assigned for undergraduate compared to postgraduate students since there the population of post graduate students is lower.

A sampling frame is a complete list of all the members of the population that we wish to study (Kothari, 2004). The study adopted a mathematical formula for the purpose of determining the sample size. (Taro Yemane, 1970) suggested the following mathematical formula for determining sample size.

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

Where, N is the total population size, and e is the error or confidence level. The conventionalconfidence level of 95% was used to ensure a more accurate result from the sample. Based on this, the error term would equal to 0.10. Using the total population of 15,000 and error margin of 0.10 the sample size was calculated as follows:-

N = 15,000

$1 + 15{,}000(.10)^2$

n = 15000/150.01= 99.98

n=100 respondents

There are 15000 students in the School of Continuing and distance education in the University of Nairobi. Using the formula, the Sample size was 100 respondents who are mobile learning users.

3.4 Data Collection Procedure

This study was collected both primary and secondary data relating to the impact of remote access on e-resources, with special focus on University of Nairobi's distant learning. Primary information was collected by use of a questionnaire. The questionnaire

was open and closed questions and was divided into four sections, A, B, C and D. Section A focused on the profile of the respondent while section B seeked to Identification of Remotely accessed Resources and Services by the students, Section C dealt with Identification of Use Device Sources and Format of e-resources and Section D dealt with Remote access search techniques applied by students while undertaking their search and use. The questionnaire were dropped and picked from the respondents after a reasonable period. Secondary data was gathered from organization reports generated by the Institutional Management Information Systems.

The researcher administered the instruments to the DL students of the selected educational levels with the help of other three contracted data collectors. The administration of the instrument were carried out confidentially to ensure that the right information was gotten from them without interference from other respondents. They were also be given the assurance that their responses would be treated confidentially. A follow up was made to ensure speedy completion and return of the questionnaires administered.

3.5 Reliability and Validity of the Instrument

A pilot study was first carried out in with ten students, who were not included in the actual survey. The pilot study enabled the researcher to be familiar with research and its administration procedure as well as identifying items that require modification. The result helped the researcher to correct inconsistencies arising from the instruments, which ensured that they measured what was intended. Reliability refers to the consistency of measurementent and is frequently assessed using the test–retest reliability method. Reliability is increased by including many similar items on a measure, by testing a diverse sample of individuals and by using uniform testing procedures. Reliability of the research instrument was enhanced through a pilot study that was done with 10 students. The pilot data was not included in the actual study. The pilot study allowed for pre-testing of the research instrument. The clarity of the instrument items to the respondents was established so as to enhance the instrument's reliability.

Reliability of the questionnaires was evaluated through Cronbach's Alpha which measures their internal consistency. The Alpha measures internal consistency by establishing if a certain item measures the same construct. Nunnally (1978) established the Alpha value threshold at 0.5 which the study benchmarked against. Cronbach Alpha was established for every objective in order to determine if each scale (objective) would produce consistent results should the research be done later on.

3.6 Data Analysis and Report Writing

Before processing the responses, the completed questionnaires were edited for completeness and consistency. A content analysis and descriptive analysis was employed. The content analysis was used to analyze the respondents' views on the use of remote access of library e-resources during their learning processes. With special focus on University of Nairobi's distance learning. The data was coded to enable the responses to be grouped into various categories. Descriptive statistics such as frequency, pie charts, percentages and graphs were used to help in data analysis. Tables and other graphical presentations as appropriate were used to present the data collected for ease of understanding and analysis.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, AND DISCUSSION

4.0 Introduction

This chapter presents the analysis of the data collected, results and discussion of the findings of the study, according to the research questions and hypotheses raised in the study. The study targeted a sample size of 120 respondents but managed to sample 107 from which 79 filled in and returned the questionnaires making a response rate of 73.8 percent. This response rate was satisfactory to make conclusions for the study. The response rate was representative. According to Mugenda and Mugenda (1999), a response rate of 50 percent is adequate for analysis and reporting; a rate of 60 percent is good and a response rate of 70 percent and over is excellent. Based on the assertion, the response rate was considered to be excellent.

4.1 Response Rate

Table 4.1 Response Rate

Questionnaire	Frequency	Percentage
Filled and Returned	79	73.8
Unreturned	28	26.2
Total	**107**	**100.0**

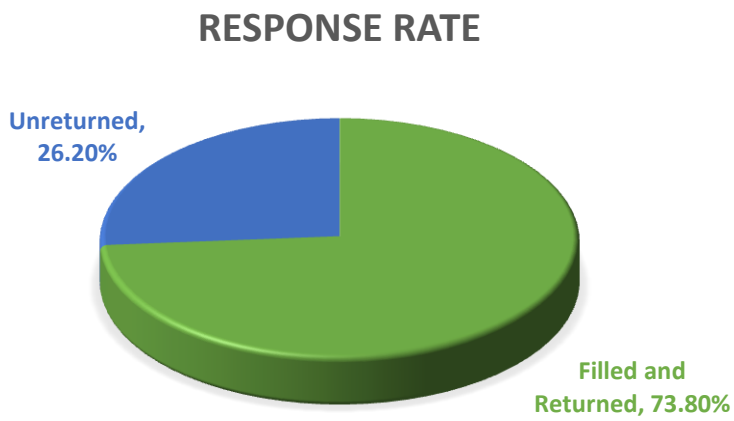

Figure 4.1 Response Rate of University of Nairobi DL Students

4.2 Age of Respondents

The respondents were requested to indicate their age categories.

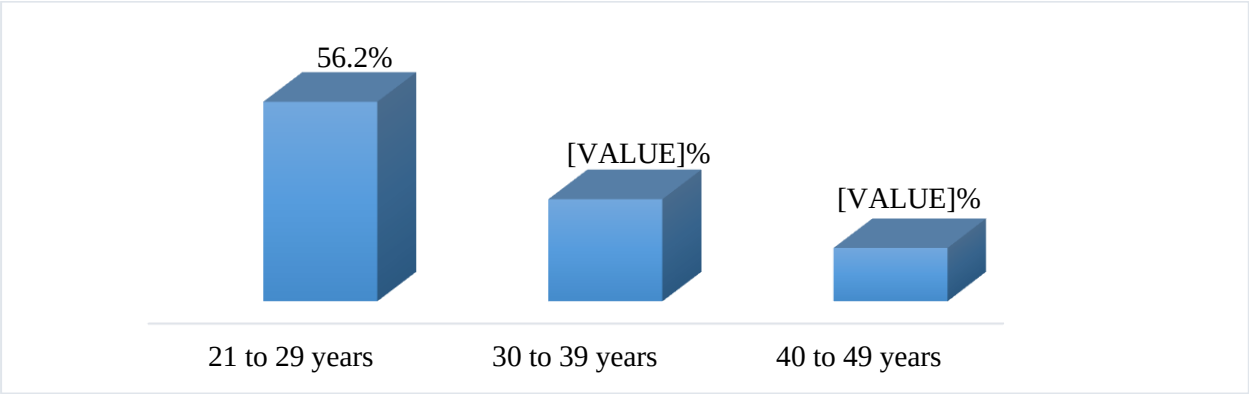

Figure 4.2 Age of the Respondents

The findings revealed that majority of the respondents as shown by 56.3% indicated that they were aged between 21 and 29 years, 28.8% of the respondents indicated that they were aged between 30 and 39 years while 15% of the respondents were aged between 40 and 49 years. These findings show that the respondents involved in this study were from different age categories**.**

4.3 Respondent's Level of Education

The study also sought to determine the respondents' level of education.

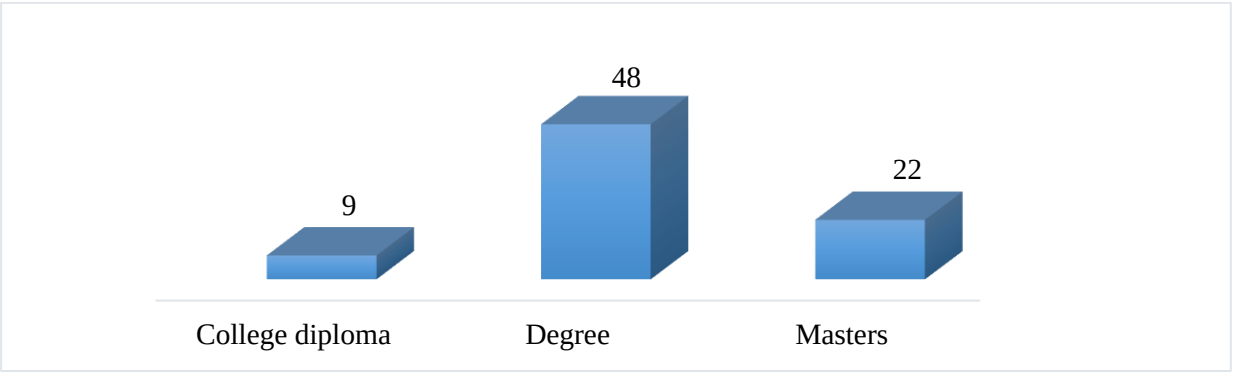

Figure 4.3 Respondent's Level of Education

From the findings, majority of the respondents as shown by 62% were pursuing a degree, 28% of the respondents were doing masters while 10% of the respondents were college diploma. These findings show that the respondents had attained basic

education and would thus understand the questions hence give credible information related to the study.

