DISTANCE LEARNERS' USE OF ELECTRONIC RESOURCES
AT COLLEGE OF EDUCATION, UNIVERSITY OF RWANDA

Alice Murebwayire

MA (Information Studies) Dissertation
University of Dar es Salaam
October, 2022

DISTANCE LEARNERS' USE OF ELECTRONIC RESOURCESAT COLLEGE OF EDUCATION, UNIVERSITY OF RWANDA

By

Alice Murebwayire

A Dissertation Submitted in Partial Fulfillment of the Requirement for the Degree of Master of Arts in Information Studies of the University of Dar es Salaam

University of Dar es Salaam
October, 2022

CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by the University of Dar es Salaam, a dissertation titled: *"Distance Learners' use of Electronic Resources at College of Education, University of Rwanda",* in partial fulfillment of the requirements for the degree of Master of Arts in Information Studies of the University of Dar es Salaam.

…………………………………

Dr. Ireneus Luambano

(Supervisor)

Date………………………………

DECLARATION
AND
COPY RIGHT

I, **Alice Murebwayire,** declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

Signature………………………………

ACKNOWLEDGEMENTS

First and foremost I am extremely grateful to the Almighty God for his great mercy and love for granting me good life and, finally, complete my dissertation at the Information Studies Programme of the University.

I am privileged and appreciative to my supervisor, Dr. Ireneus Luambano, for his patience, motivation, enthusiasm and immense knowledge. I also express my sincere respect and gratitude for his extraordinary support during the dissertation writing process. His guidance helped me all the time of research and while working of this dissertation. I cannot imagine having a better advisor and mentor for my dissertation. I would like to thank and acknowledge all my lecturers and classmates at the University of Dar es Salaam for their company and support they gave me throughout the course of my studies.

My gratitude extends to my Employer, University of Rwanda-College of Education, for granting me a permission to attend this programme. My appreciation is extended to the funder, SIDA-Swedish International development Cooperation Agency through the UR-Sweden Programme for Research and Institutional Advancement, forgiving me a scholarship that in one way or another help in attainment of this programme and facilitates the life during my studies.

I am thankful to my mum for your prayers, love and caring all the time. To my Sisters and brothers and In-laws, thank you for their valuable love, encouragement and prayers. Special thanks to my families Mr. Kamanzi Maurice, Mrs. Dusabe Gaudence and Twahirwa Michel for your support and encouragement during hard times.

My special thanks go to my husband and Son. I really appreciate every moment, support, love and help that lead to the completion of this study. Thanks a lot to make my studies possible. Thank you all.

DEDICATION

This dissertation is dedicated to my beloved husband, Elysée Rufoko Mushime, my Son, Elvin Mushime Cyusa, my mother, sisters and brothers who have been my source of inspiration. They have given me the strength and discipline to work with enthusiasm and determination.

LIST OF ABBREVIATIONS

CD-ROM	Computer Disk Read Only Memory
DL	Distance Learning
DTP	Distance Training Programme
ICT	Information and Communication Technology
ODL	Open and Distance Learning
OL	Open/online Learning
SPSS	Statistical Product and Service Solutions
UNISA	University of Africa
UR-CE	University of Rwanda-College of Education
U.S	United States

ABSTRACT

This study examined the distance learners' use of electronic resources at College of Education, University of Rwanda. Specifically, the study determines the types of electronic resources used by distance learners; the purpose of using of electronic resources among distance learners; and challenges faced by distance learners in the usage of electronic resources. The study used descriptive research design. The study employed both quantitative and qualitative research approaches. Primary data was collected from questionnaires, face-to-face interviews and field observations while secondary data was collected through documentary review. The analysis of quantitative data was done using Statistical Product and Services Solutions (SPSS) version 21 and Microsoft Office Excel 2010, while, qualitative data was analyzed by using thematic analysis technique. The study findings show underutilisation of the electronic resources by distance learners as few of them indicated using e-journals, scholarly online databases and institutional repositories, with reliance in the use of search engines. Findings show that the major purposes of using e-resources among respondents are to support assignments and recreational purposes, with the least use being supporting literature review, and preparation of workshop/seminars. These findings show that distance learners do not make effective use of e-resources to support learning and research although majority of them indicated to be satisfiedwith the e-resources. Additionally, lack of access to the internet, expensive internet, financial constraints, slow internet access speed, poor network infrastructure and limited number of computers are among the major factors that hinder distance learners from proper and effective usage of the electronic resources for academic purposes. Based on the findings, the study recommends provision of training on effective use of the internet to distance learners, awareness creation on variousscholarly online resources to support learning, and provision of sufficient, faster, reliable and free internet access to distance learners.

Keyword: distance learners', electronic resources, University of Rwanda,

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF PLATES

CHAPTER ONE
INTRODUCTION

1.1   Introduction and Background to the Problem

Globally, education has been delivered by using traditional methods whereby interaction between teachers and students has been in a physical classroom. Indeed, the interaction between teacher and students is widely regarded as an essential component of learning process. To date, the advancement of technology has challenged the traditional delivery systems, whereby the use of information technology (IT) allows different methods of education delivery such as open/online learning (OL) and distance learning/education (DL) as a new method of learning (O'Malley & McCraw, 1999). The advent of these two delivery systems; open and distance learning (ODL) is prominently being adopted as the next logical step in education systems worldwide.

The open and distance learning for teaching is emerging as a growing trend in Africa and electronic resources are gaining broader acceptance among higher learning institutions, particularly ODL-based institutions, both to teach and receive feedback from students (Ivy & Jane, 2016). The advantages of electronic resources over print resources cannot be exaggerated. Electronic resources usually allow remote access throughout the day (24/7), allowing access to huge numbers of resources at a very low cost, promoting effectiveness in the dissemination of information, can be more easily updated, save space, are easy to maintain, and have searching capabilities that are not available in print (Ani, 2013; Dubale, 2019; Dayakar, 2018). Also, electronic resources have enabled libraries to serve their users better, as they allow users'access to a wider range of materials even those that are not held locally by their libraries. Among of the services offered by the electronic resources in the library include, e-mail services; online cataloguing and classification service; online internet search services; customer care services; management of online databases; online reference services; etc. (Ekere *et al.*, 2016). Information and communicationtechnology (ICT) is a modern tool that provides access to information, in specific terms, known as electronic resources. The developing ICT involves "the application of computer and communication technologies to information handling" (Oketunji *et*

al., 2002: 3). Grace *et al*. (2004: 2) described ICTs as "tools that facilitate the production, transmission, and processing of information". Moahi (2009) claimed that ICTs have allowed effective management of information in universities and that this has led to improved access to information. Hence, the degree to which ICTs are adopted within a given African university (in different departments/faculties, libraries, and computer centers) will definitely determine the extent and level of accessibility and utilization of electronic resources by academic staff and students, particularly distance learners, in their research and studies respectively, and this can increase efficiency and competitive advantage in the research and learning process (Moahi, 2009). Moreover, together with the availability of ICT tools and internet connection, to have full utilization of electronic resources, one needs to have knowledge and skills in using those electronic resources (Burgstahler, 2002, cited in Hamutumwa, 2014).

Despite the widespread applications of ICT and its associated impact on research and learning in universities around the World, it has been reported that un-favorable ICT infrastructures predominates in the African universities including Rwanda University (Ani, 2013). For example, Missen *et al*. (2010: 1) reported that "African universities are years, perhaps decades, away from reliable and robust full Internet connectivity" as compared to universities in developed countries. Indeed, internet connections that facilitate the usage of electronic resources in African universities, including Rwanda University, are not widely spread (Ndayambaje *et al.,* 2015). Therefore, to motivate the use of electronic resources for African universities, including Rwanda University, there is a need for ICT infrastructure to be redressed and overhauled.

The Government of Rwanda recognizes that open and distance learning (ODL)should be used in higher education with the aim of offering a second chance for thosewho have been unable to benefit from conventional higher education. But also, ODL is considered as a means of increasing access to education for students from remote areas (Ministry of Education, 2008). Statistics from Rwanda Higher Education Council revealed the rise in student enrollments in 2014, whereby the day programmes were estimated to be 62%, while evening and weekend programmes

represented 36%, and only 2% represented ODL programmes (Ministry of Education, 2015b). Different government policies and strategic plans have recommended ODL as one of the strategies that can address this growing demand for higher education (Ministry of Education, 2016c).

The University of Rwanda is one of the universities offering education using the ODL mode of delivery. The University of Rwanda-College of Education (UR-CE) is one of the six constituent colleges of the University of Rwanda but the only college with ODL programmes, created after the merger of all public higher learning institutions in Rwanda in 2013. It was established with the intention of positively changing the landscape of human resource development, especially in the education profession (University of Rwanda Prospectus, 2021). The effectiveness of the ODL highly depends on the availability of the appropriate electronic resources. This is because, through the use of electronic resources, a distance learner can have easy access and smooth learning even in remote areas (Ani, 2013). It is within this setting that the study aims to assess the use of electronic resources among distance learners at College of Education, University of Rwanda.

1.2   Statement of the Problem

Open and distance learning has been adopted globally because it is thought to provide easy and unlimited access to education for all community members. To date, the usage of electronic resources has not gained the utmost attention from students, teachers, and other academic researchers across the globe (Hamutumwa, 2014).Several studies have revealed the usage of electronic resources in higher learning institutions, particularly those offering education through ODL, seems to be completely underutilized (Mporananayo *et al*., 2020). This could be attributed to; students' lack awareness of the available electronic resources, lack adequate infrastructure, lack of working and teaching-learning materials, lack of professional teaching assistants, difficulty in understanding some of the contents, limited interaction between trainers and trainees and inability of trainees to utilize electronic resources. Additionally, the underutilized electronic resources could result in improper learning processes through ODL (Ani, 2013). Studies on use of electronic

resources have concentrated on the access and usage of electronic resources in the library by teachers and students (see Hamutumwa, 2014; Dubale, 2019; Olaniran *et al.,* 2017; Ani, 2013). The extent to which electronic resources are utilized has also not received much attention. Therefore this study differs, as it concentrates on the access and usage of electronic resources among distance learners at the College of Education, University of Rwanda.

1.3   Objectives of the Study

This section elaborates study objectives. Sub-section 1.3.1 states the main objective while sub-section 1.3.2 outlines the specific research objectives.

1.3.1   General Objective

To assess distance learners' use of electronic resources at College of Education, University of Rwanda.

1.3.2   Specific Objectives

The specific objectives of the study were to:

i.   To determine the types of electronic resources used by distance learners at College of education, University of Rwanda.

ii.   Determine the purposes of using electronic resources among distance learners.

iii. To examine the challenges faced by distance learners in the usage of electronic resources.

1.4   Research Questions

The study responded to the following research questions:

i.   What types of electronic resources are used by distance learners at College of education, University of Rwanda?

ii.   For what purpose do distance learners use electronic resources?

iii. What are the challenges faced by distance learners in the usage of electronic resources?

1.5   Significance of the Study

This study was very important as it aimed at assessing the use of electronic resources among distance learners, and also raising awareness of electronic resources among students. The findings of this study contributed to the existing and future literature on issues related to electronic resources and ODL. More importantly, the findings of the study served as a foundation for supplementary ideas in academic teaching, particularly the role of electronic resources in facilitating ODL. Furthermore, the study findings will help all academic stakeholders and policymakers in the creationof an appropriate environment for the proper usage of electronic resources for effective ODL.

1.6   Scope and Limitations of the Study

The study intended to examine the use of electronic resources among distance learners at the College of Education, University of Rwanda. The University ofRwanda (UR) is the only university in the entire country offering educational studies (former DTP) through open and distance learning. The study was limited only to students (former DTP), including both diploma 1 & 2 of the College of Education - UR. Moreover, limited time and Covid-19 restrictions were the other limitations.

1.7   Definition of Key Terms

Distance Learning

The term can be defined as "a system that promotes the self-teaching-learning process with potentially greater geographic coverage than traditional face-to-face education". In distance learning, learners are physically separated from their tutors and their institutions of instruction (Aramide & Bolarinwa, 2010:2). The same definition was adopted by the study.

Open Learning

This can be defined as the process of creating an education system which enables learners to study on their own. Learners are scattered from their usual learning experience by time and space, but usually are guided through several supports such as media (UNISA, 2018). The same definition was adopted.

Open and Distance learning

The term can be defined as the approaches that provide education and training through open access. Learners are freeing from time and space constraints and therefore, offering learning opportunities to individuals and groups of learners (UNISA, 2018). The study adopts the same definition.

Electronic Resources

This can be defined as the library resources that can only be accessed with the aid of computing devices such as laptops, tablets, and smartphones (Ukachi et al., 2014). The study adopts the same definition.

Information and Communication Technology

The term refers to a range of technologies and tools used to create, collate and communicate information and knowledge. Usually, ICTs facilitate either one-way or two way communication modes. For example, television, radio, computer and telephone (UNISA, 2018). In this study, the term information and communication technology refers to all means which facilitate easy communication through ODL to learners.

CHAPTER TWO
LITERATURE REVIEW

2.0   Introduction

This chapter serves as a benchmark as it reveals what other scholars has found out in relation to the same issue; assesses the use of the electronic resources among distance learners, and also points out the theory which supported the study. The literature review is arranged in sections reflecting the study-specific objectives. Section one reviews types of the electronic resources used by distance learners, section tworeviews the purposes of using electronic resources among distance learners, and section three reviews the challenges facing distance learners in the usage of electronic resources.

2.1   Theoretical Literature Review

This part elucidates various theoretical literature review that help in elaborating issues under investigation.

2.1.1   Overview of Electronic Resources

According to Swain and Panda (2009:76), the term electronic resources (e- resources) is considered as the "multi-platform, synchronous/asynchronous information-supply instruments that are accessible through information and communication technology (ICT) contrivances by multiple users at different locations". Usually, an electronic resource embodies data and/or computer programs that have been encoded and therefore, they read and process data into readable formats through the help of exterior devices that are connected to the computer (Reitz's, 2004). Furthermore, electronic resources are vital tools used in research, as a subset of academic libraries but also an important academic resource which is used in teaching, learning, and research activities particularly to distant learners (Dadzie, 2005; Liyi *et al*., 2011). Also, electronic resource is "an organized collection of digital publications; a numerical, text-based and graphical electronic product that represents the electronic version of the information. Different organizations specializing in either a single discipline or multiple disciplines host and regularly update these electronic resources" (Lee & Boyle, 2004:5; Natarajan *et al*., 2012:48).