4.4 Data Analysis

The presentation and analysis of the data was doneby descriptive analysis.

4.4.1 Descriptive Analysis

This section has analyzed and discussed the data collected for the purpose of answering the research questions raised in the study. Frequency tables and percentages have been used to compute and present the results. Tables and Diagrams have been used to illustrate the pictorial analysis of some of the data analyzed.

4.4.2 Types of E-Resources and Services Accessed by UoN DL Students

This research has identified the types of e-resources and services that the DL students in UoN access. As presented in Tables 4.2 and 4.3 below.

Table 4.2 E-Resources Available for UoN DL Students

No.	Type of E-Resource	Frequency	Respondent's Percentage Accessing E-resource
1	e-books	58	73.4%
2	e-journals	64	81%
3	WWW	79	100%
4	Digital Repository	75	94.9%
5	East Africana	18	22.7%
6	Staff Publications	39	49.3%
7	Electronic Theses and Dissertations	60	75.9%
8	Others	40	50.6%

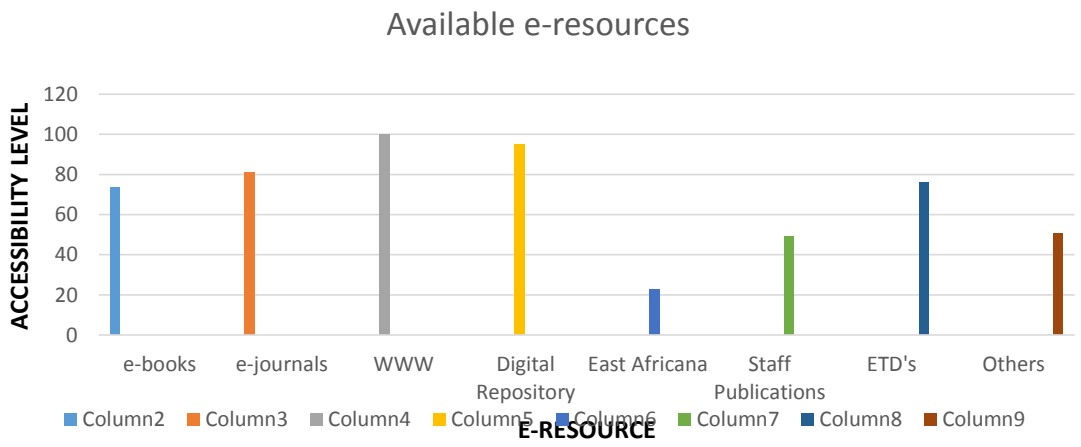

Figure 4.4 E-Resources Available for UoN DL Students

The Table 4.2and Figure 4.4 revealed that 79(100%), constituting all students are aware of the availability of the World Wide Web as an e-resource. They also indicated that they are aware of the availability of e-journals, e-books, electronic theses and dissertations, and digital repository with 58(73.4%), 64(81%), 60(75.9%) and 75(94.9%) respectively. This suggests that e-resources are being advertised by the librarians in charge of the resources and through training and workshops for the DL students in UoN to be aware of them.

Table 4.3 E-Resource Services Available for UoN DL Students

N0	e-resource Service	Frequency	Percentage 0f Respondents accessing the e-resource service
1	Web Portal	62	78.48%
2	Books-in-Print Database (BIPD)	30	37.97%
3	Trial Database	12	15.18%
4	Important Links	23	29.11%
5	Title Listing	58	73.41%
6	Teaching Programs	77	97.46%
7	OPAC	69	87.34%
8	e-tutorials	72	91.13%

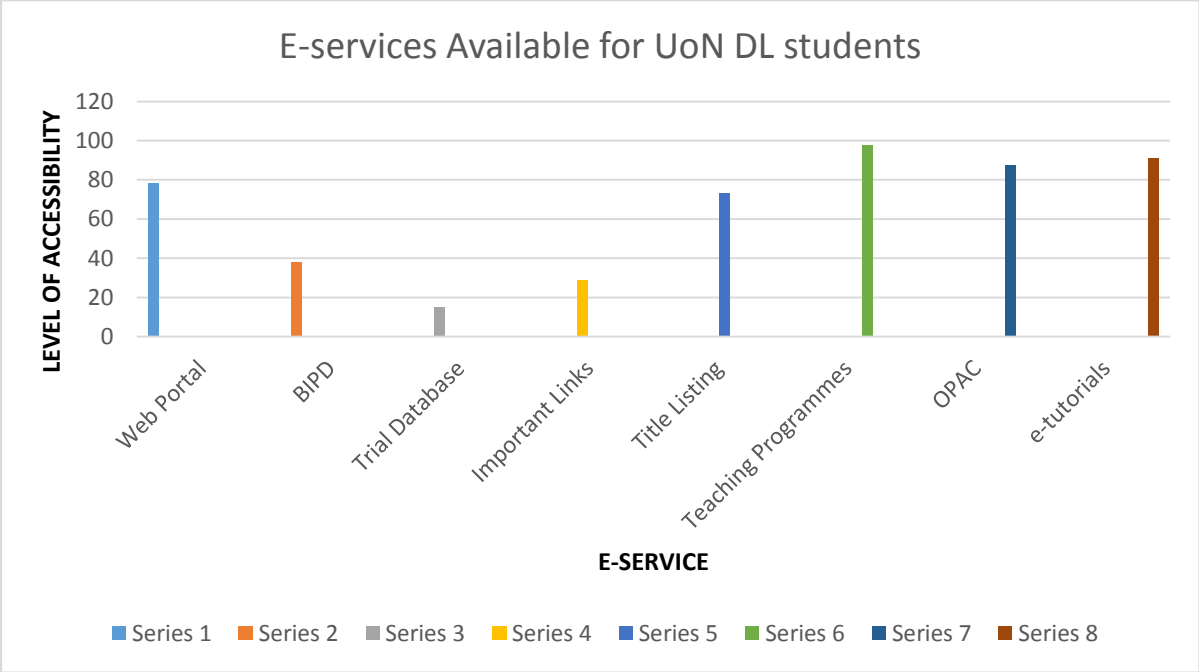

Figure 4.5: E-Services Available for UoN DL Students

Table 4.3 and Figure 4.5 above have shown that the respondents are aware of web portal and are using it 62(78.48%). This high use of the web portal is based on the fact that it links them to other services which are domiciled on the web. Some of the respondents indicated their awareness and use of the following online services: OPAC, e-tutorials, Teaching Programs and Title Listing, 69(87.34%), 74(91.13%), 77(97.46%) and 58(73.41%) respectively.

The reason for the low response rates in some services like trial database was because they are not commonly used by lecturers in interacting with the students.

4.4.3 Sources of E-Resources to DL Students in the University of Nairobi

The study has identified the sources of E-Resources available to DL students in University of Nairobi as presented in Table 4.4, 4.5 and 4.6 respectively.

Table 4.4: Sources of E-Resources for DL Students.

TYPE OF E-RESOURCE	AVAILABILITY TO UoN DL STUDENTS
Portal	✓
OPAC	✓
Electronic Thesis and Dissertations	✓
Blogs	✓
Databases	✓
WWW	✓
Special Databases	✓
Social Networking Sites	✓

Table 4.4 above revealed that all the E-Resources listed above served as the sources of E-Resources provided by the UoN for use by the DL students of the University.