Hawthorne (2008:1) showed the stages of how electronic resources developed starting in the mid-1960s as follows, "machine-readable catalog (MARC); online public access catalog (OPAC); bibliographic databases; and CD-ROM databases. The online/web-based databases ushered in electronic serials/books of the 21st century. Due to the ease of/quick information retrieval features of electronic resources, its demand has increased exponentially making academic libraries/information centers strive to upgrade their status by providing online access to these electronic resources". Moreover, according to Swain & Panda (2009) and Thomas, *et al.* (2010) the role of libraries gradually changed from information depotsto information institutions, and finally to centers of knowledge where it guides access to information. The advent of ICT has transformed library services procedures and structures into academic libraries/information centers by making electronic resources easily accessible and available.

2.1.2 Types of Electronic Resources

Following the development of ICTs in various sectors, the world has also beheld massive evolutions allied with modern day technologies that are seem to be decisive tools in the retrieval of information through electronic resources (Thanuskodi, 2011). Indeed, the choice of electronic resources usually "entails proper development of collection policies, an organization of relevant collections putting into consideration acquisition cost and adequate knowledge of user needs" (Gandhi, 2003:146). Electronic resources are categorized into the following; electronic books, electronic journals, electronic newspapers, electronic magazines, electronic thesis, electronic clipping, electronic patents, electronic standards, multimedia products, full-text databases, statistical databases, image collections, reference databases, indexing and abstracting databases (Anand, 2014). All of the mentioned types of the electronic resources help to make the learning process smooth to distance learners as they highly depend on electronic resources in delivery of education. Moreover,during learning, distance learners use electronic resources freely or through fee-basedaccess.

2.1.3   Benefits of Using Electronic Resources

It has been observed that the value of any type of library depends not only on the massiveness of its collections, but rather depends on the way its resources are professionally used (Erich, 2013). The usage of electronic resources by research scholars has been increased due to the fact that the majority have become addicted to electronic resources and therefore, used these electronic resources as common tools in their daily academic activities (Amjad *et al*., 2013). To date, as physical library collections changed into electronic and stored in virtual spaces, it is argued that distance learners are encouraged to develop habits of using electronic resources (Kennedy, 2013). Okiki (2012:1) stated that "almost all academic materials are available and accessible on the internet improving the value and usage of information resources over time".

The usage of electronic resources has been beneficial to the users particularly those who are studying through ODL. Some of the benefits of the electronic resources to distance learners as observed by Okello-Obura & Ikoja-Odongo (2010), and Amjad, *et al*. (2013) are; ease of access to relevant and current information, saving time in the access to information, allowing into wider access, and it has low cost of information access. But, Okiki (2012) stressed, authenticity and reliability of electronic resources as among the key factors that affect the positive usage of electronic resources to distance learners. However, when compared to print resources, the richness of electronic resource content has been one of the factors for the high usage of electronic resources by distance learners (Egberongbe, 2011). Moreover, electronic resources accommodate large information with minimaluse of space, and can be accessed and shared among distance learners regardlessof time and location, but more importantly have the capacity to greatly expand its collections (Liyi *et al*., 2011).

2.2   Empirical Literature Review

This section provides a discussion on previous studies which are related to this study. The arrangement of the literature review sections is in accordance with the study objectives.

2. 2.1 Types of the Electronic Resources used by Distance Learners

In order to frequent use, boost acceptance and increase usage of the electronic resources, one needs to understand the benefits and features associated with each type of electronic resource (Rehman *et al.,* 2010). This would further help to understand how an individual makes a decision of selecting and using electronic resources (Tao, 2008). There are various types of electronic resources used, but they are always accessed with the help of devices such as computers, radio and television sets, and mobile phones, among others (Butcher, 2015).

Tao (2008) researched the intention to use electronic information resources: a theoretical extension of the Technology Acceptance Model. The findings revealed that internet, web 2.0, e-journals, e-books, CD-ROM are the main types of theelectronic resources used by the majority of the distance learners in the United States (U.S). Ease of use, ability to search multiple files at the same time, ability to save, print and repeat searches, more frequent updating, and the ability to access information from outside the library are among the factors contributed to the high usage of these types of electronic resources over others.

Sivakumaren, *et al*. (2012) examined the usage of library resources and services among distance learners in Tamil Nadu, India. The study found that e-journals and web 2.0 were the major types of electronic resources mostly used by the distance learners taking part in their study. Ease of access, ease of printing, and ease of searching are among the most commonly cited reasons for preferring the usage of these two types of electronic resources.

Hamutumwa (2014) examined electronic resources used by distance learners at University of Namibia. The study found that, in general, the usage of internet/the web, electronic journals and online databases were observed to be the main types of electronics highly used by the distance learners in Namibia. Low costs, ease of use and time saving were identified to be the attributable factors for dominance of the usage of these electronic sources.

Olaniran, *et al*. (2017) researched on assessing the utilization level of e-learning resources among ODL based pre-service teacher trainees in South Africa. The findings show, e-journals & e-books, radio & TV-broadcasts, blackboards & Moodle, web 2.0 & social media, CD-ROM were the major types of electronic resources used by the majority of distance learners. Ease of access, ease of searching and time saving were observed to be the reasons behind using these electronicresources.

The above studies relate with the current study as they explore various types of the electronic resources such as internet, web 2.0, e-journals, e-books, CD-ROM, and Moodle, used by the students particularly distance learners. Additionally, they add that the decision to use of any type of the electronic resource usually depends on the ease of use, perceived usefulness and/or skills and competences on using such electronic resource.

2.2.2   Purpose of using Electronic Resources among Distance Learners

In order to frequent use, boost acceptance and increase usage of the electronic resources, one needs to understand the benefits associated with them but also attitudes of an individual (Rehman, *et al.,* 2010). This will further help to understand how an individual makes a decision of selecting and using electronic resources (Tao, 2008).

Tao (2008) in his study found that the major purpose for using e-resources among distance learners in the US was to gain knowledge. Ease of use, ability to search multiple files at the same time, ability to save, print and repeat searches, more frequent updating, and the ability to access information from outside the library are among the factors contributed to the high usage of the electronic resources over print resources.

Sivakumaren et al. (2012) in their study found that, distance learners at Tamil Nadu, India accessed online databases to get information to support their assignments. Ease of access, ease of printing, and ease of searching are among the most commonly

cited reasons for preferring online database services appears to be the main attributable factors for the dependence of the electronic resources.

Hamutumwa (2014) in his study found that, distance learners in Namibia used e-resources for the purpose of gaining knowledge. Moreover, the study found that comparatively, distance learners preferred using print resources than electronic resources.

The above studies relate with the current study since they indicate that in both developed and developing countries, most of the distance learners have been using various types of electronic resources to the large extent. However, the findings of the reviewed literatures paved the way to the current study as they pinpoint the frequencies of using electronic resources but also the factors that encourage distance learners either to use or not to use electronic resources.

2.2.3 Challenges faced in usage of the Electronic Resources among distance learning

The use of electronic resources for ODL in Rwanda has been a challenge for a decade (Ndayambaje et al., 2015). Harerimana and Mtshali (2018) researched on implementing e-learning in resource-constrained nursing education institutions in Rwanda. The study found limited access and expensive internet, lack of assistive devices and IT skills, unattractive and ineffective content, and management blended teaching methods to be among the challenges facing Rwandan students on the usage of electronic resources for effective ODL. Hamutumwa (2014) in his study found that slow internet access speed, overloaded with information and equally felt that they do not have enough time to search for information and lack of enough time to search for information as the main challenges facing most of the distance learners when using electronic resources.

Chaputula (2011) researched on State, adoption and use of ICTs by students and academic staff at Mzuzu University, Malawi. The study found that among the challenges faced distance learners from accessing electronic resources were poor

network infrastructure, limited number of computers, and high cost of internet access, persistent power outages, and the lack of relevant ICT skills, among others.

Dadzie (2005) researched on electronic resources: access and usage University College. The study found that inadequate computers, lack of information on how to use electronic resources and lack of time to acquire skills needed to use resources are among the major factors that hinder distance learners from effectively use of the electronic resources.

These studies relate with the current study as they indicate various challenges faced distance learners particularly in the developing countries on the usage of the electronic resources. Moreover, they will help researcher to make comparisons of the identified challenges in the reviewed literatures and those that will be found in this study. More importantly, the findings of the reviewed literatures assist researcher in the current study to make appropriate recommendations.

2.3   Theoretical Framework

A theoretical framework is considered as "a conceptual model of how someone or something logically makes sense of the existing relationships of the identified factors as something important to the investigated research problem" (Sekaran, 2003:87). Theory has been used to explain how and why variables are related to each other, and therefore considered as a link between those variables (Creswell, 2012). This study was guided by the model known as Modified Wilson (1999) Model of Information Seeking Behaviour as presented in sub-sections that follow.

This study adopts Wilson's Model of Information Seeking (Wilson, 1999). The Model provides a theoretical framework for the present study. The model was selected since it was specific to information-seeking behaviour and the factors that hinder access to electronic resources. Therefore, the model is considered to fit the purpose of guiding this study. The model consists of 12 components that represent the information-seeking process as seen in Figure 2.1.
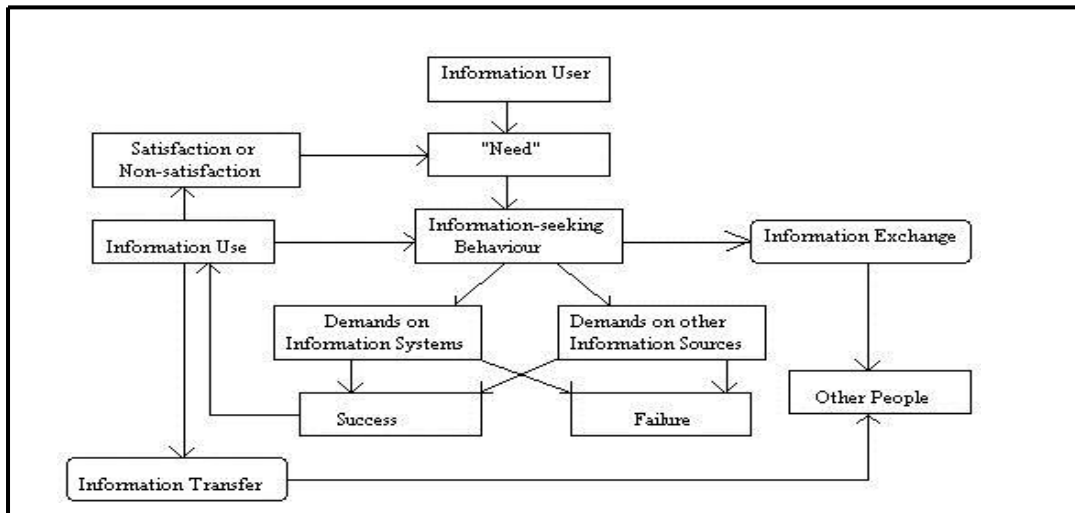
Figure 2.1:   **Wilson's Model of Information Seeking**
Source: Wilson (1999)

Wilson's Model reveals that information-seeking behaviour rises as a consequence of a need perceived by the information seeker who has a need and wish to find sources that will help to meet the arises need. Wilson's Model explores numerous strengths. For example in this study, it provides a good frame for thinking about the process of information seeking through electronic resources and then makes use of the information found to facilitate smooth ODL. According to the model, an information seeker can use various online sources such as journals, databases, website and Moodle, in the search for information to meet a need. Based on information sources used, distance learner can be satisfied or not satisfied in relation to one's information need. The model is used to find the current electronic resources and the factors that hinder access and utilization of electronic resources provided by the University of Rwanda-College of Education. In this case, the model tries to answer all objectives of the study. However, the model identifies success or failure as part of the outcomes of accessing electronic resources, on the other hand.

As viewed on the Wilson's Model, the study used several variables, namely information user, needs, information seeking behaviour, demands of information systems and information sources, failure and success, information use and satisfactions or non-satisfactions. For the purpose of this study, information user

mean distance learner, need mean purpose of using e-resources, information system and sources mean types of e-resources and skills/competences distance learner had in using e-resources and failure means challenges that hinder distance learner in using e-resources.

Therefore, the study operationalize as, for a distance learner to develop a seeking behavior there are should be a reason or purpose (need) that will drive him/her to use such electronic resources. Indeed, that reason could be for supporting assignment, recreation, writing literature, gaining knowledge or preparation for workshops. From there, a distance learner will now decide the type (information system and information source) of the electronic resources such as search engines, online database, institutional repository, e-journal, e-book, etc., which he/she think might give or provide the needed information. Moreover, for a distance learner to becapable of using those types of the electronic resources he/she should be competent or skilled in ICTs including proper usage of the computers, internet, having searching techniques, etc. Furthermore, to reach into success factors such as lack of access to the internet, expensive internet, financial constraints, slow internet access speed, poor network infrastructure and limited number of computers should be overcome. Finally, distance learner will now become satisfied and create ODL process smooth and distance learners may enjoy accessing electronic resources.

2.4 Research Gap

Based on the reviewed literatures, it was found that similar studies conducted in India, Namibia and South Africa including Sivakumaren, *et al.* (2012) concentrated on the access and usage of electronic resources in library by students and teachers.No study has been conducted specifically in Rwanda that focuses on the usage of the electronic resources among distance learners. This study therefore aimed at fillingthis gap by assessing the use of the electronic resources among distance learners at the College of Education, University of Rwanda.

CHAPTER THREE
RESEARCH METHODOLOGY

3.0   Introduction

This chapter discusses in detail the research practicalities upon which this study exists. The section specifically covers the research design, area of study, population of the study, sample size, sampling techniques, methods of data collection, as well as data analysis techniques used in the study.

3.1   Research Design

A research design refers to types of inquiry with qualitative, quantitative, and mixed methods approaches that give specific direction for procedures in a research study (Creswell & Creswell, 2018). Descriptive research design was used in this study. Additionally, a mixed research approaches was adopted in this study. The two approaches were used to obtain a clear picture from quantitative data which was made more understandable with the help of explanations done using qualitative data. According to Creswell & Creswell (2018), neither qualitative nor quantitative approach is satisfactory in itself to help study a phenomenon adequately. It is therefore, combining them together provides a more complete analysis and detail information about a situation. The usage of qualitative methods was of paramount importance because a most of the data were symbols that require descriptive analysis, while quantitative methods were applied in a situation where there is a need of statistical packaging and standardization.

3.2   Area of the Study

The researcher carried out the study at the University of Rwanda specifically at the College of Education. The College of Education is one of the 6 colleges of the University of Rwanda with the main campus located in the sector of Rukara, Kayonza District, Eastern province.

Plate 3.1:   **Location of UR-College of Education**

Source*: http://www.theworldmap.net/country/big/rwanda/*

The reasons behind choosing University of Rwanda-College of Education as the area of the study is because it is the only college in the University of Rwanda which has online and distance learning programmes but more importantly, it has more than 8 years experiences of delivering education programmes through ODL (University of Rwanda Prospectus, 2021). Therefore, the college had enough distance learners with information-rich on matters to be investigated.