Table 4.5: Format of Remotely Accessed E-Resources Preferred by DL students in the University of Nairobi

E-RESOURCE FORMAT	Most Preferred		Preferred		Not Preferred		Total Percentage
	f	%	F	%	f	%	%
PDF	49	62.03	23	29.11	7	8.86	(79 [100%])
HTML	25	31.65	28	35.44	26	32.91	(79 [100%])
MS WORD	46	58.23	30	37.97	3	3.80	(79 [100%])
POWERPOINT	34	43.04	29	36.71	16	20.25	(79 [100%])

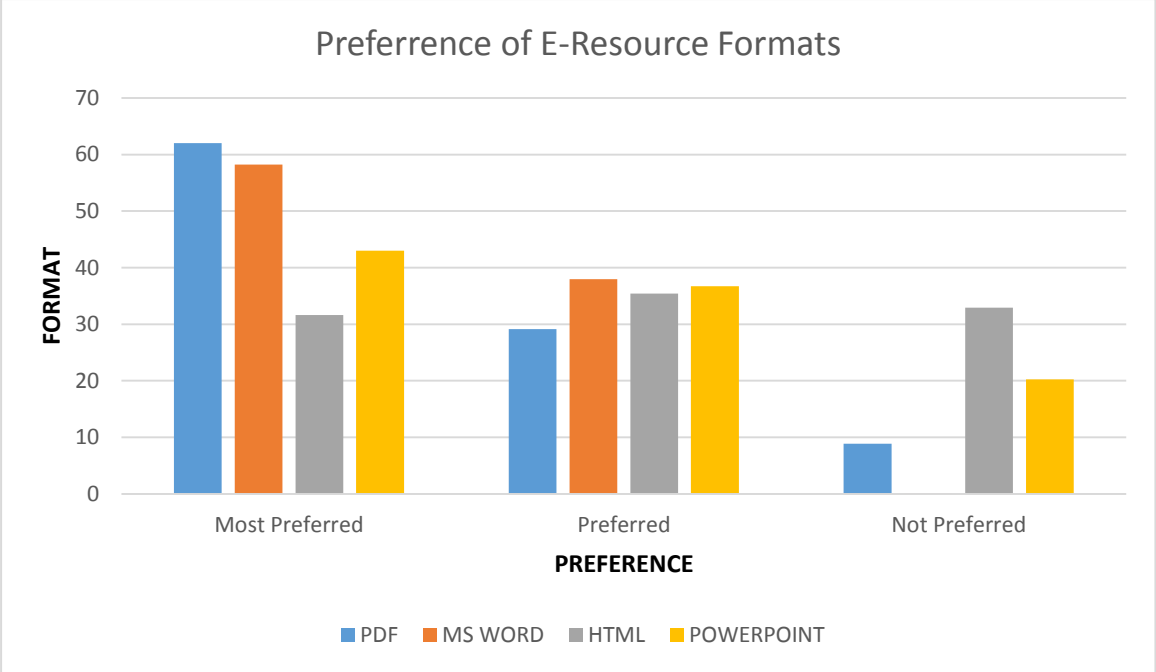

Figure 4.6 E-Resource Format in Order of DL Students Preference

Table 4.5and Figure 4.6 above revealed that PDF, MS-WORD, and Power-point were the most preferred formats used for retaining e-resources by DL students in the University, with 49(62.02%), 46(58.22%) and 34(43.03%) respectively. It is, therefore, evident that the PDF is a general file format used to present e-resource materials. This could be because e-resource providers consider the aspects of copyright when providing information online because the most PDF do not create room for modification. The Table also revealed that majority of the DL students do not like to access E-resources in HTML format. They prefer to download mostly the information they need and use it at a later time.

4.4.4 E-Resource Search Techniques Applied Remotely

This section tried to find out the type of search techniques DL students in UoN employed when seeking for e-resources. Tables 4.8, 4.9, 4.1.1, 4.1.2 and 4.1.3present responses gotten.

Table 4.6: Frequency of E-Resource Search Techniques by UoN DL Students

TYPE OF SEARCH TECHNIQUE	FREQUENCY OF APPLICATION							
	VERY OFTEN APPLY		OFTEN APPLY		REALY APPLY		NEVER APPLY	
	f	%	f	%	F	%	F	%
One Keyword	26	32.91	20	25.31	18	22.78	12	15.18
More Than One Keyword	30	37.97	23	29.11	16	20.25	10	12.65
Direct to the URL	35	44.30	28	35.44	7	8.86	9	11.99
Boolean operators (and, or, not)	39	49.36	21	26.58	13	11.45	6	7.59
Search within results	30	37.97	34	43.03	11	13.92	4	5.06
Find similar results	28	35.44	31	39.24	14	17.72	6	7.59
Author/title search	37	46.83	25	31.64	10	12.65	7	8.86
Use of search engines. Google,	44	55.69	26	32.91	9	10.12	0	0

It was discovered from Table 4.6 above that majority of the DL students 44(55.69%) very often use search engines e.g. Google, Yahoo, etc. directly to search for e-resources. The hits returned with billions of sources which in turn confused the students on the aspect of satisfying their search needs. This lead them to frustration and in some cases end the search process. In ensuring that they got proper results in the search process, 39(49.36%) of the respondents made use of Boolean operators very often i.e. the use of AND, OR, and NOT whilesearch for e-resources. It was further discovered that students do alternative search when they do not obtain sufficient amount of information they require from an initial search as seen in Table 4.7 that follows:-

Table 4.7 Remotely Applied Alternative Search

ALTERNATIVE SEARCH	MOST RELEVANT		RELEVANT		NOT RELEVANT	
	f	%	f	%	f	%
I choose different keyword	46	58.22	23	29.11	10	12.65
I choose different source e.g. search engine, journal etc.	32	40.50	34	43.03	13	16.45
I change search technique e.g. Boolean	51	64.55	20	25.31	8	10.23
I suppose there is no satisfactory e-resource and end the search.	14	17.72	29	36.70	35	44.30

Table 4.7 has revealed that majority of the UoN DL students 46(58.22%) found it most appropriate to choose different methods of searching e-resources for their need if a previous search did not return with the desired resource; they found this to be most relevant. It was also discovered that 32(40.50%) of the DL students change the initial search technique they use i.e. they use Boolean operators, truncation, or search phrases instead of keywords, etc. Surprisingly, 14(17.72%) of the UoN DL students indicated that they assumed that there are no satisfactory results and thereby ending the search process. This may be because the student(s) does not possess enough requisite skills on how to search for e-resource. In furtherance to the UoN DL students search patterns Table 4.10 revealed their e-resource search skills as seen below.

Table 4.8: E-Resource Remote Search Skills

E-RESOURCE SEARCH SKILLS	DIPLOMA		UNDERGRADUATE		POSTGRADUATE		TOTAL	
	f	%	f	%	F	%	f	%
Navigational Skills	5	55.55	40	83.33	20	90.90	65	82.28
Filtering Skills	3	33.33	32	66.66	14	63.63	49	62.03
Advanced Search Skills	3	33.33	26	32.91	18	81.81	47	59.49

Table 4.8 above and figure 4.7 below, revealed the skills possessed by UoN DL students in performing e-resources search. Navigational skills are predominantly used by DL undergraduate students 20(90.90%), DL students in undergraduate 32(66.66%) make use of filtering skills when remotely searching for -resources; whereas DL students undertaking diploma possess a shared 3(33.33%) in both advanced e-resources search skill and Filtering resources. The disparities of the search skills used is based on the fact that they are DL students from different education levels. The study, therefore, revealed that no two levels possess the same search skills due to the nature of their courses and nature of conducting research.

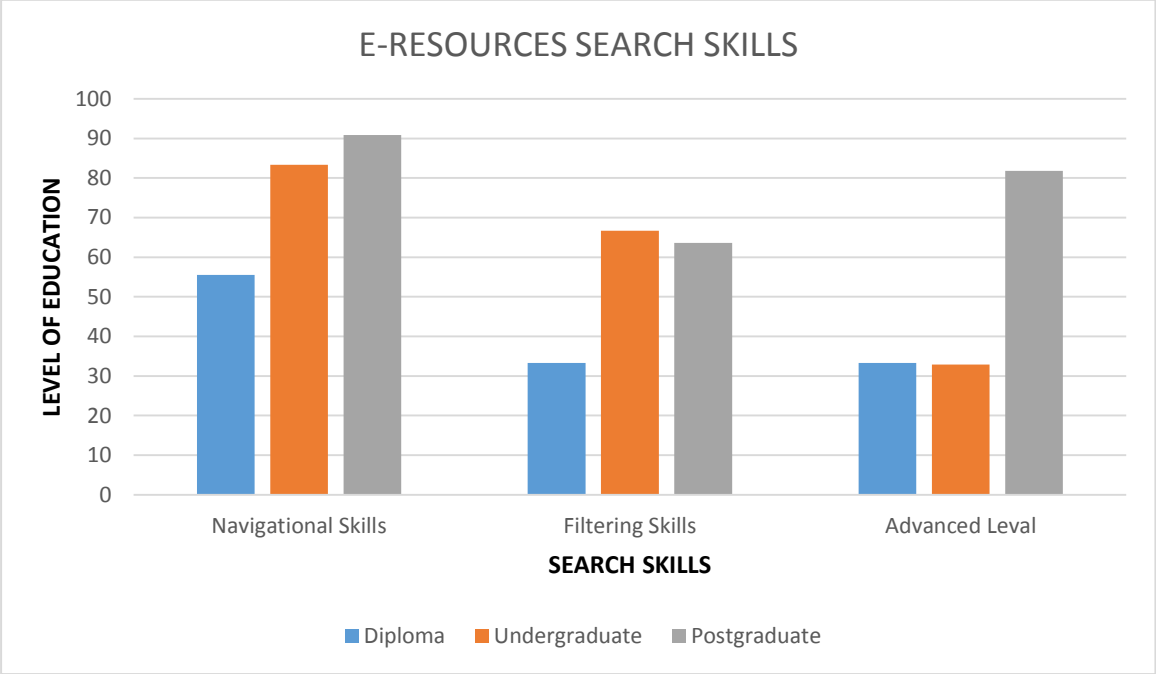

Figure 4.7 E-Resource Remote Search Skills of UoN DL Students

Table 4.9 below reveals the various kind of training attended by DL students in the University of Nairobi to help them utilize remotely accessed e-resources as shown below.

Table 4.9: Training Programs

TRAINING PROGRAMME	DIPLOMA		UNDERGRADUATE		POSTGRADUATE		TOTAL	
	f	%	f	%	f	%	F	%
Library arranged remote access training	6	66.66	22	45.83	8	36.36	36	45.56
Search and Retrieval Course	1	11.11	6	12.50	4	18.18	11	13.92
Workshops and Seminars	0	0	3	6.25	1	4.54	4	5.06
External Training	0	0	5	10.41	4	18.18	9	11.39
Learnt from Colleagues	2	22.22	12	25.00	5	22.72	19	24.05

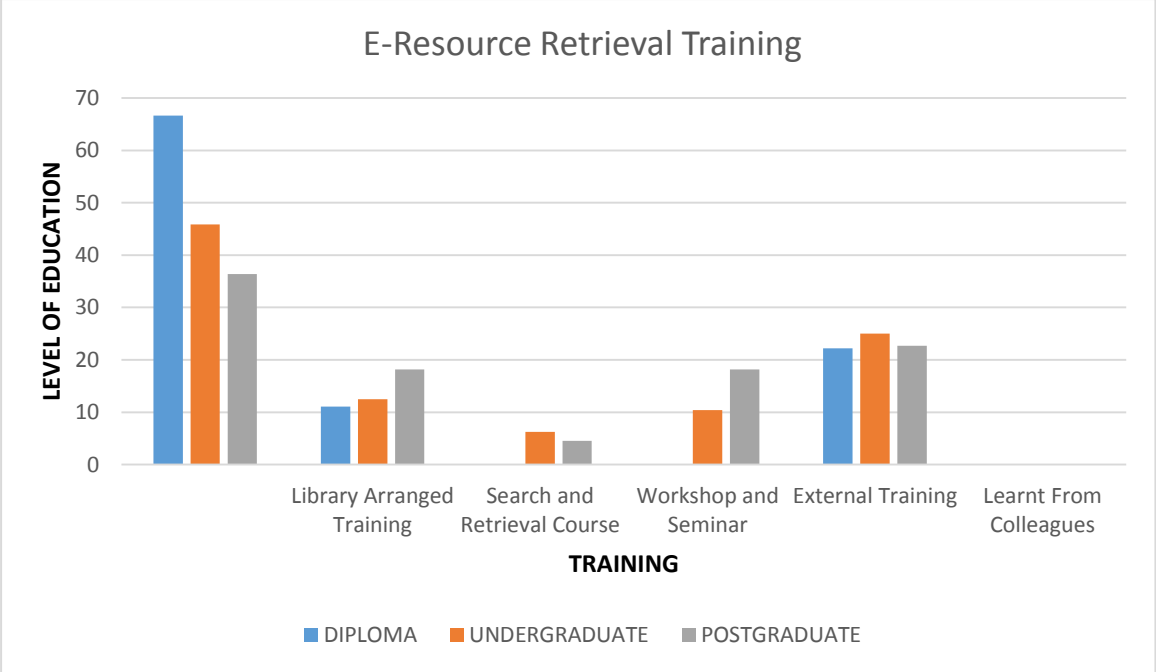

Figure 4.8 E-Resource Retrieval Training acquired by DL UoN Students

Table 4.9 and Figure 4.8 above revealed the various kind of training undergone by UoN DL students to help build up their skills. 6(66.66%) of the diploma students indicated that they attended library organized Internet training on remote access of e-resources. This is evident because majority of the respondents indicated so when their responses were analyzed. It was also discovered that 4(18.18%) of the respondents in postgraduate indicated that they acquired the skill by training on search and retrieval course previously. Across board, some respondents 12(25%) indicated that they had acquired on the skill from colleague training on how to effectively search for resources remotely on the web.

4.4.5 Evaluation of e-resource sources

In order to ensure that they use accurate and relevant materials, the DL students in University of Nairobi need to evaluate the e-resource sources. Therefore, the result below revealed how the DL students in the different levels of study sampled evaluate their resources as shown in Table 4.1.1.

Table 4.1.1 Evaluation of E-Resources Sources

Evaluation of e-resource source	Diploma		Undergraduate		Postgraduate		TOTAL	
	f	%	f	%	f	%	f	%
Accuracy	5	55.55	31	64.58	21	95.45	57	72.15
Reliability	4	44.44	28	58.33	17	77.27	49	62.02
Convenience	4	44.44	22	45.83	13	72.72	39	49.36
Accessibility	6	66.66	34	70.83	20	90.90	60	75.94
Timeliness	3	33.33	36	75.0	18	81.81	57	72.15

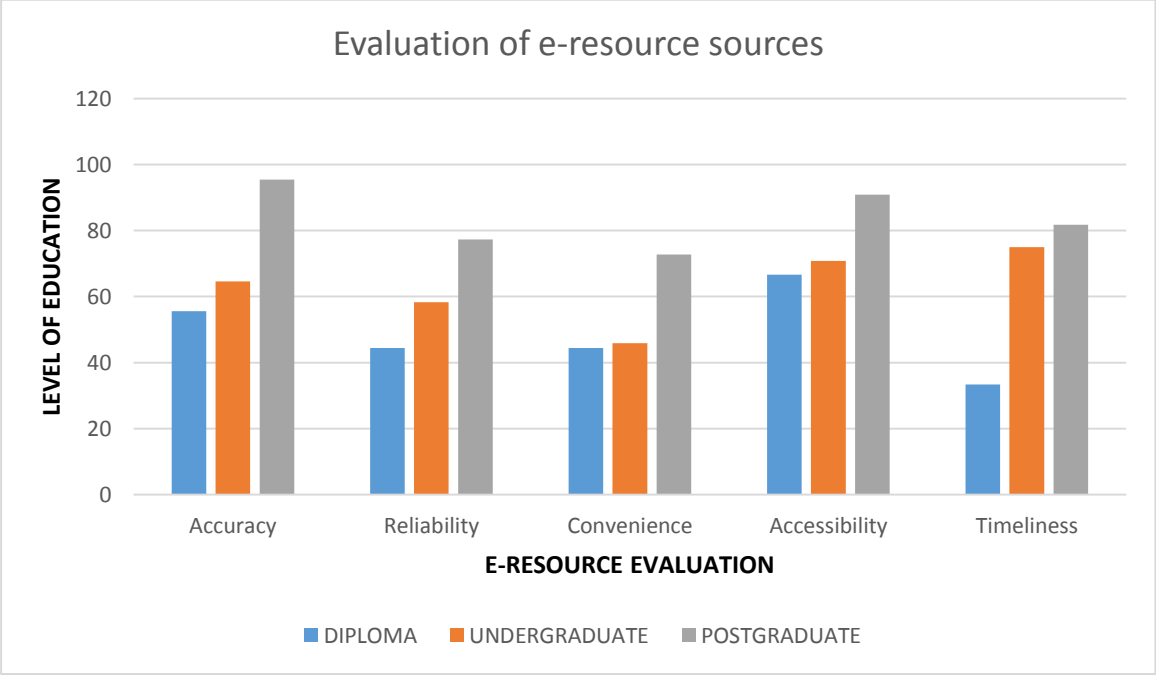

Figure 4.9Evaluation of E-Resources Sources

Table 4.1.1 and Figure 4.9 above revealed that in general, the majority of the DL students studied to evaluate the accuracy, reliability, convenience, accessibility and timeliness of the e-resources sources they use. From the various educational levels sampled, it was discovered that DL students from postgraduate level lead in all

categories, for example, accuracy at 21(95.45%) considered the reliability of the sources they used 17(77.27%), while they considered theconvenience of the source 13(72.72%). With regards to accessibility and timeliness considered it with 20(90.90%) and 18(81.81%) respectively. The reasons why postgraduate students evaluate their information sources is not farfetched. They always want to ensure that the information gotten is accurate and relevant to their research.