3.3   Population of the Study

Population is "a totality of persons, events, organization units, case records or other sampling units with which the research problem is concerned" (Strydom & Venters, 2004:199). In this study the population consisted of all the diploma students (former DTP) at the College of Education, University of Rwanda who have been registered for ODL programmes.

Additionally, the study also included head of the library, library staffs and lecturers of the college. The decisions to take only diploma students among other levels, is due to the fact that ODL programmes are delivered to diploma students only in thecollege while the inclusion of lecturers was due to the fact that these are the ones who teach and prepare study materials to distance learners, but also referring them to accredited sources and informational materials in print or electronic. Therefore, lecturers helped to disclose to whether learners cite online resources or not.

3.4   Sampling Size

Always, sample is the representative of the whole population from which it has been selected (Creswell, 2012). In study, the sample size was calculated using the Yamane (1967) formula. The formula was used in this study because it provides appropriate and adequate number of sample sizes. Therefore, the formula was a follows;

$$n = \frac{N}{1 + N e^2} \quad \text{.. equation 1}$$

From equation 1 above, n= Size of the sample, N= Population size = 412 and e= Margin error /error of tolerance = (≤ 0.1)

$$n = \frac{412}{1 + 412(0.1)^2} = 80.4$$

Therefore, the study had a total sample size of 80 distance learners as respondents. Additionally, 1 director of the library, 2 library staff and 3 lecturers participated in the study.

3.5   Sampling Techniques

According to Taherdoost (2016), sampling techniques "are methods a researcher uses to select a population's representatives that can be used to make inferences or generalization on the whole population concerning an existing theory". Non-probability sampling techniques specifically convenience sampling technique and purposive sampling technique were used to draw respondents as a sample for the study. Convenience sampling technique was used to draw 80 distance learners i.e. diploma students, that means 20 students from Rukara regional center, 20 students from Nyarugenge regional center, 20 students from Busogo regional center, and the other 20 students from Huye regional center (this means 10 students from each center

were the first year while the other 10 students were the second year) to be served questionnaires. Purposive sampling also was used to select 1 director of the library, 2 library staff and 3 lecturers who were interviewed.

3.6   Data Collection Methods and Instruments

This section elaborates method which was used in the collection of data. Both secondary data and primary data were collected.

3.6.1   Secondary Data

Secondary data was collected from books, dissertations, research papers, journal articles (both electronic and print), newspapers and workshop papers.

3.6.2   Primary Data

Primary data was directly collected from the selected respondent's through administered questionnaires; face-to-face interviews and field observations. The tools helped in assessing the use of electronic resources among distance learners.

3.6.2.1 Questionnaire

Questionnaires were disseminated to the distance learners to document information in identifying the use of the electronic resources among distance learners. The questionnaire was used as the main method of data collection since it permits wide geographical contacts. It also facilitates the collection of large amounts of data and information in a short period of time. Both closed and opened-ended questions were structured in this study. The use of this tool in this study was crucial because it gave respondents the freedom of responding to the questions without any supervision. Therefore, 80 questionnaires were distributed to the distance learners. See Appendix I.

3.6.2.2 Face-to-face Interview

Face-to-face interview was used to collect primary data whereby participants provided information concerning their behavior, thoughts, and feeling while responding to the questions asked by the interviewer. Ultimately, semi-structured

interview guides that contain questions structured from the specific objectives of the study was employed. In this case, 6 respondents including, director of the library, librarians and lecturers were selected for face-to-face interview. See Appendix II and III.

3.6.2.3 Observation

Observation is the type of data collection method in which a researcher directly observe all the activities taking place at the study area, and normally it can be obtrusive or un-obtrusive (Liu & Maitlis, 2010). For a researcher to fully understand the complexities and phenomena of different situations, field observations werecarried out. The researcher used un-obtrusive type of observation to study distance learners trend of using electronic resources at the University of Rwanda library and computer laboratory. Therefore, unstructured observations enabled the researcher to add knowledge on varied angles but also to assess the usage of the electronic resources among distance learners. To facilitate observation, an observation guide was used (See Appendix IV).

3.7   Data Quality Control

Data quality control assisted the researcher to ensure that correct data are collected from the respondents, through the use of triangulation. Triangulation means theusage of varied sources of data but also applying different instruments for data collection, such as questionnaires, interview and observation. Different methods of data collection were used to offset weakness of each method. To ensure the validity, reliability and significance of the instruments, pilot study was conducted before the actual field work. In this case, the instruments were pre-tested at the College of Education, University of Rwanda. The questionnaires were distributed to 5 distance learners while 1 librarian and 2 lecturers were interviewed. Care was taken duringthe actual field work to ensure that the selected distance learners are those who have really registered for ODL.

3.8   Ethical and Moral Issues

For ethical purposes, all clearances were obtained from the relevant authorities (University of Dar es Salaam and University of Rwanda) before the actual fieldwork has to be done. Additionally, respondents were asked their consent to participate in the study before responding to the questions set, but also the researcher guaranteed the respondents the privacy of their responses.

3.9   Data Analysis and Presentation

Both quantitative and qualitative data were generated by the study. The analysis of quantitative data was done using Statistical Product and Service Solutions (SPSS) version 21 and Microsoft Office Excel 2010. Thus, descriptive statistics such as frequencies and percentages were computed and the results were further presented in tables, figures and bar-charts. On the other hand, qualitative data was analyzed by using thematic analysis technique.

CHAPTER FOUR

ANALYSIS, PRESENTATION AND DISCUSSION OF FINDINGS

4.0   Introduction

This chapter presents, analyses, and discusses the study findings based on the four specific objectives. The main objective of this study was to assess distance learners' use of electronic resources at College of Education, University of Rwanda. The specific objectives of the study were to determine the types of electronic resources used by distance learners, to determine the extent to which distance learners at the college of Rwanda use electronic resources, and to examine the challenges faced by distance learners in the usage of electronic resources. Data were collected using self-administered questionnaires with both open-ended and closed-ended questions which were administered to 80 distance learners. Moreover, face-to-face interviews were conducted to 6 staffs including 2 library staffs, 1 director of library, and 3 lecturers. The analysis of quantitative data was done using Statistical Product and Service Solutions (SPSS) version 21 and Microsoft Office Excel 2010. Descriptive statistics such as frequencies and percentages were computed and the results were further presented in tables, figures and charts. On the other hand, qualitative data wasanalysed by using thematic analysis technique. The arrangement of the sub-headings in this chapter was based on the specific objectives of the study.

4.1   Response Rate

The researcher distributed a total of 80 questionnaires to distance learners to document information in identifying the use of the electronic resources among distance learners of the College of Education, University of Rwanda. The researcher explained the benefits of this study to the participants before the questionnaires were distributed to the respondents. Moreover, the researcher obtained permission fromthe management of the College of Education, University of Rwanda to distribute questionnaires to the participated distance learners. All 80 questionnaires that were distributed to the distance leaners that were self-administered were filled in and returned; giving the 100% response rate. The same high response rate was observed by the studies of Hamutumwa (2014), Opeyemi (2018) and Dubale (2019). The

observed high response rate showed the huge efforts made by the researcher to explain clearly the importance of this study to all distance learners.

4.2   Demographic Characteristics of the Respondents

Characteristics of the respondents might have direct or in-direct impacts on the usage of the electronic resources (Rehman *et al.,* 2010). Therefore, the researcher felt it was important to observe background information of all respondents participated in the study. Among the features that were observed are: subject combinations, gender, age, and source of income of the respondents.

4.2.1   Combination Taken by the Respondents

The first question on the questionnaire was asked the respondents to specify their subject combinations; in order to ensure that all combinations found in each study center in the College of Education were represented, thus allowing findings of the study to be generalised. The findings of the study show that 20 (25%) distance learners had combination of Biology, Chemistry and Education, followed by 9 (11%) distance learners who had combinations of Mathematics, Biology and Education and Kinyarwanda, English and Education respectively. Few (2; 2%) distance learners observed to have combinations of Mathematics, Computers and Education and French, Kinyarwanda and Education, and Swahili, English and Education respectively. Table 4.1 illustrates the summary of the combination distribution of respondents:

Table 4.1:   **Subject Combination of the Respondents (n=80)**

Combination	Study Centers								Total	
	Rukara		Nyarugenge		Busogo		Huye			
	No	%	No	%	No	%	No	%	No	%
Biology, Chemistry and Education	3	3.75	0	0	2	2.5	15	18.75	20	25
Mathematics, Biology and Education	0	0	0	0	5	6.25	4	5	9	11.25
Mathematics, Chemistry and Education	0	0	0	0	3	3.75	1	1.25	4	5
Mathematics, Computers and Education	2	2.5	0	0	0	0	0	0	2	2.5
Mathematics, Physics and Education	2	2.5	0	0	3	3.75	0	0	5	6.25
Economics, Entrepreneurships, and Education	0	0	4	5	1	1.25	0	0	5	6.25
Geography, Economics and Education	0	0	7	8.75	1	1.25	0	0	8	10
History, Geography and Education	5	6.25	2	2.25	1	1.25	0	0	8	10
French, English and Education	0	0	5	6.25	1	1.25	0	0	6	7.5
French, Kinyarwanda and Education	0	0	1	1.25	1	1.25	0	0	2	2.25
Swahili, English and Education	0	0	0	0	2	2.25	0	0	1	2.25
Kinyarwanda, English and Education	8	10	1	1.25	0	0	0	0	9	11.25

Source*: Field Data (2022)*

Based on the findings in Table 4.1, all combinations were represented in the response. Indeed, the findings show that some of the combinations were over- represented, while some of them were under-represented. This was perhaps due to the results of the usage of convenience sampling method, which sometimes do not allow equal representation of the sample into the study. These findings are similar to

that of Moyo (2017) who also found that over-representation and under- representation of a certain group of sample despite proportional representation of each department in the study.

4.2.2   Distribution of Respondents by Gender

The researcher requested respondents to indicate their gender. The reasons behind asking respondents gender was to find out which gender among distance learners used electronic resources more over the other. The findings of the study show that 53(66%) distance learners were males, while 27 (34%) distance learners were females. Figure 4.1 below illustrates the summary of the gender distribution of respondents:
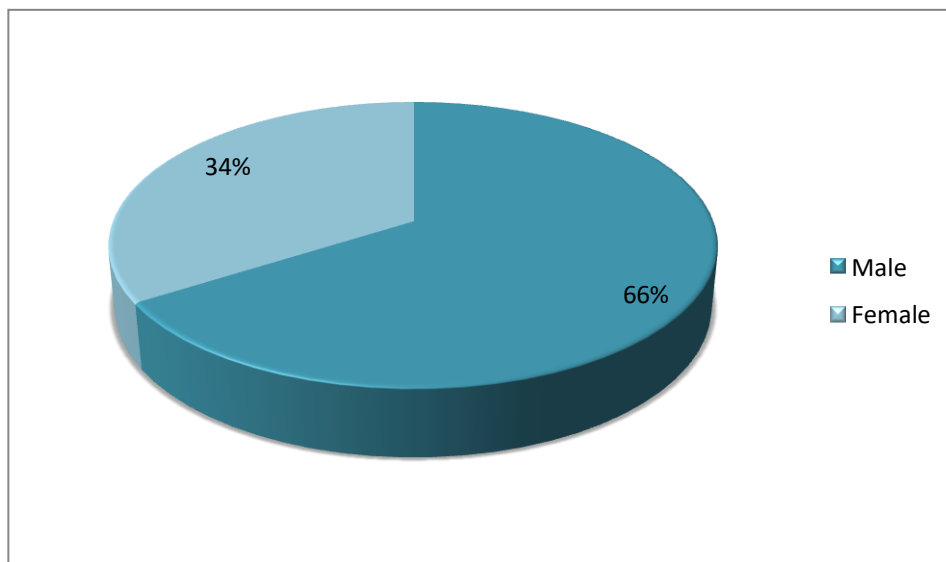
 Figure 4.1:   **Distribution of Respondents by Gender (n=80)**
Source: *Field Data (2022)*

As the findings indicate in Figure 4.1, it was revealed that out of 80 respondents, a large numbers (53; 66%) were males, while few (27; 34%) distance learners were females. The observed dominance of males over females reflects that males are perhaps attracted with the open and distance learning mode of education compared to females who seems to have a preference on conventional mode of education delivery. These findings are in line with the studies of Opeyemi (2018) and Dubale (2019) who also found the dominance of males over females as the results of males to be

attracted of the ODL mode of education delivery. However, these findings are contrary to that of Hamutumwa (2014) who found that the majority of the respondents in his study were females compared to males. The assumption was females' roles of childbearing and taking care of the family was the reasons behind influencing many females to develop their career through ODL mode of delivery as it gives them enough time to deal with both responsibilities equally.

4.2.3 Distribution of Respondents by Age group

The researcher requested respondents to indicate their age group. The reason for identifying respondents' age group was to examine which age group of distance learners used electronic resources more over the other. The findings of the study show that 23 (29%) distance learners had age group between 31-35 years, followed by 21 (26%) distance learners who had age group between 25-30 years. Only 8 (10%) distance learners was observed to have age group between less than 25 years. Table 4.2, summarizes the findings:

Table 4. 2:   Distribution of Respondents by Age group (n=80)

Age group	Frequency	Percentage	Rank
Less than 25 years	8	10	5
25-30 years	21	26	2
31-35 years	23	29	1
36-40 years	11	14	4
41 and above years	17	21	3
Total	**80**	**100**	

Sourc*e: Field Data (2022)*

The results of the study as indicated in Table 4.2, show that the majority (21; 26% and 23; 29%) of distance learners were on the age group between 25-30 years and 31-35% years respectively. This indicate that, the majority of distance learners are studying while working and therefore need to develop their careers that will benefit them either on personal or professional basis. These findings are supported by that of Opeyemi (2018) who also found that the majority of distance learners in his study were on the age that is considered as working-class that they need to obtain more degrees for their personal or professional benefits.