Table 4.1.2: Challenges Encountered

Types of Challenges Encountered	**Strongly Agree**		**Agree**		**Disagree**		**Strongly Disagree**	
	f	**%**	**f**	**%**	**f**	**%**	**F**	**%**
Information Overload	48	60.75	25	31.64	5	6.30	1	1.26
Download Delay	12	15.18	33	41.72	20	25.31	14	17.72
Credibility of e-resource	50	63.29	24	30.37	3	3.79	2	2.53
Failure to find e-resource	17	21.51	12	15.18	30	37.97	20	25.31
Lack of search skills	11	13.92	14	17.72	27	34.17	27	34.17
High cost of access	46	58.22	18	22.78	10	12.65	5	6.32
Power Outages	6	7.59	15	18.98	48	60.75	10	12.65
Difficulty of Navigation	2	2.53	19	24.05	31	39.24	17	21.51

Table 4.1.2 above reveals that majority of the DL students are faced with the problem of information overload i.e. too much information to contend with when they conduct searches with 48(60.75%). Similarly, some of the UoN DL students indicated that they lack requisite skills to effectively search for e-material on the web they represent 17(21.51%) of the respondents. DL students 33(41.72%) indicated that download delay constitutes a problem to them when using e-resources remotely. The above can be attributed to the fact that most areas they live are not running on the fibre optics broadband network which provides high-speed internet connectivity. The lack of

requisite skills, therefore, to be able to access internet resources provided for use can be attributed inadequate training for students.

4.4.6 Comparison of remote access to e-resources

In a comparison of data captured both from the University of Nairobi e-resources VPN Capture and students IP addresses used in the process of accessing the e-materials, we can for sure justify that DL Students are using the e-resource remotely. IP 82.145.222.247 of Registration number E96/93783/2013@students located in the United States of America (USA).

Table 4.1.3: DL Student remote access IP locator.

IP Address	82.145.222.247
Location	United States, California, Palo Alto
Latitude & Longitude	37.441880, -122.143020 (37°26'31"N 122°8'35"W)
ISP	Opera Software ASA
Local Time	16 Nov, 2015 07:53 AM (UTC -08:00)
Domain	opera.com
Net Speed	-
IDD & Area Code	(1) 650
ZIP Code	94301
Weather Station	Palo Alto (USCA0830)
Mobile Country Code (MCC)	-
Mobile Network Code (MNC)	-
Carrier Name	-
Elevation	8m
Usage Type	(MOB) Mobile ISP
Anonymous Proxy	Yes
Shortcut	http://www.ip2location.com/82.145.222.247

Table 4.1.4 VPN Remote Access From UoN MIS.

User	VPN Types	Devices	Last Connected	Connected From	Bytes(Sent/Received)	# of Connections	Duration
179750	SSL Web	UoNFGW	11-06 09:25:24	197.211.11.118	8.54MB/479.16KB	1	1h 6m 39s
C50/71967/2014@students	SSL Web	UoNFGW	11-08 12:32:14	41.212.20.203	7.28MB/1.16MB	1	1h 41m 30s
g34/51692/2012@students	SSL Web	UoNFGW	11-09 12:22:55	41.90.132.48	7.47MB/170.82KB	1	6m 23s
d80/97329/2015@students	SSL Web	UoNFGW	11-06 14:30:25	41.215.139.20	5.66MB/1.69MB	1	1h 47m 34s
E96/93783/2013@students	SSL Web	UoNFGW	10-26 15:46:49	82.145.222.247	6.15MB/583.85KB	1	20m 4s
makinnah	SSL Web	UoNFGW	10-30 15:11:51	196.201.218.196, 197.136...	5.99MB/435.55KB	3	2h 21m 42s
d33/35294/2015@students	SSL Web	UoNFGW	10-26 13:40:32	105.164.231.73	5.00MB/1.24MB	1	1h 20m 58s
e35/3428/2015@students	SSL Web	UoNFGW	10-27 14:18:41	41.89.82.74	4.64MB/1.07MB	1	1h 18m 42s
D63/68654/2013@students	SSL Web	UoNFGW	10-27 15:21:07	62.24.108.151	4.80MB/168.23KB	2	1h 36m 34s
richard.onwonga	SSL Web	UoNFGW	10-28 12:36:57	197.232.14.151	4.02MB/316.14KB	1	1h 6m 32s
grace.mugira@uonbi.ac.ke	SSL Web	UoNFGW	10-24 13:59:37	105.166.249.141	3.73MB/192.23KB	2	1h 10m 11s
unitid1@staff	SSL Web	UoNFGW	11-03 13:50:40	41.89.91.62	3.22MB/153.29KB	1	1h 1m 40s
c50/80750/2015@students	SSL Web	UoNFGW	10-24 12:45:56	197.237.247.233	3.21MB/153.66KB	1	1h 0m 37s
D61/71107/2014@students	SSL Web	UoNFGW	10-26 08:52:20	41.222.14.89	3.03MB/304.60KB	1	1h 13m 23s
L50/73470/2014@students	SSL Web	UoNFGW	11-04 10:46:13	105.57.179.229	2.65MB/236.90KB	1	1h 2m 32s
b04/0872/2012@students	SSL Web	UoNFGW	10-28 10:24:14	154.122.112.126	2.45MB/154.75KB	1	1h 6m 43s
c01/0283/2012@students	SSL Web	UoNFGW	11-09 12:57:24	41.204.186.30	2.15MB/415.30KB	1	1h 10m 32s
rose.wandahi	SSL Web	UoNFGW	11-09 13:18:27	197.155.79.71	2.20MB/229.47KB	1	1h 38m 50s
D61/73686/2012@students	SSL Web	UoNFGW	10-27 15:23:48	197.248.178.150	2.21MB/175.70KB	1	50m 13s
G62/75250/2014@students	SSL Web	UoNFGW	11-04 13:10:03	105.60.247.148	1.93MB/277.34KB	1	50m 5s
kaduki	SSL Web	UoNFGW	10-24 00:12:06	105.60.86.68	1.69MB/365.73KB	1	1h 26m 22s
jwakonyo	SSL Web	UoNFGW	11-10 11:38:40	41.220.121.46	673.08KB/56.28KB	4	45m 30s
ckamau	SSL Web	UoNFGW	11-10 11:25:26	41.220.123.2	401.20KB/58.97KB	5	1h 49m 52s
mmuriuki	SSL Web	UoNFGW	10-22 12:06:50	41.220.121.46	345.40KB/32.84KB	1	13m 13s
geonjuguna	SSL Web	UoNFGW	10-29 12:34:17	41.220.121.46	347.24KB/30.83KB	1	7m 40s
rmasoka	SSL Web	UoNFGW	11-09 12:02:49	41.220.123.2	294.51KB/18.17KB	2	7m 34s
pwere	SSL Web	UoNFGW	10-26 12:12:36	41.220.123.2	282.76KB/20.16KB	1	4m 21s

Table 4.2.1: Remotely Accessed E-Resources According to Level of Education

RESPONDENT'S LEVEL OF EDUCATION		REMOTE ACCESSIBLE RESOURCES								
		E-JOURNALS	E-BOOKS	World Wide Web	ELECTRONIC THESES AND DESSERTATION	DIGITAL REPOSITORY	EAST AFRICANA	STAFF PUBLICATIONS	OTHERS	**Total**
DIPLOMA	Count	3	4	9	4	8	3	3	5	9
	% within $Education	33.3%	44.4%	100.0%	44.4%	88.9%	33.3%	33.3%	55.6%	
	% within $Resources	5.0%	6.9%	11.4%	6.6%	10.5%	16.7%	7.3%	12.2%	
	% of Total	3.8%	5.1%	11.4%	5.1%	10.1%	3.8%	3.8%	6.3%	11.4%
UNDERGRADUATE	Count	40	38	48	37	47	12	22	35	48
	% within $Education	83.3%	79.2%	100.0%	77.1%	97.9%	25.0%	45.8%	72.9%	
	% within $Resources	66.7%	65.5%	60.8%	60.7%	61.8%	66.7%	53.7%	85.4%	
	% of Total	50.6%	48.1%	60.8%	46.8%	59.5%	15.2%	27.8%	44.3%	60.8%
MASTERS	Count	17	16	22	20	21	3	16	1	22
	% within $Education	77.3%	72.7%	100.0%	90.9%	95.5%	13.6%	72.7%	4.5%	
	% within $Resources	28.3%	27.6%	27.8%	32.8%	27.6%	16.7%	39.0%	2.4%	
	% of Total	21.5%	20.3%	27.8%	25.3%	26.6%	3.8%	20.3%	1.3%	27.8%
Total	**Count**	**60**	**58**	**79**	**61**	**76**	**18**	**41**	**41**	**79**
	% of Total	**75.9%**	**73.4%**	**100.0%**	**77.2%**	**96.2%**	**22.8%**	**51.9%**	**51.9%**	**100.0%**