4.2.4   Distribution of Respondents by Source of Income

The researcher also requested respondents to indicate their source of income. The reasons behind for identifying the sources of income of the distance learners was to find out if financial stability has a direct effect on the usage of the electronicresources. Findings of the study show that 59 (74%) distance learners get their sourceof income from employment, while 14 (17%) distance learners get their source of income from business activity, and 7 (9%) distance learners had no source of income.Figure 4.2 illustrates the findings:
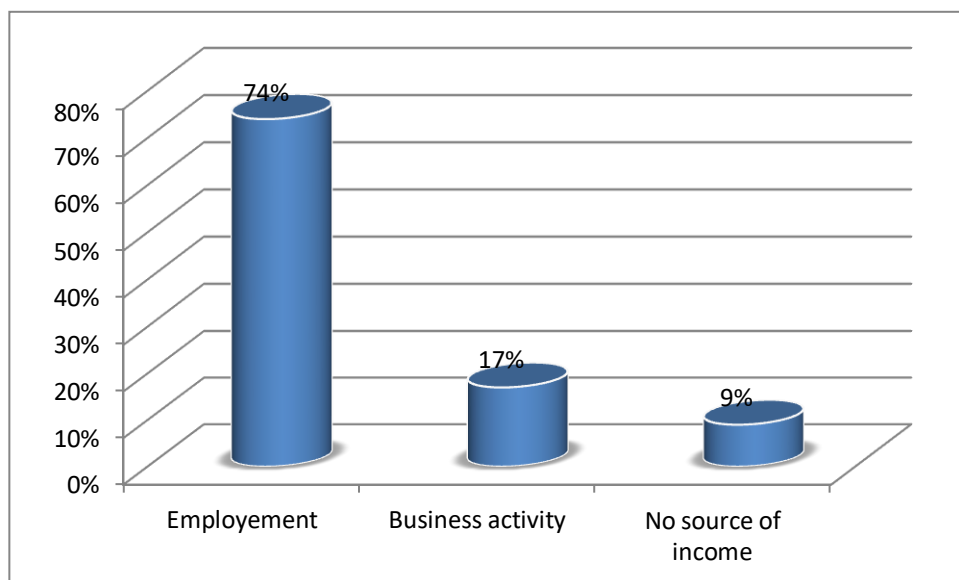
Figure 4.2:   Distribution of Respondents by Source of Income (n=80)
Source: *Field Data (2022)*

As indicated in the Figure 4.2 above, the results of the study show that most (59; 74%) of the distance learners have been employed, while 14 (17%) distance learners have their own business that act as their sources of income. Moreover, 7 (9%)distance learners observed to have no any activity that act as their source of incomes regardless of the flexibility offered by the ODL mode of education delivery that allow student to study while working. It indicates that the majority of distance learners are capable of handling all the costs associated with the usage of electronic resources such as buying of smartphones or laptops, subscribing of e-books or e- journals. These findings are supported by that of Desta (2018) who also found that

distance learners who have source of income are likely to be able to cater all the costs related to the usage of the electronic resources compared to those with no source of incomes.

4.3 Types of the Electronic Resources Used by Distance Learners

This was the first objective of the study as the researcher wanted to examine the various types of the electronic resources used by distance learners. The reasons behind for asking this question was to discover types of electronic resources that are commonly used by distance learners. To obtain the needed information, respondents were asked to point out several issues such as if they were aware of the electronic resources provided by the University of Rwanda, how they leant about the types of electronic resources, types of electronic resources they use, how do they access electronic resources, and for what purpose they use electronic resources. The results are presented in the subsequent sub-headings below.

4.3.1 Awareness of the Electronic Resources among Distance Learners

The researcher wanted to examine the awareness of the electronic resources among distance learners. The basis for examining this was to find out if distance learners are really aware of the electronic resources provided by the University of Rwanda, College of Education. The results of the study indicate that all 80 (100%) distance learners are aware of the electronic resources.

This implies that it's a mandatory for distance learners to be aware of the electronic resources as it is the only way that will help them to excel in their studies. All communications in ODL environment is done online using electronic resources, contrary to the conventional mode of education delivery where offline or face-to-face communication is mainly implemented. In ODL environment learning process is normally done through Moodle where students receive their learning materials, submitting assignments.

These findings are related to that of Borteye and Dadzie (2015), Yang and Li (2015), Dubale (2019) and Akuffo and Budu (2020) who also in their studies found the high

rate of awareness of the electronic resources among distance learners. The mode of education delivery was one of the major reasons of the high rate of electronicresources awareness among distance learners. This is because in ODL environment electronic resources are the only learning tools, therefore, being aware of them is of no options to distance learners.

4.3.2 How Distance Learners Learnt about the Types of Electronic Resources

The researcher also wanted to examine how distance learners learnt about the types of electronic resources. The reasons behind to examine this, was to find out how and where exactly do distance learners get to know about the types of the electronic resources in the University of Rwanda. The findings indicate that 20 (25%) distance learners get to know about the electronic resources through their lecturers, followed by 18 (22.5%) distance learners who get to know about the electronic resources through induction week, and 14 (17.5%) distance learners get to know about the electronic resources through library website. Few (4; 5% and 6; 7.5%) distance learners get to know about the electronic resources through library staffs and notice boards respectively. Table 4.3 illustrates the findings:

Table 4. 3: How Respondents Learnt about the Types of Electronic Resources (n=80)

Reasons for Reading	Frequency	Percentages	Rank
Personal Discovery	10	12.5	4
Lecturers	20	25	1
Induction Week	18	22.5	2
Friends and Colleagues	8	10	5
Library Staffs	4	5	7
Notice Boards	6	7.5	6
Library Website	14	17.5	3

Source*: Field Data (2022)*

As the results presented in Table 4.3, in general a major number (20; 25%) of distance learners get to know about the electronic resources through their lecturers. As the lecturers deliver their lectures through Moodle and require students to submit their assignments using the same means, therefore, it was expected to see the

majority of the distance learners get to know about the electronic resources through their lecturers. Moreover, it was observed also most of the distance learners get to know about the electronic resources through induction week. Probably, this is because there is a common activity in almost all higher learning institutions where every new students upon their arrival they are given introduction on how to survive into the new environment including how to use the learning facilities such as the electronic resources. On the contrary to Opeyemi (2018) reported that the majority of distance learners get to know about the electronic resources through personal discovery. This implies that the majority of the distance learners are struggled by their own to learn more about the electronic resources and finds little assistances from their lecturers.

However, it was found few (4; 5%) distance learners get to know about the electronic resources through library staffs. This reflects that perhaps most of the distance learners do not use library effectively or there were little interaction between library staffs and distance learners. With these findings it shows that library staffs need to strongly market the electronic resources to their clients. These findings corroborate with that of Kaur and Verma (2009), Tripathi and Jeevan (2009) and Damilola (2013) who both found in their studies that a small number of the distance learners get to know about the electronic resources with the help of library staffs. Unlike, Egberongbe (2011), Fasola (2013) and Gupta and Sharma (2015) who in their studies found the large number of distance learners get to know about the electronic resources with the help of library staff.

4.3.3 Ways in which Distance Learners Access Electronic Resources

The researcher wanted to examine ways in which distance learners access electronic resources. The reasons behind to examine this, was to ascertain different ways used by distance learners to access electronic resources in the University of Rwanda. The results of the study show that 18 (22%) distance learners' accessed electronic resources through their smartphones, followed by 16 (20%) distance learners who accessed electronic resources through their personal computers/laptops. It was followed by 14 (18%) distance learners who accessed electronic resources through

their tablets, while 12 (15%) distance learners' accessed electronic resources through library computer laboratory. Only 10 (12% and 13%) distance learners' accessed electronic resources through internet café and computer laboratory respectively, Figure 4.3 illustrates the findings:
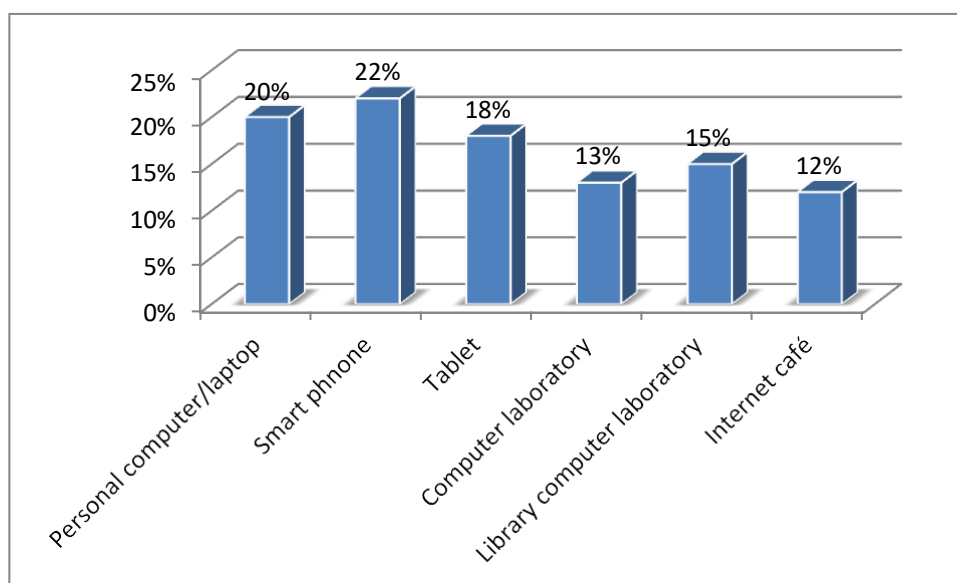

Figure 4.3:   Ways Distance Learners Access Electronic Resources (n=80)
Source*: Field Data (2022)*

As the results presented in Figure 4.3, the majority (18; 22% and 16; 20%) of the distance learners access the electronic resources through their smartphones and personal computer/laptop respectively. This implies that since electronic resources is the main tools for learning in the distance learning mode of education delivery, therefore, one of the key requirements for every student to have is either a smartphone or personal computer/laptop for smooth learning. This has been also supported by another lecturer during the interview as follows;

> *"Every prospective student is required to his/her own smartphone or personal computer/laptop to make the learning process easy. This is because, every communication between teacher and students and even library and students is done online, and therefore, nothing can be done without presence of these tools simply because the University's computer laboratory cannot accommodate every student."* (Lecturer No. 2)

In addition, the findings of the researcher based on her observations confirm that electronic resources are available and in some sites like Rukara regional center, most of time computers are unoccupied. This situation reinforce the results obtained through the questionnaire as only 15% of the respondents affirmed to access electronic resources through library computer laboratory. The following picture taken by the researcher while she was on the field gives more information on that situation:

Plate 4.1*:* **Library Computer Laboratory in Rukara Regional Centre**
Source*: Fieldwork (2022)*

These findings relate with that of Hamutumwa (2014) and Opeyemi (2018) who also in their studies found that most of the distance learners access the electronic resources through their smartphones and personal computers/laptops. This is because, every student who joined distance learning are supposed to have their own means of accessing electronic resources such as smartphones, personal computer/laptops.

4.3.4 Types of Electronic Resources Used by Distance Learners

The researcher wanted to examine types of the electronic resources used by distance learners. The reasons behind to examine this, was to find out what exactly are the common types of the electronic resources used by distance learners in the University of Rwanda. The results of the study show that 14 (17.5%) respondents mentioned e-books, 9 (11.25%) respondents mentioned e-journals, while 23 (28.75%) respondents mentioned online databases. Twenty nine (36.25%) respondents mentioned search engines, and 5 (6.25%) respondents mentioned institutional repository. Table 4.4 illustrates the findings:

Table 4.4:   Types of the Electronic Resources used by Distance Learners and Year of Study (n=80)

Year of Study	Type of Electronic Resources									
	E-book		E-journal		Online Database		Search Engines		Institutional Repository	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
First Year	8	10	5	6.25	11	13.75	13	16.25	3	3.75
Second Year	6	7.5	4	5	12	15	16	20	2	2.5
Total	*14*	*17.5*	*9*	*11.25*	*23*	*28.75*	*29*	*36.25*	*5*	*6.25*

Source*: Field Data (2022)*

As the results presented in Table 4.4, e-journals and e-books are used by fewer respondents. Moreover, scholarly online databases and institutional repositories were also used by fewer respondents, while the predominantly used resources were search engines. Respondents predominantly use search engines than online database, e- books and e-journals. This has been supported by their lecturers and library staffs during interview. The first comment from their lecturer was as follows;

> *"Despite using Moodle in learning, but through my own research I have found that most of students are using search engines like Google to find answers for the questions that we give them as their assignments. And this became a tendency despite informing them about using e-books and e-journals as the main sources of finding references"* (Lecturer No. 1)

The other comment was from one of the library staff;

> *"Search engines particularly Google is the one used mostly by our students when compared to other types of the electronic resources. I think students feel the usage of Google is quite easy in finding reference or learning materials than using e-journals or e-books"* (Library staff No. 1)

The other comment was from one of the library staff;

> *"Despite the fact that some of our students are pursuing non-degree programmes, all students are required to make good use of theonline resources subscribed by the University of Rwanda, such as EMERALD Insight, ProsQuest, BRILL, EBSCO Host Research, Research4Life and DOAJ. However, our Diploma students predominantly access Search engines as their main online resource"* (Library staff No. 2).

During observation, the researcher noted that the University of Rwanda library had subscribed to different data base and online resources, as depicted in Plate 4.2.


Plate 4.2: **University of Rwanda Library Website depicting Online Resources**

Source*: https://library.ur.ac.rw/*

However, the results indicate that few (5; 6.25%) distance learners use institutional repository as among the types of the electronic resources. The low usage of the institutional repository was perhaps due to the level of study of the distance learners. Institutional repository among other things mostly includes dissertations or thesis of the students of a particular university. In this case, since students at diploma level do not conduct research and write dissertation instead they conduct field and write reports, therefore, they do not frequently review others reports. This statement was supported by another library staff during the interview as follow;

> *"Our students do not make effective use of the institutional repository maybe is because they do not review others reports. Perhaps if they could have required to write dissertations things might be different as they might be required to consult others studiesthat most of them are in the institutional repository"* (Library staff No. 2)

These findings are contrary to that of Dubale (2019) who found that the majority of distance learners used mainly e-journals and institutional repository as their main types of the electronic resources. Level of studies is perhaps the reasons for the high usage of e-journals and institutional repository as undergraduate and postgraduate level are required to conduct research as one requirement for fulfillment of the study and therefore citing other scholarly works through institutional repositories was not a surprise.

4.3.5 Extent of Use of Electronic Resources among Distance Learners

The study sought to examine frequency of use of the electronic resources. The reasons behind to examine this, was to find out how often do distance learners used electronic resources provided by the university. The findings show that 40 (50%) distance learners used electronic resources daily, followed by 18 (23%) distance learners who used electronic resources several days a week, while 14 (17%) distance learners used electronic resources weekly. 8 (10%) distance learners used electronic resources monthly. Table 4.5 illustrates the findings:

Table 4.5: **Extent of Use of Electronic Resources among Distance Learners (n=80)**

Extent of Use of Electronic Resources	Frequency	Percentage	Rank
Daily	40	50	1
Several days a week	18	23	2
Weekly	14	17	3
Monthly	8	10	4
Total	80	100	

Source*: Field Data (2022)*

As the results presented in Table 4.5, the majority (40; 50%) of the distance learners used electronic resources on daily basis, while others used electronic resources seven days a week. This indicates that the usage of the electronic resources to almost all distance learners is part and parcel of their learning life. Since all communication in distance learning environment is done online, it was expected to see the high rate of the usage of the electronic resources to distance learners. This was supported by their library staffs and lecturers during the interview. The other library staff commented as follow;

> *"Every day you may find our library computer laboratory full. It is not large in terms of size, but all the time computers are busy used by our students. So this shows that the rate of usage of the electronic resources is high and most of them they use for academic purposes".* (Library Staff No.1)

The other comment from another lecturer was as follow;

> *"I think they use electronic resources frequently or daily because we as lecturers we try our best to keep them busy by giving them something to do at least every day. So I do believe distance learners used electronic resources daily, and this is because if they don't use them for academic purposes still they use them for recreational issues".* (Lecturer No.3)

The above findings are supported with those of Haridasan and Khan (2009), Deng (2010), Ge (2010), Bhatia (2011), Egberongbe 2011), Gupta (2011), Dhanavandan, et al. (2012), Khan and Ahmed (2013), Zafar (2013), Ahmed and Amjad (2014), Joshua (2014), Gupta and Sharma (2015), Olaniran et al. (2017) and Opeyemi (2019) who in their studies found that both distance learners and academic staff used

electronic resources frequently as this is the only way of communication between distance learners and lecturers in the distance learning mode of education delivery. Besides, few (8; 10%) distance learners observed to use electronic resources on monthly basis. This indicates that to some of the students the usage of the electronic resources is not essential. This reflects that perhaps they have technophobia (the situation which leads into scaring usage of the technological facilities such as the electronic resources) or they rely on using print resources. This finding was supported by the statement of one of the lecturer as follows;

> *"Some of the students are scared of using electronic resources and I can say they have technophobia or maybe I call it electronic phobia. They tend to use electronic resources occasionally when they have to send their assignments and normally they like reading print resources although we force them to use e-resources frequently by forcing them to use at least two references from e-books or e- journals".* (Lecturer No.1)

The above findings are contrary to that of Dubale (2019) who found that the majority of distance learners used electronic resources frequently on daily, weekly and monthly basis as this is the main way of communication between distance learners and lecturers in the ODL mode of education delivery.

4.4   Purpose of Using Electronic Resources among Distance Learners

The second objective of the study was to examine the purposes of usage of the electronic resources among distance learners. The reasons behind examining this, was to find out the reasons for distance learners to use electronic resources. To acquire the needed information, respondents were asked to indicate several issues such as reasons for using electronic resources at the university, level of satisfactions with the electronic resources provided by the university, and formats of the resourcesthey normally use in their assignments. The results are presented in the subsequent sub-headings.

4.4.1   Purpose of Using Electronic Resources among Distance Learners

The researcher wanted to examine the reasons of using electronic resources among distance learners. The reasons behind examining this, was to find out the reasons for

distance learners to use electronic resources. The results show that 36 (45%) distance learners used electronic resources for the purpose of supporting their assignments, 20 (25%) distance learners used electronic resources for recreational purposes, while 4 (5%) distance learners used electronic resources for the preparation of workshop/seminar purposes. Table 4.6 illustrates the findings:

Table 4.6: **Purpose of Using Electronic Resources among Distance Learners (n=80)**

Reasons for using E-Resources	Frequency	Percentage	Rank
To support assignments	36	45	1
For writing literature	9	11	4
For preparation of workshop/seminar	4	5	5
For further studying on subject of interest	11	14	3
For recreation	20	25	2

Source: *Field Data (2022)*

As the results presented in Table 4.6 show, the major purposes of using e-resources among respondents are to support assignments and recreational purposes, with the least use being supporting literature review, preparation of workshop/seminar. These findings show that distance learners do not make effective use of e-resources to support learning and research. Deng (2010) asserts that the use of electronic resources is multi-dimensional, i.e. is used academic purposes and recreational purposes. Another library staff commented on this during the interview;

> *"Some of the students used our library computer laboratory, and most of them used it for academic purposes. But sometimes they used it for non-academic purposes such as charting, streaming, etc. But honestly, most of them they used it for academic purposes."* (Library Staff No. 2)

These findings differ with those of Amankwah (2014), Hamutumwa (2014) and Desta (2018) who both found that most of the distance learners used electronic resources for the academic purposes like completing assignments and gaining knowledge. Also electronic resources are being used for other purpose like recreational purposes.

4.4.2   Level of Satisfactions with Electronic Resources among Distance Learners

The researcher also wanted to examine the satisfactions level on the usage of e-resources among distance learners. The reasons behind to examine this, was to find out if distance learners are satisfied with the electronic resources provided by the University of Rwanda. The findings show that 55 (69%) distance learners were satisfied with the electronic resources provided by the university, followed by 17 (21%) distance learners who were very satisfied with the electronic resources provided by the university, while 5 (6%) distance learners were not sure if they were satisfied with the electronic resources provided by the university or not. Moreover, 2 (3%) distance learners were dissatisfied with the electronic resources provided by the university, while 1 (1%) distance learner was very dissatisfied with the electronic resources provided by the university, Figure 4.4 illustrates the findings:
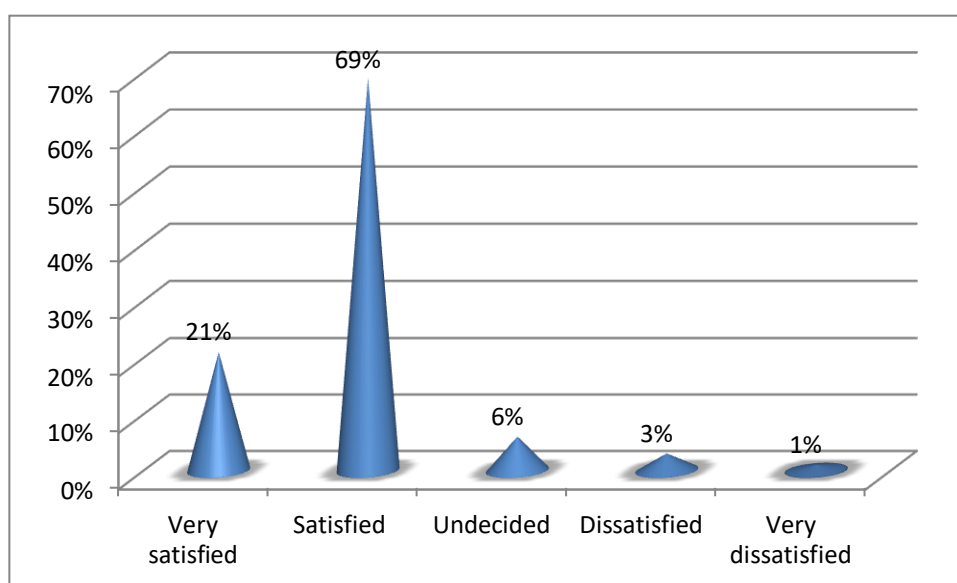
Figure 4.4:   Level of Satisfactions on the Usage of E-Resources (n=80)
Source*: Field Data (2022)*

As the results presented in Figure 4.4 show, majority (69% and 21%) of the distance learners indicated to be satisfied with the electronic resources provided by the university, while few indicated dissatisfaction. The high level of satisfactions implies that the electronic resources provided by the university fulfill all their needs. This

was confirmed by the one of the lecturer and the head of the library during the interview as follow;

> *"To make effective use of the electronic resources, we as teachers always give our students assignments and request them to consult online sources that we assure that they have all the information needed. Additionally, we believe all online sources that students consult they usually add knowledge in the area to be studied."* (Lecturer No. 3)

Also head of the library commented as follows;

> *"As librarians one of our key responsibility it to make sure that we provide service to our clients that will satisfy their need. Most of the library users request assistances from the librarians in searching information particularly on e-journals, e-books and institutional repository. Always, students became satisfied with the information they get on the electronic resources".*

The above findings are contrary with the study of Anyim (2018) who found that most of the distance learners were not satisfied with the electronic resources provided to them. High level of satisfaction among respondents could be the results of thethorough training given to the distance learners on how to use electronic resources.

However, the results show that few (2; 3%) distance learners were dissatisfied with the electronic resources provided by the university. This was explained by onelibrary staff during interview as follows:

> *"Some of the electronic resources seem to be difficult to use by some of the distance learners. This is because it happens sometimes some of the distance learners failed to use e-journals and therefore request assistance from the library staff. Additionally, due to regularpower cutoffs caused discouragement of the usage of the electronic resources to the students."* (Library Staff No. 1)

4.4.3 Training on the Usage of the Internet

The researcher wanted to examine training on the use of the internet among distance leaners. The reasons behind examining this, was to find out if distance learners have ever attended any training on the usage of the internet. The findings show that 64 (80%) distance learners have attended training on the usage of the internet, while 16 (20%) distance learners have not attended training on the usage of the internet. Figure 4.5 illustrates the findings:
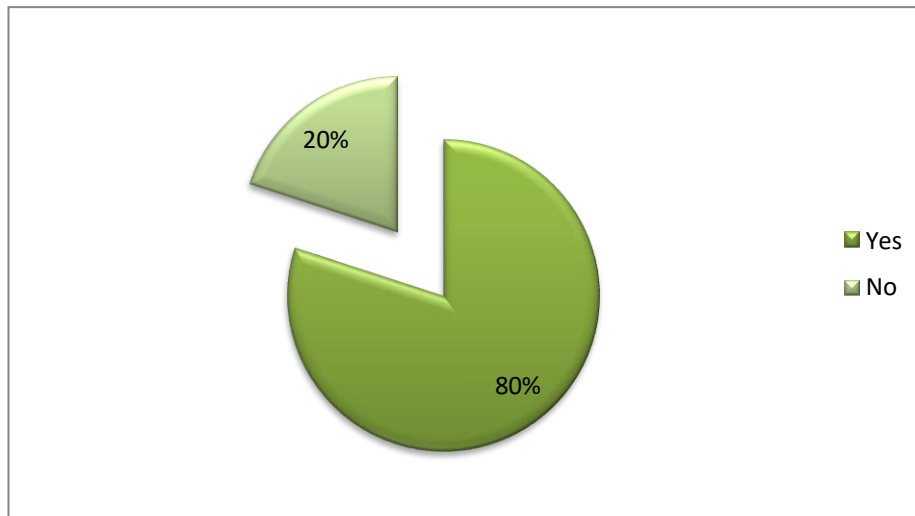
Figure 4.5: **Training on the Usage of Internet (n=80)**

Source*: Field Data (2022)*

As shown in the results presented in Figure 4.5, the majority (64; 80%) of the distance learners have attended training on the usage of the internet. By attending training it means that distance learners might have enough knowledge on using electronic resources by using several techniques. In this case, it shows that lecturers and library staffs played their role of providing training to the distance learners on how to use internet using various techniques. This statement was supported by one of the lecturer and another library staff during the interview. One of the lecturer commented as follow;

> *"We usually provide training to our students on how to use electronic resources but mainly on how to use internet to search reading materials. You know internet is the backbone of the distance learning mode of education delivery, so at the beginning of each semester we conduct training to our students on the usage of internet for smooth learning."* (Lecturer No. 1)

Another comment from one of the library staff was as follow;

> *"We understand that internet is the crucial tool for effective open and distance learning, therefore, we regularly provide training to our students for the aim of making sure that they enjoy learning."* (Library Staff No. 1)

Additionally, findings also show that few (16; 20%) distance learners have notattended training on how to use internet. This indicates that perhaps training was not provided regularly or some of the distance learners did not attend the training provided by the university. This was evident during the interview with the library staff. One of the library staff when asked to state his opinions of why some of the distance learners did not have training on the usage of the internet, he stated that;

> *"It's a common thing to students, when we inform them about a certain training some of them do not show up. This cause most of them to face difficulties when using searching for reading materials as they do not have various search techniques"* (Library Staff No. 2)

The above findings are supported with that of Hamutumwa (2014) who also found that most of the distance learners have attended training on how to use internet as oneof the efforts of the academic and library staffs to make sure that all the distance learners are acquainted with the knowledge of using internet that will help them to proper usage of the electronic resources.

4.4.4 Types of Training Distance Learners Attended on the Usage of the Internet

The researcher wanted to identify types of training distance learners attended on the use of the internet. The reasons behind examining this, was to find out what exactly are types of training distance learners attended on the usage of the internet. The findings show that 44 (55%) distance learners have attended training on the usage of the internet through library orientation/induction, while 25 (31%) distance learners have attended training on the usage of the internet through attending a course, and 11 (14%) distance learners have attended training on the usage of the internet through workshop/seminars. Table 4.7 illustrates the findings:

Table 4.7: **Types of Training on the Usage of the Internet (n=80)**

Types of Training	Frequency	Percentage	Rank
Library orientation/induction	44	55	1
Workshop/seminars	11	14	3
Attending a course	25	31	2
Total	*80*	*100*	

Source*: Field Data (2022)*

As the results presented in Table 4.7, the majority (44; 55%) of the distance learners indicate that they have received training on the usage of the internet through library orientation/induction. As observed early, at each beginning of the academic year students are given orientation on how to use various library services including the usage of the internet. Since internet is the basic tool for smooth open and distance learning environment it was expected to lead as the main way of delivering training on the usage of the internet. This was also confirmed during the interview as commented by the head of the library as follow;

> *"It's a basic activity to conduct library orientation at each beginning of the academic year for the aim of making studentsaware of the services offered in the library. During this orientation among others, we always emphasize on the usage of the internet as this is the basic tool for proper and effective learning in ODL environment."*

Moreover, the findings show that 25 (31%) distance learners and 11 (14%) distance learners received training on how to use internet through attending a course and through workshop/seminars respectively. This implies that the management of the University work hard to make sure that they provide enough training to the distance learners on the proper usage of the internet for smooth learning. This was also evident during the interview with one of the lecturer, and commented as follow;

> *"We do understand that internet is the basic tool for learning in the distance learning mode of education delivery, and therefore, the management organizes several training that helps to familiarize our students on how to effectively use the internet for learning".* (Lecturer No. 1)

These findings are supported with that of Hamutumwa (2014) who also found that orientation is the main means of training used by the university to keep distance learners familiar with the proper and effective use of the internet for learning.