Percentages and totals are based on respondents.
A Dichotomy group tabulated at value 1.
**Note: The total number of respondents are more than 79 because the respondents used multiple data entry on the some question*

Table 4.2.1 above indicates that as compared to between Diploma (9[100%]), Undergraduate (48[100%]) and Master's (22[100%]) Students; All used World Wide Web (79[100%]) in that each and every respondent in one way or another used WWW to access given E-resource through remote access to e-resources differed from one level to another e.g. Most diploma students used other than WWW (100%), they accessed Digital Repository (8[88.9%]) which indicated (10.5%) e-resource usage in the study as compared to undergraduate (61.8%) and master's (27.6%), this clearly indicates that diploma students are the least users of Digital Repository among the three levels of education. Masters students (27.6%) come second with the majority being Undergraduates (61.8%) respectively. The study shows that the respondents with (41[51.9%]) used staff publications and other resources like social media e.g. Face book and LinkedIn as a way to access remote resources for their study. The study revealed that the least accessed and used e-resource for undergraduates was East Africana at 12 counts (25.0%) compared to their total count 48 respondents (100%). The research indicated that UoN DL Students at all levels did not prefer accessing and using East Africana since some had never accessed them and others perceived that the content was not well equipped with resources they needed to meet their learning needs. The research identified that WWW, Digital Repository and E-Resources at (79 [100%], 76 [96.2%] and 60 [75.9%]) respectively were referred by the UoN DL Students compared to others. The study also found that UoN DL undergraduate students with 48 [60.8%] accessed more online E-resources as compared to both diploma and masters students.

Table 4.2.2: Remotely Accessed E-Services as Per Level of Education

RESPONDENT'S LEVEL OFEDUCATION		REMOTE ACCESSIBLE SERVICES							
		WEB PORTAL	BOOKS-IN-PRINT DATABASE	TRIAL DATABASES	IMPORTANT LINKS	TITLE LISTING	TEACHING PROGRAMS	OPAC	**Total**
DIPLOMA	Count	5	0	0	3	4	8	7	8
	% within $Education	62.5%	.0%	.0%	37.5%	50.0%	100.0%	87.5%	
	% within $Services	7.9%	.0%	.0%	13.0%	6.8%	10.4%	10.0%	10.3%
	% of Total	6.4%	.0%	.0%	3.8%	5.1%	10.3%	9.0%	
UNDERGRADUATE	Count	39	22	7	12	36	47	47	48
	% within $Education	81.3%	45.8%	14.6%	25.0%	75.0%	97.9%	97.9%	
	% within $Services	61.9%	71.0%	58.3%	52.2%	61.0%	61.0%	67.1%	
	% of Total	50.0%	28.2%	9.0%	15.4%	46.2%	60.3%	60.3%	61.5%
MASTERS	Count	19	9	5	8	19	22	16	22
	% within $Education	86.4%	40.9%	22.7%	36.4%	86.4%	100.0%	72.7%	
	% within $Services	30.2%	29.0%	41.7%	34.8%	32.2%	28.6%	22.9%	
	% of Total	24.4%	11.5%	6.4%	10.3%	24.4%	28.2%	20.5%	28.2%
Total	**Count**	**63**	**31**	**12**	**23**	**59**	**77**	**70**	**78**
	% of Total	**80.8%**	**39.7%**	**15.4%**	**29.5%**	**75.6%**	**98.7%**	**89.7%**	**100.0%**

Percentages and totals are based on respondents.
A Dichotomy group tabulated at value 1.
**Note: The total number of respondents are more than 79 in total because the respondents used multiple data entry on the some question*

Table 4.2.2 Indicates that respondents at diploma level did not use Books-in-Print Database (BIPD) and trial database, some indicated that they had no idea that they existed; others did not show any interest for the service while others indicated surety that their learning need could not be fulfilled by the service. Teaching programs was the most vibrant Diploma (100%), Undergraduate (97.9%) and Masters (100%), this was due to the fact that most

teaching and learning materials are disseminated by lecturers online hence the entire UoN DL student fraternity had to access and use it to fulfill their learning needs. Online Publication Access Catalogue (OPAC), Web portal and Title Listing were services also used by diploma, undergraduate and master's at (70, 63 and 59) % respectively. The study also found that as compared to diploma and masters student respondents, undergraduate students used more services with 61.5%. At the same time it was found that trial databases were least accessed as compared to other services available by both diploma, graduate and masters students.

Table 4.2.3: Techniques Applied by UoN DL Students According to Level of Education

RESPONDENT'S LEVEL OF EDUCATION		RESPONDENT'S SEARCHING TECHNIQUES								
		ONE KEYWORD	MORE THAN ONE KEYWORD	DIRECT FROM URL	BOOLEAN OPERATION (AND,NOT,OR)	TRUNCATION E.G. LIBRARY*	USE OF HYPER LINKS	SUBJECT SEARCHING	AUTHOR/TITLE SEARCH	**Total**
DIPLOMA	Count	3	4	3	1	1	0	1	6	6
	% within $Education	50.0%	66.7%	50.0%	16.7%	16.7%	.0%	16.7%	100.0%	
	% within $Techniques	11.5%	13.3%	8.8%	2.8%	3.3%	.0%	2.9%	13.6%	
	% of Total	6.7%	8.9%	6.7%	2.2%	2.2%	.0%	2.2%	13.3%	13.3%
UNDERGRADUATE	Count	15	20	22	26	20	18	25	30	30
	% within $Education	50.0%	66.7%	73.3%	86.7%	66.7%	60.0%	83.3%	100.0%	
	% within $Techniques	57.7%	66.7%	64.7%	72.2%	66.7%	66.7%	71.4%	68.2%	
	% of Total	33.3%	44.4%	48.9%	57.8%	44.4%	40.0%	55.6%	66.7%	66.7%
MASTERS	Count	8	6	9	9	9	9	9	8	9
	% within $Education	88.9%	66.7%	100.0%	100.0%	100.0%	100.0%	100.0%	88.9%	
	% within $Techniques	30.8%	20.0%	26.5%	25.0%	30.0%	33.3%	25.7%	18.2%	
	% of Total	17.8%	13.3%	20.0%	20.0%	20.0%	20.0%	20.0%	17.8%	20.0%
Total	**Count**	**26**	**30**	**34**	**36**	**30**	**27**	**35**	**44**	**45**
	% of Total	**57.8%**	**66.7%**	**75.6%**	**80.0%**	**66.7%**	**60.0%**	**77.8%**	**97.8%**	**100.0%**

Percentages and totals are based on respondents.
A Dichotomy group tabulated at value 1.
Note: The total number of respondents is more than 79 in total because the respondents used multiple data entry on the some question

Table 4.2.3 indicates that, cumulatively, research technique applied mostly by respondents across all levels is search by "Author or Title" (44 [97.8%]), consequently the research showed that all masters level students (22 [100%]) applied five main techniques; Direct from URL, Boolean operation, Truncation, Use of Hyperlinks and Subject Search; this was due to the fact that the techniques provided the more needed and in-depth research work for their knowledge especially in their area of specialization and also for preparation for their final project works. The research also shows that Diploma students did not use the hyperlinks in search for the information online as compared to other links or techniques. The least used search technique is "one keyword" (26 [57.8%]). The study also reveals that undergraduate students with 66.7% used more techniques for their study work as compared to the other two (diploma and masters).