4.4.5 Techniques Used in Searching E-resources on the Internet

The researcher wanted to examine techniques in searching e-resources in the internet among distance learners. The reasons behind to examine this, was to find out several techniques used by distance learners in searching e-resources in the internet. The

findings show that 44 (55%) distance learners used simple search technique to search e-resources in the internet, followed by 16 (20%) distance learners who used advanced search technique to search e-resources in the internet. It shows that few (4; 5% and 1; 1%) distance learners used Boolean and truncation techniques to search e- resources in the internet respectively. Figure 4.6 illustrates the findings:
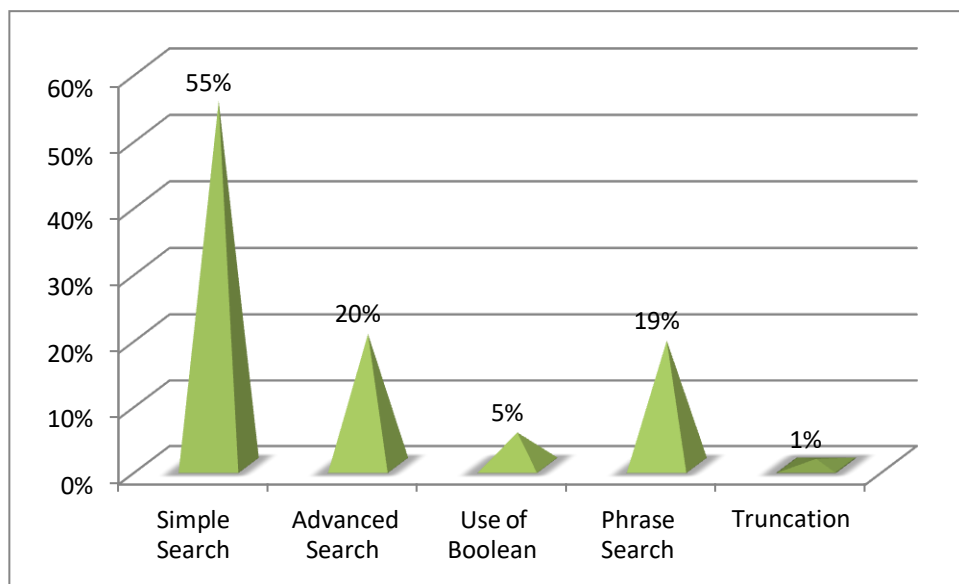

Figure 4.6: **Techniques in Searching E-resources in the Internet (n=80)**
Source*: Field Data (2022)*

As the results presented in Figure 4.6, the majority (44; 55%) of the distance learners used simple search as their main technique in searching electronic resources in the internet. This was expected by the researcher because of the education level of the distance learners, the usage of the simple search seems to be appropriate to them. The education level has an impact on the usage of the search techniques as the one with high level of education are expected to use more advanced search techniques whereas those with low education level are expected to use simple search techniques (Amankwah, 2014). Moreover, it was observed others also used other searching techniques. This implies that apart from having only Diploma level of education but distance learners observed to use other techniques to search electronic resources in the internet. During interview with the head of library, it was noted that there is a huge effort from the management of the university to train distance learners on

effective use of the internet, including online information retrieval skills, as depicted below in the following statement:

> *"We understand the benefits of having skills of searching electronic resources in the internet, and therefore, we usually provide training to our students on how to search electronic resources using several techniques such as advanced search, truncation and Boolean."*

The above findings are supported with those of Amankwah (2014) who also found that most of the distance learners relied on simple search technique to search for electronic resources on the internet.

4.5   Challenges Faced by Distance Learners in the Usage of Electronic Resources

The third objective of the study was to examine challenges faced distance learners in the usage of electronic resources. The reasons behind for asking this question were to identify several issues that act as obstacles to distance learners in the usage of electronic resources. To get the needed information, respondents were asked toindicate whether they agree or dis-agree with the listed issues as among the factors hinder them from proper usage of the electronic resources. Table 4.8 illustrates the findings:

Table 4.8:   Challenges Faced Distance Learners in the Usage of E-resources (n=80)

Items	Strongly Disagree		Disagree		Undecided		Agree		Strongly Agree	
	No	%	No	%	No	%	No	%	No	%
Lack of access to the internet	15	19	12	15	11	14	26	32	16	20
Expensive internet	11	14	10	13	9	11	21	26	29	36
Irrelevant content	19	24	17	21	24	30	14	18	6	7
Slow internet access speed	13	16	10	13	10	13	30	37	17	21
Information overload	9	11	16	20	25	31	22	28	8	10
Lack of enough time to search for information	18	22	20	25	11	14	21	26	10	13
Poor network infrastructure	12	15	13	16	7	9	26	32	22	28
Limited number of computers	15	19	9	11	10	13	32	40	14	17
Persistent power outages	14	17	12	15	23	29	22	28	9	11
Financial constraints	13	16	9	11	11	14	28	35	19	24
Lack of knowledge of websites	21	26	17	21	10	13	19	24	13	16

Source*: Field Data (2022)*

As the results presented in Table 4.8, when asked about whether lack of access to the internet is one of the major challenges faced distance learners in the usage of the electronic resources, 26 (32%) distance learners agree with it, while 16 (20%) distance learners strongly agree with it. 15 (19%) distance learners strongly disagree with it, while 12 (15%) distance learners disagree with it, and 11 (14%) distance learners were not sure with it. These shows that, since internet is the basic tool for proper and effective open and distance learning environment therefore, lack of it might cause problems in the searching of the electronic resources. These findings corroborate that of Egberogbe (2011), Amankwah (2014) and Desta (2018) who bothin their studies found that lack of access to the internet was among the major factors chat hinder distance learners from proper and effective use of the electronic resources.

When asked about whether expensive internet is one of the major challenges faced distance learners in the usage of the electronic resources, 29 (36%) distance learners

strongly agree with it, while 21 (26%) distance learners agree with it. 9 (11%) distance learners strongly disagree with it, while 10 (13%) distance learners disagree with it, and 11 (14%) distance learners were not sure with it. It shows that the high costs associated with the internet acts as one of the major barrier that hinder distance learners form using electronic resources. Despite majority of the distance learners having source of incomes but high costs of the internet still become the obstacles to them. The same findings was observed by Chaputula (2011), Amankwah (2014) andHarerimana and Mtshali (2018) who found the high costs associated with theinternet act as an obstacle for proper and effective use of the electronic resources among distance learners.

Also, when asked about whether irrelevant content is one of the major challenges faced distance learners in the usage of the electronic resources, 24 (30%) distance learners were not sure with it. 19 (24%) distance learners strongly disagree with it, while 17 (21%) distance learners disagree with it. 14 (18%) distance learners agree with it, and 6 (7%) distance learners strongly agree with it. This show that most ofthe distance learners were not sure if having irrelevant contents hinder them from effective usage of the electronic resources or not. However, a large number of the distance learners also disagree with it. In this case it shows that there might be contents that are irrelevant but they can hinder them from using electronic resources. These findings corroborate that of Harerimana and Mtshali (2018) who also found to disagree with the statement that irrelevant contents could have been one of the major factors that hinder distance learners from using electronic resources effectively.

Additionally, when asked about whether slow internet speed is one of the major challenges faced distance learners in the usage of the electronic resources, 30 (37%) distance learners agree with it, while 17 (21%) distance learners strongly agree with it. 13 (16%) distance learners strongly disagree with it, while 10 (13%) distance learners disagree with it, and the other 10 (13%) distance learners were not sure with it. Since internet is the basic tool for smooth open and distance learning environment,internet should reliable with the highest speed as possible. With slow internet speed,

ODL learning environment might not be appropriate as it is supposed to be. This was confirmed by one of the lecturer during the interview, who commented as follow;

> *"Sometimes it happen the university internet run very slowly to the point we fails even to open and download a paper in the journal. This is also a case to the students sometimes with the slow internet speed they fail even to upload their assignments and therefore causing a delay of the submission of an assignments."* (Lecturer No. 8)

These findings are contrary to that of Isa (2010), Amankwah (2014), Hamutumwa (2014) and Dubale (2019) who both found slow internet speed to be the major factor that hindered distance learners from using electronic resources effectively.

When asked about whether information overload is one of the major challenges faced distance learners in the usage of the electronic resources, 25 (31%) distance learners were not sure with it. 22 (28%) distance learners agree with it, while 16 (20%) distance learners disagree with it. 9 (11%) distance learners strongly disagree with it, and 8 (10%) distance learners strongly agree with it. This implies that almost the number of distance learners who were not sure closely relate with those who agree with the fact that information overload acts as a factors that hinder them from using electronic resources effectively. These findings corroborate with that of Hamutumwa (2014) who also found overloaded of the information is among the major challenges that hinder most of the distance learners from proper and effective use of the electronic resources.

Also, when asked about whether lack of enough time to search for information is one of the major challenges faced distance learners in the usage of the electronic resources, 21 (26%) distance learners agree with it, while 20 (25%) distance learners disagree with it. 18 (22%) distance learners strongly disagree with it, while 11 (14%) distance learners were not sure with it, and 10 (13%) distance learners strongly agree with it. Again almost equal number of the distance learners who agree relate with those who disagree with the fact lack of enough time to search for information is one of the major challenges faced distance learners in the usage of the electronic resources. Distance learners need to dedicate enough time for searching information

as they might use different searching techniques that will results into wider knowledge. These findings are supported with that of Hamutumwa (2014) Moyo (2017) who both found lack of enough time to search for information is one of the major challenges faced distance learners in the usage of the electronic resources.

When asked about whether poor network infrastructure is one of the major challenges faced distance learners in the usage of the electronic resources, 26 (32%) distance learners agree with it, while 22 (28%) distance leaners strongly agree with it. 13 (16%) distance learners disagree with it, while 12 (15%) distance learners strongly disagree with it, and 7 (9%) distance learners were not sure with it. Most of the respondents confirm that poor network infrastructure is among the major challenge that acts as an obstacle to distance learners from proper and effective use of the electronic resources. In this case, with un-appropriate network infrastructure the usage of the electronic resources could be very difficult. These findings are related to that of Oduwole and Akpati (2003), Chaputula (2011), Amankwah (2014) and Desta (2018) who also found that poor network infrastructure is among the majorchallenge that acts as an obstacle to distance learners from proper and effective use of the electronic resources.

Also, when asked about whether limited number of computers is one of the major challenges faced distance learners in the usage of the electronic resources, 32 (40%) distance learners agree with it, while 15 (19%) distance learners strongly disagree with it. 14 (17%) distance learners strongly agree with it, while 10 (13%) distance learners were not sure with it, and 9 (11%) distance learners agree with it. A large number of the distance learners agree with the fact inadequate number of computersis one of the major challenges faced distance learners in the usage of the electronic resources. Each distance learner is encouraged to have his/her own computer/laptop since a computer laboratory cannot accommodate each student. These findings are supported with that of Dadzie (2005) who also found that inadequate number of computers is one of the major challenges faced distance learners in the usage of the electronic resources

Furthermore, when asked about whether persistent power outages is one of the major challenges faced distance learners in the usage of the electronic resources, 23 (29%) distance learners were not sure with it, while 22 (28%) distance leaners agree with it. 14 (17%) distance learners strongly disagree with it, while 12 (15%) distance learners disagree with it, and 9 (11%) distance learners strongly agree with it. The issue of frequent power cuts was observed to be among the major challenges that faced most of the distance learners and therefore, caused them not to properly and effectively use electronic resources. These findings are related to that of Chaputula (2011), Amankwah (2014) and Desta (2018) who also found that power failure/outages is among the major challenge that acts as an obstacle to distance learners from proper and effective use of the electronic resources.

Also, when asked about whether slow financial constraints is one of the major challenges faced distance learners in the usage of the electronic resources, 28 (35%) distance learners agree with it, while 19 (24%) distance learners strongly agree with it. 13 (16%) distance learners strongly disagree with it, while 11 (14%) distance learners were not sure with it, and the other 9 (11%) distance learners disagree withit. This implies that despite most of the distance learners to have source of the income but the findings reflects the unsatisfactory of their incomes as they cannot help them to fulfill all of their requirements including costs related to the usage of theelectronic resources. These findings relate to that of Egberogbe (2011) and Umar (2015) who both found financial constraints as among the major factors that hinder distance learners from proper and effective usage of the electronic resources.

When asked about whether lack of knowledge of websites is one of the major challenges faced distance learners in the usage of the electronic resources, 21 (26%) distance learners strongly disagree with it, while 19 (24%) distance leaners agree with it. 17 (21%) distance learners strongly disagree with it, while 13 (16%) distance learners were strongly agree with it, and the other 10 (13%) distance learners were not sure with it. This implies that most of the distance learners did not agree with the fact that inadequate knowledge of the websites is one of the factor that hinder them from using electronic resources. In other words, it shows that most of the distance

learners perhaps are knowledgeable enough with various websites. These findings relate to that of Moyo (2017) and Desta (2018) who both lack of knowledge on websites as among the major factors that hinder distance learners from proper and effective usage of the electronic resources. However, these findings are contrary to that of Egberogbe (2011) Chaputula (2011), Amankwah (2014), Hamutumwa (2014) and Umar (2015) who both do not agree that lack of knowledge of websites could one of the major factors that hinder distance learners from proper and effective usage of the electronic resources.

The findings of this study makes one to conclude that, some of the distance learners agree with the fact that lack of access to the internet, expensive internet, financial constraints, slow internet access speed, poor network infrastructure and limited number of computers as among the major factors that hinder distance learners from proper and effective usage of the electronic resources. However, other distance learners disagree with the fact that lack of knowledge of websites as among the major factors that hinder distance learners from proper and effective usage of the electronic resources. Other distance learners were not sure with the fact that irrelevant content, information overload and persistent power outages as among the major factors that hinder distance learners from proper and effective usage of the electronic resources.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0   Introduction

This chapter summarizes the key findings of the study and also presents the conclusion and recommendations based on the study findings. The chapter also pinpoints the areas for further study. The major purpose of this study was to investigate distance learners' use of electronic resources at College of Education, University of Rwanda. Specifically, the study was set out to determine the types of electronic resources used by distance learners, the purpose of using electronic resources, and to examine the challenges faced by distance learners in the usage of electronic resources. Descriptive research design was used in this study. Additionally, a mixed research approaches was adopted in this study.   The analysis of quantitative data was done using Statistical Product and Service Solutions (SPSS) version 21. Thus, descriptive statistics such as frequencies and percentages were computed and the results were further presented in tables, figures and bar-charts. On the other hand, qualitative data was analyzed by using thematic analysis technique.

5.1   Summary of the Findings

5.1.1   Types of the Electronic Resources Used by Distance Learners

The study findings indicate that underutilisation of e-resources by distance learners, as few of them used e-journals, e-books, scholarly online databases and institutional repositories, relying mostly on search engines.

Inadequate awareness of scholarly online resources as well as limited search skills among distance learners explains this.

5.1.2   Purpose of using Electronic Resources among Distance Learners

The study findings also indicate that the major purposes of using e-resources among respondents are to support assignments and recreational purposes, with the least use being supporting literature review, preparation of workshop/seminar. These findings show that distance learners do not make effective use of e-resources to support

learning and research although majority of them indicated to be satisfied with the e-resources.

5.1.3 Challenges Faced Distance Learners in the Usage of Electronic Resources

Findings revealed that major challenges that faced distance learners in the usage of the electronic resources were lack of access to the internet, expensive internet, financial constraints, slow internet access speed, poor network infrastructure, limited number of computers, irrelevant content, information overload persistent power outages and lack of knowledge of websites.