Table 4.2.4: E-Resources Formats as Preferred According to Level of Education

RESPONDENT'S LEVEL OF EDUCATION		RESPONDENT'S PREFEREED FORMAT												
		MOST PREFERED HTML	MOST PREFERED POWER POINT	MOST PREFERED MS-WORD	MOST PREFERED PDF	PREFERED HTML	PREFERED POWER POINT	PREFERED MS-WORD	PREFERED PDF	NOT PREFERED HTML	NOT PREFERED POWER POINT	NOT PREFERED MS-WORD	NOT PREFERED PDF	**Total**
DIPLOMA	Count	3	5	6	6	2	7	6	3	3	2	1	1	7
	% within $Education	42.9%	71.4%	85.7%	85.7%	28.6%	100.0%	85.7%	42.9%	42.9%	28.6%	14.3%	14.3%	
	% within $Formats	12.5%	14.7%	13.0%	12.2%	7.1%	24.1%	20.0%	13.0%	11.5%	12.5%	33.3%	14.3%	
	% of Total	5.2%	8.6%	10.3%	10.3%	3.4%	12.1%	10.3%	5.2%	5.2%	3.4%	1.7%	1.7%	12.1 %
UNDERGRADUATE	Count	14	17	30	25	20	13	19	15	16	10	2	5	30
	% within $Education	46.7%	56.7%	100.0%	83.3%	66.7%	43.3%	63.3%	50.0%	53.3%	33.3%	6.7%	16.7%	
	% within $Formats	58.3%	50.0%	65.2%	51.0%	71.4%	44.8%	63.3%	65.2%	61.5%	62.5%	66.7%	71.4%	
	% of Total	24.1%	29.3%	51.7%	43.1%	34.5%	22.4%	32.8%	25.9%	27.6%	17.2%	3.4%	8.6%	51.7 %
MASTERS	Count	7	12	10	18	6	9	5	5	7	4	0	1	21
	% within $Education	33.3%	57.1%	47.6%	85.7%	28.6%	42.9%	23.8%	23.8%	33.3%	19.0%	.0%	4.8%	
	% within $Formats	29.2%	35.3%	21.7%	36.7%	21.4%	31.0%	16.7%	21.7%	26.9%	25.0%	.0%	14.3%	
	% of Total	12.1%	20.7%	17.2%	31.0%	10.3%	15.5%	8.6%	8.6%	12.1%	6.9%	.0%	1.7%	36.2 %
Total	**Count**	**24**	**34**	**46**	**49**	**28**	**29**	**30**	**23**	**26**	**16**	**3**	**7**	**58**
	% of Total	**41.4%**	**58.6%**	**79.3%**	**84.5%**	**48.3%**	**50.0%**	**51.7%**	**39.7%**	**44.8%**	**27.6%**	**5.2%**	**12.1%**	**100.0 %**

Percentages and totals are based on respondents.
A Dichotomy group tabulated at value 1.
Note: The total number of respondents is more than 79 in total because the respondents used multiple data entry on the same question

Table 4.2.4 indicates that among the available e-resource formats the most preferred is PDF (49 [84.5%]), followed by Ms-Word (46 [79.3%]) then Power-Point (34 [58.6%]) and HTML (24 [41.4%]) respectively. The research indicates that, PDF was the most preferred by UoN DL students due to its compatibility, secureness (unlikely to be infected with virus) and user friendliness, on the other hard respondents' argued that most of the e-resources were mostly presented in PDF format hence its popularity and fondness. Among the preferred category Ms-Word emerged the victor with (30 [51.7%]) as compared to Power-Point (29 [50.0%]), HTML (28 [48.3%]) and PDF (23 [39.7%]), Respondents indicated that they preferred Ms-Word due to its ease of use and the fact that they could copy, edit and paste it for their day-to-day learning activities. Most respondents (26 [44.8%]) did not prefer HTML format of e-resource, they attested that the format did not have a user friendly interface and they did not find it presentable which made it quite difficult to manipulate, identify and use the particular HTML formatted e-resource. In reference to this statement, we can conclude that PDF is the most preferred format of e-resource by UoN DL students while the least preferred by the same is HTML format.

Table 4.2.5: Respondents Search Skills as Opposed to Level of Education

RESPONDENT'S LEVEL OF EDUCATION	Count	RESPONDENT'S SEARCHING SKILLS			
		NAVIGATIONAL SKILLS	FILTERING SKILLS	ADVANCED SKILLS	**Total**
DIPLOMA	Count	5	3	3	5
	% within $Education	100.0%	60.0%	60.0%	
	% within $Skills	7.5%	6.1%	6.4%	
	% of Total	7.5%	4.5%	4.5%	7.5%
UNDERGRADUATE	Count	41	32	26	41
	% within $Education	100.0%	78.0%	63.4%	
	% within $Skills	61.2%	65.3%	55.3%	
	% of Total	61.2%	47.8%	38.8%	61.2%
MASTERS	Count	21	14	18	21
	% within $Education	100.0%	66.7%	85.7%	
	% within $Skills	31.3%	28.6%	38.3%	
	% of Total	31.3%	20.9%	26.9%	31.3%
Total	**Count**	**67**	**49**	**47**	**67**
	% of Total	**100.0%**	**73.1%**	**70.1%**	**100.0%**

Percentages and totals are based on respondents.
A Dichotomy group tabulated at value 1.

Note: The total number of respondents is more than 79 in total because the respondents used multiple data entry on the some question

Table 4.2.5 above shows the skills students use in search of the data required for their studies. Both respondents with 67 [100%], opined that they used applied navigational skills in their remote search and retrieval of e-resources. The study also reveals that undergraduate students used more search skills as compared to diploma and masters students with 61.2% in general. The study shows that the least applied skill was advanced search skills with (47 [70.1%]). The research clearly shows that searching skills across all levels of education is the same though it defers in the number of students that apply the skill from one search to another. It can be inferred from the above study that both students from UoN DL used search skills to a higher level in their search.

4.5 Study Discussion

The study analysis interpreted variables under investigation and addressed research questions as well as the objectives. The study highlighted the following discussions based on the cross tabulated data:

4.5 (a) Discussion 1: on E-Resources Accessed by UoN DL Students

The e-resources and services available in the UoN remotely for students include; www, Digital repository, e-thesis, e-journal and e-books with more than 50 percent while only East Africana has less than 50 percent. Hence the data analysis addresses research question one and objective one on the e-resources available to UoN DL students.

4.5 (b) Discussion 2: on E-Services Rendered to UoN DL Students

The study reveals that there are a number of e-services that the University of Nairobi has for DL students. The study answers research question two. As per table 4.2.2, the analysis reveals that Teaching Program, Web Portal, OPAC, and Title Listing had more percentage combined as the best E-Services rendered to UoN DL Students. From the two above addressed research questions, it is clear that UoN has more e-resources and e-services accessible remotely by DL Students hence objective one has been addressed.

4.5 (c) Discussion 3: DL Students Search Techniques Applied and Formats Preferred

To study on search techniques revealed that UoN has a wide range of search skills as table 4.2.3 indicates. The percentage is more than 55 percent. This indicates that the university has enough e-resources remotely available for searching by students. The study addresses research question three and objective two respectively. On the format preferred for accessing e-resources DL UoN students, Table 4.2.4 indicated that PDF was the most preferred by most students while MS-WORD was not preferred by the same students. It is evident from the two analyses, objectives two and three, Research question three and four were adequately addressed. In reference to study objective four, the study revealed that most respondents covering all levels of education accessed and used same e-resources and e-services respectively although the magnitude differs, due to the number of respondents per level; Diploma, Undergraduate and Master's respondents accessed all e-resources though the percentages differed 11.4, 60.8 and 27.8 respectively.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter provides the summary of the findings of the study. Conclusions were drawn as well as steps to follow to ensure proper search techniques by University of Nairobi distance learning students. This is to ensure that they build a proper e-learning search, retrieval, and use methods to help them in their academic pursuit.

5.1 Summary of the Study

University students more often face an uphill task on finding the necessary required materials and service for their study, especially those undertaking the long distance learning. This study's investigation on remote access to library materials by distance learning students at the University of Nairobi has given light on those facilities. The discussion reveals how the research questions and objectives have been addressed. The E-Resources for example in the university of Nairobi shows that www, digital, repository, e-thesis, e-journal and e-books has more than 50 percent, a clear indication that there are a good number of E-Resources accessed, provided by the university. The other part of service provided by the University of Nairobi to the students as per the study include teaching programs, Web Portal, OPAC and Title listing. Equally the study reveals that the UoN students use other search techniques applied and formats preferred most, like; PDF as most preferred. The study is significant because the major research questions have been addressed and main objectives achieved. The population of the study was made up of the three distinctive study levels. Hence the study concludes that the E-learning required by the DL students are very critical to any good performance in the universities.

5.2 Summary of the Findings

The major findingsunder descriptive analysis was that:

1) Majority of respondents with 100 percent and 94.9 percent revealed that they used WWW and digital repository as their E-Resources as revealed in Table 4.2 and Figure 4.4 respectively.