5.2 Conclusion

Generally, the findings have shown underutilization of e-resources by the distance learners, attributed to various factors such as lack of access to the internet, expensive internet, financial constraints, slow internet access speed, poor network infrastructure and limited number of computers have been cited as the most challenging factor that hinder distance learners from proper and effective usage of the electronic resources. Lack of knowledge of websites was observed as the minor factors that hinder distance learners from proper and effective usage of the electronic resources.

To ensure effective use of e-resources by distance learners at the University of Rwanda, factors that hinder distance learners from proper and effective usage of the electronic resources need to be overcome.

5.3 Recommendations

Based on the study findings and conclusion, the following are some of the recommendations that could improve the use of the electronic resources among distance learners in Rwanda:

  i. To make effective use of the electronic resources, lecturers and library staffs should make sure they train distance learners on effective use of the internet.
  ii. Also, as the internet is the basic tool in the ODL environment, the university management should make sure that internet infrastructure is improved.

Internet should be sufficient, faster, reliable and free of access to all distance learners. This will help distance learners to good and smooth learning environment.

iii. Furthermore, computer laboratory and library computer laboratory of the university should have enough and modern computers so as distance learners could have enough and appropriate learning facilities. This is because it is not possible for each distance learners to have his/her own personal computers/laptop or smartphones as these are among the vital learning facilities.

iv. The UR-CE library should increase the number of qualified staffs working in the computer labs in order to facilitate library users. Qualified staffs are able to provide needed library online resources.

v. To overcome the problem of persistent power outages, the university management should make sure that there is alternative power supply such as standby generator, and it should be reliable.

vi. Library management should regularly conduct training on the usage of the electronic resources to its users to increase awareness. This will helps to broaden the usage of different search techniques. It will help distance learners to maximize the usage of electronic resources available in University Library.

5.4   Area for Further Research

Since the present study concentrates on the use of the electronic resources among distance learners, further research could include other mode of education delivery by examining the use of electronic resources by secondary school students and higher learning students. Further research should be done on the usage of the electronic resources among disabled students such as blind. Studies should be carried out to the access library services by students with disabilities in University of Rwanda. Also, further studies should be conduct to the impact of social media tools in marketing the library collection in Public library.

REFERENCES

Adogbeji, O., & Akporhonor, B. (2005). The Impact of ICT (Internet) on Research and Studies: the experience of Delta State university students in Abraka, Nigeria. Library Hi Tech News, 22(10), pp.17-21.

Ahmed, S. & Amjad, A. (2014). Evaluation of researchers' satisfaction with electronic resources in two universities of Pakistan. *Library Hi Tech News. [Online]* 31 (7), pp.20-25. DOI: 10.1108/LHTN-06-2014-0043.

Akuffo, M., & Budu, S. (2020). Use of electronic resources by students in a premier postgraduate theological university in Ghana', *South African Journal of Information Management,* 21(1), a1026. https://doi.org/ 10.4102/sajim.v21i1.1026.

Amankwah, P. (2014). Use of electronic resources by undergraduate students of the Ghana Institute of Management and Public Administration', MAdissertation: University of Ghana

Amjad, A., Ahmed, S., & Naeem, S. (2013). Use of Electronic Information Resources Among Research Scholars in the Islamia University of Bahawalpur, Pakistan. *New Review of Academic Librarianship.* 19 (3), pp.316-328. Available from: DOI: 10.1080/13614533.2013.829505.
Accessed on 29/07/2021

Anand Y. (2014). Types of e-resources and its utilities in Library. *ResearchGate. [Online]* 1 (2), 97-104. https://www.researchgate.net/publication/268508509

Ani, O. (2013). Accessibility and utilization of electronic information resources for research and its effect on productivity of academic staff in selected Nigerian Universities between 2005 and 2012. PhD Thesis. University of South Africa.

Anyim, O. (2018). E-Library Resources and Services: Improvement and Innovation of Access and Retrieval for Effective Research Activities in University E-libraries in Kogi State Nigeria. *Library Philosophy and Practice (e-journal).* 1647, https://digitalcommons.unl.edu/libphilprac/1647.

Aramide, K., & Bolarinwa, O. (2010). Availability and use of audiovisual and electronic resources by distance learning students in Nigerian Universities: a case study of National Open University of Nigeria (NOUN), Ibadan Study Centre. *Library Philosophy and Practice (e-journal).*

http://digitalcommons.unl.edu/libphilprac/393/. *Accessed on 29/06/2021*

Bhatia, J. (2011). Use of Electronic Resources in Degree College Libraries in Chandigarh. *DESIDOC Journal of Library & Information Technology*. 31 (6), pp.480-484. http://0- search. proquest. com. oasis. unisa. ac. za/ docview/ 1413411953?accountid=14648.

Borteye, W., & Dadzie, P. (2015). Awareness and use of open access journals by graduate students of the University of Ghana', Innovation: *Journal of Appropriate Librarianship and Information Work in Southern Africa,* 2015(50), http://journals.co.za/content/innovation/2015/50/ EJC174761.

Burgstahler, S. (2002). Distance learning: universal design, universal access. Association for the Advancement of Computing in Education, 10(1), 32-61.

Butcher, N. (2015). Basic guide to open educational resources (OER). Commonwealth of Learning, Vancouver and UNESCO.

Chaputula, A. (2011). State, adoption and use of ICTs by students and academic staff at Mzuzu University, Malawi. *Electronic Library and Information Systems,* 46(4), pp.364-382.

Creswell, J. (2012). Educational research: Planning, conducting, evaluating, quantitative, and qualitative (Fourth Edition). United State of America: Pearson Education Inc.

Creswell, J., & Creswell, D. (2018). Research design: qualitative, quantitative and mixed methods approaches (5th Ed.). Los Angeles: Sage.

Dadzie, P. (2005). Electronic resources: access and usage University College. Campus Wide Information Systems, 22(5), pp.290-297.

Damilola, O. (2013). Use of Electronic Resources by Distance Students in Nigeria: The Case of the National Open University, Lagos and Ibadan Study Centers. *Library Philosophy & Practice.* 1-12. http://0- web. b.ebscohost.com.oasis.unisa.ac.za/ehost/pdfviewer/pdfviewer?vid=0&sid=52 1cbb fc-9693-4669-a60e-ce030b8e2971%40sessionmgr101.

Dayakar, G. (2018). Use of e-resources in higher education: Advantage and concerns. *Journal of Applied and Advanced Research.* 3(Suppl. 1), pp.17-19. https://dx.doi.org/10.21839/jaar.2018.v3S1.160.

Deng, H. (2010). Emerging patterns and trends in utilizing electronic resources in a higher education environment: An empirical analysis. *New LibraryWorld.* 111 (3/4), pp.87–103. http://0-dx. doi. org. oasis. unisa. ac. za/ 10.1108/ 030748010110227600.

Desta, A. (2018). The Use of Electronic Information Resources by Postigraduate Students at UNISA Regional Learning Center in Ethiopia. MA Information Science Thesis: University of South Africa

Dhanavandan, S., Esmail, S., & Nagarajan, M. (2012). Use of ElectronicResources at Krishnasamy College of Engineering & Technology Library, Cuddalore. *Library Philosophy & Practice.* pp.1-7. http://0-web.a.ebscohost.com.oasis.unisa.ac.za/ehost/pdfviewer/pdfviewer?sid=a1066 f08- f271-492e-9c4c-666a8597bacf%40sessionmgr4003&vid=1&hid=4002.

Dubale, F. (2019). Use of Electronic Information Resources at the United Nations Economic Commission for Africa Library in Addis Ababa Ethiopia. MA Information Science Thesis: University of South Africa

Egberongbe, H. (2011). The Use and Impact of Electronic Resources at the University of Lagos. *Library Philosophy & Practice.* pp.147-155. http://0-web.a.ebscohost.com.oasis.unisa.ac.za/ehost/pdfviewer/pdfviewer?sid=46bf6 a17- 659c-4cb9-8c6c-999aa9aee204%40sessionmgr4005&vid=1&hid=4002.

Ekere, Omekwu & Nwoha (2016). Users' Perception of the Facilities, Resources and Services of the MTN Digital Library at the University of Nigeria, Nsukka. *Library Philosophy and Practice (e-journal),* 1390. http://digitalcommons.unl.edu/libphilprac/1390.

Erich, A. (2013). The role of the university library for an efficient use of the electronic resources. Library and Information Science Department, Faculty of Letters, University of Bucharest, Roman. (17), pp.65-83. http://0-search.proquest.com.oasis.unisa.ac.za/docview/1622284712?accountid=1464 8.

Fasola, O. (2013). Use of electronic resources in a private university in Nigeria: awareness and constraints. *Information Technologist.* 10 (2), pp.83-91. http://0-web.b.ebscohost.com.oasis.unisa.ac.za/ehost/pdfviewer/pdfviewer?vid=0&sid=d5195b e1-5c1d-46c2-9f4e-15fc6ef2fa23%40sessionmgr103.

Fourie, I., & Bothma, T. (2005). Addressing the digital divide in teaching information retrieval: a theoretical view on taking students from ICT accessto knowledge sharing. The Electronic Library, 24(4), pp.469-489.

Gandhi, S. (2003). Academic Librarians and Distance Education: Challengesand Opportunities. *Reference & User Services Quarterly.* 43 (2), pp.138-154.

Ge, X. (2010). Information-Seeking Behavior in the Digital Age: A Multidisciplinary Study of Academic Researchers. *College & Research Libraries.* 71 (5), pp.435-455. http:// 0web.a. ebscohost. com. oasis. unisa. ac. za/ehost/pdfviewer/pdfviewer?vid=0&sid=a410ed a3-881e-4ff1-9ef9-8122a3587b52% 40sessionmgr4007.

Gupta, S., & Sharma, S. (2015). Use of Digital Information Resources and Services by the Students of IIT Mumbai Central Library: A Study. *International Journal of Information Dissemination & Technology.* 5 (1), pp.1-11. http://0-web.a.ebscohost.com.oasis.unisa.ac.za/ehost/pdfviewer/pdfviewer?sid=a3eee bf1-bfce- 45a6-9947-b31a3847f7e9%40sessionmgr4003&vid=0&hid=4107.

Hamutumwa, M. (2014). Electronic Resources use by Distance Learners at University of Namibia. PhD Thesis: University of Kwazulu-Natal

Harerimana, A., & Mtshali, N. (2018). Implementing E-Learning in Resource-Constrained

Nursing Education Institutions in Rwanda. Journal of Nursing and Health Science, 4(1), pp.1-10. https:// www. researchgate. net/ publication/ 324771765_ Implementing_ E-Learning_in_Resource.

Haridasan, S., & Khan, M. (2009). Impact and use of e-resources by social scientists in National Social Science Documentation Centre (NASSDOC), India. *The Electronic Library.* 27 (1), pp.117 – 133. http://0-dx.doi.org.oasis.unisa.ac.za/10.1108/02640470910934632.

Hawthorne, D. (2008). History of electronic resources. In: Yu, H. & Breivold, S. (eds) Electronic Resource Management in Libraries: *Research and Practice.* USA, IGI Global. pp.1-15. https:// books. google. com. Ng /books? id=aZGyjL3uatIC&pg=PT24&dq=Dalene+Hawth orne,+History+of+Electronic+Resources&hl=en&sa=X&ved=0ahUKEwjC9r _0n_XbAhXJuhQKHWspCw4Q6wEIJjAA#v=onepage&q=Dalene%20Hawt horne%2C%20H istory%20of%20Electronic%20Resources&f=false.

Ivy, R., & Jane, I. (2016). Open and Distance Learning: benefits and challenges of technology usage for online teaching and learning in africa. Maseru: Botho University.

Joshua, D. (2014). Users' Assessment of E-Resources at the University Library of the University of the Philippines, Diliman. *Journal of Philippine Librarianship.* 34, pp.1-13. http://0- web.a. ebscohost. com. oasis. unisa. ac. za/ ehost/ pdfviewer/pdfviewer?sid=eba52a53-9fe8-4f07-b6a7-4fd40fdc598b%40sessionmgr4002&vid=0&hid=4107.

Kaur, B., & Verma, R. (2009). Use and impact of electronic journals in the Indian Institute of Technology, Delhi, India. *The Electronic Library.* 27 (4), pp.611 – 622. http://0-dx.doi. org. oasis. unisa. ac. za/ 10. 1108/ 02640470910979570.

Kennedy, M. (2013). Collaborative Marketing for Electronic Resources: A Project Report and Discussion. *Library & Information Science Source.* 5 (1), pp.42-51. http://0- web.b. ebscohost. com. oasis. unisa. ac. za/ ehost/ pdfviewer/pdfviewer?sid=4941cb49-6a5a-499d-ba97 f10a6a18ce31%40sessionmgr115&vid=0&hid=110.

Khan, A., & Ahmed, S. (2013). The impact of digital library resources on scholarly communication: challenges and opportunities for university libraries in Pakistan. *Library Hi Tech News,* 30 (8), pp.12-29. Available from: DOI: 10.1108/LHTN-07-2013-0046.

Lee, S., & Boyle, F. (2004). Building and Electronic Resource Collection: A Practical Guide (2^{nd}Ed.). London: Facet Publishing

Liu, F., & Maitlis, S. (2010). Non-participant Observation. In Mills, A. J., Durepos, G., & Wiebe, E. (Eds.) Encyclopedia of Case Study Research. Thousand Oaks: SAGE Publications, Inc. http://srmo.sagepub.com/view/encyc-of-case-studyresearch/n229.xml

Liyi, Z., Pinghao Y., Qihua L., & Lijun R. (2011). Survey on the utilization of NSTL electronic resources in colleges and universities in Wuhan, China. *The Electronic Library.* 29 (6), pp.828 – 840. http://0-www.emeraldinsight.com.oasis.unisa.ac.za/doi/pdfplus/10.1108/0264047111 1188042.

Ministry of Education. (2016a). ICT in Education Policy. Approved by the Cabinet in April 2016. Kigali: Ministry of Education.

Ministry of Education. (2016b). Rwanda National Open, Distance and e-Learning Policy. Draft document. Kigali: Ministry of Education.

Ministry of Education. (2016c). 2016 education statistical yearbook. Kigali: Ministry of Education.

Moahi, K. (2002). Issues of just- in- time (access) v. just- in- case (ownership) for libraries in developing countries: lessons to be learnt from developed countries. *Library review.*

Moyo, M. (2017). Awareness and Usage of Electronic Library Resoiurces in Open Distance Learning by Third Year Students in the School of Arts at the University of South Africa. MA Information Science Thesis: University of South Africa

Mporananayo, N., Niyonzima, S., & Mukeshimana, C. (2020). E-Learning and Open Distance Education (ODL) in IPRC Kigali during COVID-19 Pandemic Spread: Opportunities and Challenges Available. *Journal of Education and Practice,* 11(27).