2) Teaching program was the high consumed e-service by respondents at 97.46 percent while the least used was trial database at 15.18 percent as presented in Table 4.3 and Figure 4.5.
3) University of Nairobi DL students 55.69 percent very often use search engines e.g. Google and Yahoo to search for e-resources, while majority of the UoN DL students 58.22 percent found it most appropriate to choose different ways for example Boolean operators, truncation, or search phrases for searching e-resources for their need if a previous search did not return with the desired resource.
4) The respondents with percentages 63.29, 60.75 and 58.22 respectively revealed that the UoN DL students faced challenges on the credibility of e-resources, information overload and high cost of accessing e-resource.
5) Majority of the DL students face issues of information overload i.e. too much information to contend with when they conduct searches 60.75 percent. Similarly, some of the respondents indicated that they lack requisite skills to effectively search for e-material on the web 21.51 percent.
6) Search technique applied mostly by respondents across all levels is search by "Author or Title" 97.8 percent, consequently the research showed that all masters level students 100 percent applied five main techniques; Direct from URL, Boolean operation, Truncation, Use of Hyperlinks and Subject Search in accessing e-resources.
7) Diploma students did not use the hyperlinks in search for e-resources as compared to other links or techniques. The least used search technique is "one keyword" 57.80 percent. The study also reveals that undergraduate students with 66.7 percent used more techniques for their study work as compared to other levels.
8) On available e-resource formats the most preferred by respondents is PDF 84.50 percent while Ms-Word is the preferred format at 51.70 percent.

5.3 Conclusion

From the analysis and the summary of the findings, it could be concluded that Distance learning students in the University of Nairobi made good remote use of e-resources and services available for use on the university's portal and the web as well

ellaborated in research discussion 4.5(a) and 4.5(b) respectively. It can also be concluded that Distance learning students of the University of Nairobi have realized and have come to terms with the web knowing fully well that it is packed full of resources that they need for their academic advancement and research productivity. However, many of the Distance Learningstudents have developed poor remote searching habits making them lack information in a rich remotely accessed e-resource environment. This couldbe attributed to their inability to harness properly the resources available for them remotely by understanding in-depth the areas of their research interest and performing a careful and yet successful e-resources search to yield required results. It is not enough for the Distance Learning students to be in the habit of going direct to search engines when searching for resource materials, but they are also to visit libraries and resource centers to help build up better remote searching habits.

There is no doubt that if this is done it will go a long way in helping distance learning students in their quest for information in the remote environment.

5.4 Recommendations

Based on the findings and conclusion of this study, the following recommendations were drawn:

1. The University Library should intensify the existing training programme for distance learning students on how to effectively search for e-resources remotely.
2. The university management should look into the distance learning curriculum and consider including a course that has to do with effective utilization of all e-resources provided by the university. It is suggested that this course should be taken by all Distance Learning students and it should be anchored to the academic library.
3. To build good and proper e-resource remote access, it is recommended that students attend training sessions organized by the university management or library to keep themselves abreast of latest skills and technologies available.
4. The researcher suggests the University of Nairobi should continue expansive exchange programs with other Universities abroad to help bridge the gap of information literacy.

5. From the research findings, UoN library should ensure that most e-resource materials are presented in formats that are mostly preferred by students in order for them to feel comfortable in pursuing their education
6. The respondents with percentage 63.29, 60.75 and 58.22 respectively revealed that the UoN DL students faced challenges on the credibility of e-resources, information overload and high cost of accessing the information. Hence it's recommended that the university should lower down the cost of accessing the e-resource by adopting the large fiber optic facilities that will help faster information download and make sure that they procure the credible sources of services.

5.5Suggestions for Further Research

1. E-Resource accessibility by Students within intranet range in the University of Nairobi.

2. Comparative analysis of e-resources among the various Kenyan Universities.

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APPENDICES

Appendix I: Questionnaire

Section A: Demographic information

1. Gender of the respondent :

   Male { }

   Female { }

2. Do you own a mobile device e.g. smartphone, tablet, laptop etc.? Yes { } No { }

   If yes above please

   specify_____

3. If the answer to one above is yes, what do you use the device for?

   a) For calling friends { }
   b) For playing games { }
   c) For sending and receive SMS messages { }
   d) For educational purpose { }
   e) Others (Specify)……..

4. Age of the respondent

   Below 20 years { }

   21-29 years { }

   30-39 years {}

   40-49 years {}

   50 years and above {}

5. Duration of study at the University of Nairobi

   0-2 years {}

   3-4 years { }

   5-6 years { }

6. level of education

   College diploma { }

   Degree { }

   Masters { }

   Doctorate { }

Section B: - Identification of Remotely accessed Resources and Services.

7. Indicate the type of e-resources available remotely for students in UoN

(a) e-journals{ }

(b) e-books { }

(c) Books-in-Print Database (BIPD){ }

(l) Electronic theses and dissertations { }

(m) Digital Repository { }

(n) East Africana { }

(o) Staff Publication { }

(o) Others Specify_____

8. Indicate the type of online information services available for students in UoN

(a) Online Catalogue { }

(b) Electronic newsletters and journals { }

(c) Current awareness services { }

(d) Blogs { }

(e) Online reference service { }

(f) Online tutorials { }

(g) Electronic theses and dissertation { }

(h) Web portal { }

(i) Other Specify_____

Section C: Identification of Use Device Sources and Format of e-resources

9. Indicate devices you normally use when accessing library e-resources remotely.

Please Note: {Mostly Use =1, sometime Use =2, Use =3, Not Use =4, Never Use =5} pick all that apply

	Use Device	**1**	**2**	**3**	**4**	**5**
A	Laptop					
B	Palmtop					
C	Desktop					
D	Smartphone					
E	Tablet					
F	IPad					

10. Indicate the degree of usefulness of the following e-resources.
Please Note: {Most Useful =1, Quite Useful =2, Useful =3, Not Useful =4, Never Useful =5}

	Source of e-resource	**1**	**2**	**3**	**4**	**5**
A	Books-in-Print Database (BIPD)					
B	e-journal					
C	e-book					
D	OPAC					
E	Electronic Theses and Dissertation					
F	WWW					

G	Digital Repository					
H	Staff Publication					

11. Indicate the format you prefer to access e-resources.
Please Note: {Most Preferred=1, More Preferred =2, Preferred =3, Not Preferred =4, Never Preferred =5}

	Format of e-resource	**1**	**2**	**3**	**4**	**5**
A	HTML					
B	POWER-POINT					
C	MS-WORD					
D	PDF					

12. What determines your choice of e-resources in your area of research? Pick as many as possible.

(a) Accuracy { }

(b) Reliability { }

(c) Relevance { }

(d) Convenience { }

(e) Accessibility { }

(f) Proximity { }

(g) Timeliness { }

(h) Speed { }

(i) Others Specify_____

Section D: Remote Access Search Techniques

13. What kind of search techniques do you use when accessing e-resource remotely?
Please Note: [Never apply=1, Rarely apply=2, Often apply=3, Quite often apply=4, Very often apply=5] Pick as many as applicable

	E-Resource Search Technique	1	2	3	4	5
A	One keyword					
B	More than one keyword					
C	Directly to URL					
D	Boolean Operators {OR, AND, NOT}					
E	Truncation e.g. Library*					
F	Use of Hyperlinks					
G	Subject Searching					
H	Author/Title Search					

14.If your techniques in 13 above does not return satisfactory results, how do you modify your search?

Please Note: - Tick all that apply

	E-Resource Search Technique	
A	I choose different key word(s)	
B	I choose different information source (e.g. Search engine, database, journal etc.)	
C	I change initial search technique (e.g.) I use Boolean operators, truncation, search phrase instead of key words etc.	
D	I suppose that there are no satisfactory results and stop the search process.	

15. Which of the following skills do you adopt when remotely searching for e-resources?

(a) Navigational Skills { }

(b) Filtering Skills { }

(c) Advanced Search Skills { }

(d) None of the above { }

16. Do you evaluate the quality of information you retrieve?
(a) Yes { }

(b) No { }

17. What aspect of the information do you evaluate?
(a) Accuracy { }

(b) Reliability { }

(c) Convenience { }

(d) Accessibility { }

(e) Timeliness { }

(f) Others----------{ Please Specify}

18. Problems encountered while using e-resources and services. Please Note: - [Strongly Disagree=l, Disagree=2, Indifferent=3, Agree=4, Strongly Agree=5]. Pick as many as applicable

	Problems Encountered	**1**	**2**	**3**	**4**	**5**
A	Information overload (or too much information)					
B	The need to filter the results from search					
C	Download delay					
D	Problem with credibility of information					
E	Failure to find information					
F	lack of search skills					
G	High cost of access					
H	Power outages					
I	Inaccessibility of some websites					
J	Difficulties in navigation of some websites					

18. What training or orientation do you possess on how to use remote accessed information?

(a) Library organized remote access training { }

(b) Search and retrieval course { }

(c) Workshop and seminar on Internet use by faculties { }

(d) External training in other institutions or centers { }

(e) Learnt from colleagues { }

Thank you for your Time