Natarajan, N., Ravi, S., & Ravichandran P. (2012). Usage of E- Resources at Madras Institute of Technology (MIT) Library: A Case Study. *Asian Journal of Information Science & Technology (AJIST).* 2 (1), pp.48-51. http://0-web.ebscohost.com.oasis.unisa.ac.za/ehost/pdfviewer/pdfviewer?sid=9b95d1cf-fa21- 4a97-bbf4-1f563357ebda%40sessionmgr112&vid=1&hid=118.

Ndayanbaje, I., Bimenyimana, T., & Ndahayo, V. (2015). A study on the practices and challenges of Distance Training Programme (DTP) under Kigali Institute of Education (KIE*). Rwandan Journal of Education,* 69-76.

Nicholson, H., & Eva, N. (2011). Information literacy instruction for satellite university students. Reference Services Review, 39(3), pp.497-513.

Oduwole, A., & Akpati, C. (2003). Accessibility and retrieval of electronic information at the University of Agriculture Library, Abeokuta, Nigeria. *Library review.*

Okello-Obura, C., & Ikoja-Odongo, J. (2010). Electronic Information Seeking Among LIS Postgraduate Students at Makerere University, Uganda. *Library Philosophy & Practice.* pp.1-13. http://0- web. a. ebscohost. com. oasis. unisa.ac.za/ehost/pdfviewer/pdfviewer?sid=f0be2685-fc60-4d91-91ff-c50d8d2598cf%40sessionmgr4003&vid=0&hid=4107.

Oketunji, I., Daniel, J., Okojie, V., & Abdulsalam, R. (2002). 40years of library and information services to the nation. In A compendium of papers presented at the 40 th Nation conferences and AGM of the Nigeria library Association.

Okiki, O. (2012). Electronic Information Resources Awareness, Attitude and Use by Academic Staff Members of University of Lagos, Nigeria. *Library Philosophy & Practice.* 1-8. http://0- web. a. ebscohost. com. oasis. unisa. ac.za/ehost/pdfviewer/pdfviewer?sid=0984986c-3492-4703-a10a-bd54e766be16%40sessionmgr4003&vid=0&hid=4107.

Olaniran, S., Duma, M., & Nzima, D. (2017). Assessing the Utilization Level of E-Learning Resources among ODL Based Pre-Service Teacher Trainees. *The Electronic Journal of e-Learning.* 15(5), pp.384-394. www.ejel.or.

O'Malley, J., & McCraw, H. (1999). Students Perceptions of Distance Learning, Online Learning and the Traditional Classroom. Online Journal of Distance Learning Administration, 2. https:// www. westga. edu/~ distance/ omalley24.html.

Opeyemi, O. (2018). Access to and Use of Library Electronic Resources at the National Open University of Nigeria. MA Information Science Dissertation. University of South Africa

Rehman, K., Hunjra, A., Safwan, N., & Ahmad, A. (2010). Students" attitude towards the uses of internet. *International Journal of Business andManagement*, 5(6), pp.46-55.

Reitz, J. (2004). Online Dictionary for Library and Information Science (ODLIS). http://www.abc-clio.com/ODLIS/odlis_p.aspx#publishing.

Sekaran, U. (2003). Research methods for business: A skill approach. New Jersey: John Willey and Sons, Inc.

Sivakumaren, Swaminathan, Jeyaprakash & Geetha (2012). Usage of Library Resources and Services among LIS Research Scholars in Tamil Nadu, India. Chinese Librarianship: an *International Electronic Journal*, 33, pp.1–10. www.iclc.us/cliej/cl33SSJG.pdf.

Swain, D., & Panda, K. (2009). Use of electronic resources in business schoollibraries of an Indian state: A study of librarians' opinion. *The Electronic Library.* 27 (1), pp.74 – 85. http://0-dx.doi.org.oasis.unisa.ac.za/10.1108/02640470910934605.

Tao, D. (2008). Understanding intention to use electronic information resources: a theoretical extension of the Technology Acceptance Model (TAM). AMIA annual symposium proceeding. pp.717-721. http:// www. ncbi. nlm. nih. gov/ pmc/ articles/PMC2656102/pdf/amia-0717-s2008.pdf.

Taherdoost, H. (2016). How to design and create an effective survey/questionnaire; A step by step guide. *International Journal of Academic Research in Management (IJARM),* 5(4), pp.37-41.

Thanuskodi, S. (2011). Usage of Electronic Resources at Dr T.P.M. Library, Madurai Kamaraj University: A Case Study. *DESIDOC Journal of Library & Information Technology.* 31 (6), pp.437-445. http://0-

web.a.ebscohost.com.oasis.unisa.ac.za/ehost/pdfviewer/pdfviewer?sid=83f65 986- 545d-4abb-b238-39f6b1b914f1%40sessionmgr4005&vid=1&hid=4112.

Tripathi, M., & Jeevan, V. (2009). Enabling Electronic Resource Access for Distance Learners. *INFLIBNET's Institutional Repository.* pp.610-620. http://hdl.handle.net/1944/1307.

Ukachi, N., Onuoha, U., & Nwachukwu, V. (2014). Students ' Attitudes as a Determining Factor to Electronic Information Resources Use in University Libraries in South-West , Nigeria. *DESIDOC Journal of Library & Information Technology*, 34(4), pp.333–341.

UNISA (2018). Open Distance eLeaning Policy, Retrieved from https://www.unisa.ac.za/static/myunisa/Content/Student%20affairs%20&%20 SRC/Documents/SRC%20Important%20Policy%20Documents/Policy%20- %20Open%20Distance%20e-Learning%20- %20rev%20appr%20Exco%20of%20Council%20-%2010.12.2018.pdf

Yamane, T. (1967). Statistics: An introductory analysis - 2nd ed. New York: Harper and Row.

Umar, J. (2015). Assessment on the Use of Electronic Resources by Undergraduate of Library and Information Science Students Ahmadu Bello University Zaria. Bachelor of Library and Information Science Dissertation: Ahmadu Bello University

Wilson, T. (1999). Models in information behaviour research. *Journal of documentation*.

Yang, Z., & Li, Y. (2015). University faculty awareness and attitudes towards open access publishing and the institutional repository: A case study', *Journal of Librarianship and Scholarly Communication*, 3(1), eP1210. https://doi. org/10.7710/2162-3309.1210.

Zafar, A. (2013). Students' Perception of Electronic Resources in MBBS Nursing Aga Khan University. *Pakistan Library & Information Science Journal,* 44 (1), pp.31-37. http://0- web. a. ebscohost. com. oasis. unisa. ac.za/ehost/pdfviewer/pdfviewer?sid=48a485fd-36de-4a25-9255- 10753a7b85e7%40sessionmgr4004&vid=0&hid=4112.

APPENDICIES

Appendix One: Questionnaire (For Distance Learners)

Dear Respondent, I am MUREBWAYIRE Alice, a postgraduate student at University of Dar Es Salaam, Tanzania where I am pursuing a Master's in Information Studies. I am conducting a research entitled "***Distance Learners' Use of Electronic Resources at College of Education, University of Rwanda".*** I request you to fill this questionnaire. Please note that your responses in this questionnaire shall be used only for advancement of this study. You are therefore assured that your responses will be treated with high level of confidentiality. I, therefore, look forward to your support in this noble cause.

Thank you for your co-operation.

SECTION A. PERSONAL INFORMATION

1. Faculty…………………………………..……………………………………….…

2. Combination…………………………………………………………….…………

3. Study Regional Center - Put a tick (√)

    a) Rukara ☐

    b) Nyarugenge ☐

    c) Busogo ☐

    d) Huye ☐

4. Your gender- Put a tick (√)

    a) Male ☐

    b) Female ☐

5. Age group - Put a tick (√)

    a) Less than 25 years ☐

    b) 25-30 years ☐

    c) 31-35 years ☐

    d) 36-40 years ☐

    e) 41 years and above ☐

6. Year of study - Put a tick (√)

    a) First Year ☐

    b) Second Year ☐

7. Your marital status- Put a tick (√)

    a) Single ☐

    b) Married ☐

    c) Divorced ☐

    d) Widowed ☐

8. Source of income- Put a tick (√)

    a) Employment ☐

    b) Business activity ☐

    c) Other, (specify)…………

SECTION B: TYPES OF THE ELECTRONIC RESOURCES USED BY DISTANCE LEARNERS

9. Are you aware of the electronic resources provided by the University of Rwanda, College of Education Library? - Put a tick (√)

    a) Yes ☐

    b) No ☐

10. How did you learn about the types of electronic resources in University of Rwanda, College of Education library through: (Please, select only applicable)

    a) Personal Discovery ☐

    b) Lecturers ☐

    c) Induction week ☐

    d) Friends and Colleagues ☐

    e) Library staff ☐

    f) Noticeboard ☐

    g) Library website ☐

    h) Others, (specify)…………………

11. If you have answered "YES" to question 9 above, what types of electronic resources do you use? (Please, select only applicable)

    a) E- books ☐

    b) E-Journals ☐

    c) Online database ☐

    ☐

d) Search engines (Google, Yahoo, Bing, etc.)

e) Institutional repository ☐

f) Other, (specify)……..………………………….

12. How do you access electronic resources? (Please, select only applicable)

a) Personal computer/ Laptop ☐

b) Smartphone ☐

c) Tablet ☐

d) Computer laboratory ☐

e) Library computer laboratory ☐

f) Internet cafe ☐

g) Other (specify)……………………….

13. How often do you use electronic resources at University? (Please, select one answer only) ☐

a. Daily

b. Several days a week ☐

c. Weekly ☐

d. Monthly ☐

e. Other, (specify)……………

SECTION C: PURPOSE OF USING ELECTRONIC RESOURCES AMONG DISTANCE LEARNERS

14. For what purpose do you use e-resources? (Please, select only applicable)

a) To support assignment ☐

b) For writing literature ☐

c) For preparation of workshop/seminar ☐

d) For further studying on subject of interest ☐

e) For recreation ☐

f) Other, (specify)…………………………………

15. To what extent are you satisfied with e-resource provided at the University of Rwanda? (Please, select one answer only)

a) Very satisfied ☐

b) Satisfied ☐

c) Undecided ☐

☐

d) Dissatisfied

e) Very Dissatisfied ☐

16. What resources do you mostly use in your assignment?

a) E-resources ☐

b) Print resources ☐

c) Audiovisual ☐

d) Other, (specify)……………………

17. Did you attend any training on how to use the internet? Put a tick (√)

a) Yes ☐

b) No ☐

18. If "YES", what types of training did you attend? (Please tick one answer only)

a) Library orientation/induction ☐

b) Workshop /Seminars ☐

c) Attending a course ☐

d) Other (specify)………………………………

19. How skilled are you in searching the internet?

a) Very skilled ☐

b) Skilled ☐

c) Inadequately skilled ☐

20. What internet use skills do you have?

a) I am skilled in formulating search queries ☐

b) I am skilled in the use of electronic library tools ☐

c) I am skilled in online navigation techniques ☐

d) I am skilled in the knowledge of database structures ☐

e) I am skilled in the use of computer ☐

Other, (specify)……………………………………………………………………

SECTION D: CHALLENGES FACED IN USAGE OF THE ELECTRONIC RESOURCES AMONG DISTANCE LEARNERS

21. What are the main problems you face when accessing electronic resources?

Please select the appropriate options below by ticking (√) in the spaces provided

ITEMS	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
	(1)	(2)	(3)	(4)	(5)
Limited access and expensive internet					
Lack of assistive devices and IT skills					
Unattractive and ineffective content					
Slow internet access speed					
Overloaded with information					
Lack of enough time to search for information					
Poor network infrastructure					
Limited number of computers					
Persistent power outages					
Financial constraints					
Little or lack of knowledge of websites/search engines					
Others, (specify)…………………					

22. What do you think should be done to overcome the above challenge(s)

…………………………………………………………………………………………

…………………………………………………………………………………………

…………………………………………………………………………………………

…………………………………………………………………………………………

…………………………………………………………………………………………

…………………………………………………………………………………………

…………………………………………………………………………………………

…………………………………………………………………………………………

THE END OF THE QUESTIONNAIRE

Thank you for your participation

Appendix Two: Interview Guide (Director of Library and Librarians)

PART I: TYPES OF ELECTRONIC RESOURCES USED BY DISTANCE LEARNERS

a. Are distance learners aware of the Electronic Resources provided by the University of Rwanda, College of Education Library?

b. What methods do you use to make distance learners aware of e-resources?

c. Do you provide any training to distance learners on internet use?

PART II: PURPOSE OF USING ELECTRONIC RESOURCES AMONG DISTANCE LEARNERS

a. What do you think is the level of usage of electronic resources by distance learners?

b. Explain how increasing computerized access to library materials and services could help off-campus students succeed in their coursework.

c. What support system is in place to adequately train distance learners on how to use the electronic resources subscribed to by the University of Rwanda, College of Education Library?

d. What competencies do library staff have to effective provide electronic resources?

e. Do you think distance learners are well equipped with skills to adequately utilize electronic resources? If not what skills do you think they need

PART III: CHALLENGES FACED BY DISTANCE LEARNERS IN THE USAGE OF ELECTRONIC RESOURCES

a. What challenges do you think distance learners are facing in the usage of electronic resources?

b. What do you do to alleviate these challenges?

Final comment: Do you have anything else that you would want to say regarding the usage of electronic resources by distance learners?

Thank you for your participation

Appendix Three: Interview Guide (Lecturers)

PART I: TYPES OF ELECTRONIC RESOURCES USED BY DISTANCE LEARNERS

a. Do you think distance learners are aware of the Electronic Resources provided by the University of Rwanda, College of Education Library?

b. Which types of electronic resources are being used mostly by distance learners in their learning i.e. when attending assignments?

c. Do you orient distance learners on various types of electronic resources that are to be used in their learning?

PART II: PURPOSE OF USING ELECTRONIC RESOURCES AMONG DISTANCE LEARNERS

a. What do you think is the level of usage of electronic resources by distance learners?

b. Explain how increasing computerized access to library materials and services could help off-campus students succeed in their coursework.

c. To what extent do your students use e-resources in their assignments?

d. Do you encourage your students to use e-resources in their assignments?

PART III: CHALLENGES FACED BY DISTANCE LEARNERS IN THE USAGE OF ELECTRONIC RESOURCES

a. What challenges do you think distance learners are facing in the usage of electronic resources?

b. What can be done to alleviate these challenges?

Final comment: Do you have anything else that you would want to say regarding the usage of electronic resources by distance learners?

Appendix Four: Observation Guide

During observation, the researcher will take note of the following:

1. Identify types of electronic resources mostly used by distance learners in their learning

2. Determine the Examine extent to which distance learners at the college of Rwanda use/access e-resources.

3. Identify challenges distance learners face in the using electronic resources.

4. Any effort made to address the challenges.

5. Type and adequacy of ICT facilities used by students to access e-resources.

6. Purpose of using ICT facilities/extent to which ICT facilities in laboratories are used to access e-resources.