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**Information Access Needs of Satellite Campuses in Kenya -
Can OER Close the Gap? The Case of Moi University Nairobi
Campus.**

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DECLARATION

I certify that all material in this dissertation which is not my own work has been identified and that no material is included for which a degree has previously been conferred upon me.

..... Monica Wawira Gakindi..... (Signature of candidate)

Submitted electronically and unsigned.

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ABSTRACT

This case study was aimed at obtaining the experiences of faculty and students of Moi University, Nairobi Campus in accessing information resources for teaching, learning and research. The study examined background information regarding knowledge societies and the role of higher education in society. This was done with a view to exploring the potential of Open Educational Resources in enhancing access to teaching, learning and research information resources at the campus.

The literature review focused on the concept of Open Educational Resources (OER) and provided a critical examination of access to knowledge and learning materials in higher education. Evidently, little empirical studies have been conducted in Africa concerning OER. The Communities of Practice theory was adopted to inform the study with regard to learning experiences and their realization in communities.

Online questionnaires and interviews were the principle data collection instruments. These were administered upon faculty, students and the librarian of Moi University, Nairobi campus. Furthermore, data was also gathered through interviews with OER experts from North America, Europe, and Africa. These experts provided vital information on the potential of OER in enhancing access to teaching, learning and research information resources to institutions such as the case for this study.

The findings of the study revealed that the concept of OER was not clearly understood by the respondents and interviewees from the case institution. Respondents confused the concept of OER with other concepts like e-learning. Nevertheless, they signaled appreciation for access to open resources. In addition, it was evident that the faculty and students of this institution had insufficient access to resources. The library was not sufficiently stocked with information materials and facilities to cater for the growing population of the campus.

The study recommends the adoption of more open educational practices through the creation of electronic institutional repositories that are open and searchable. Furthermore, the study suggests greater collaboration and sharing of resources and teaching practices among faculty within the campus and beyond. To achieve this, both faculty and students require information literacy skills. Finally, the study recommends that the librarians and information professionals be more proactive in identifying and bringing awareness to clients about available and relevant open resources.

Keywords: Open Educational Resources, Kenya, access to learning materials, higher education.

TABLE OF CONTENTS

DECLARATION	i
ACKNOWLEDGEMENT	ii
ABSTRACT.....	iii
LIST OF TABLES AND FIGURES	vii
List of Figures	vii
List of Tables.....	vii
List of Abbreviations.....	viii
CHAPTER 1: INTRODUCTION.....	1
1.1 Motivation.....	1
1.2 Background and Context.....	1
1.3 Statement of the Problem	4
1.4 Theoretical Framework	5
1.4.1 Conceptual Framework	6
1.5 Research Aim, Objectives and Questions	7
1.6 Methodology	8
1.7 Justification for the Research	8
1.8 Scope of the Research	9
1.9 Significance of the Research	10
1.10 Outline of the Thesis	11
1.11 Conclusion.....	11
CHAPTER 2: LITERATURE REVIEW	12
2.1 Introduction	12
2.1.1 Structure of the Discussion.....	13
2.2 Higher Education	14
2.2.1 Mission and Role of Higher Education	14
2.2.2 Higher Education in Kenya	15
2.2.3 Higher Education and Training in the Global Knowledge Society.....	17

2.2.4 Access to Learning Resources.....	18
2.2.5 Emerging Trends in Higher Education.....	20
2.3 Open Educational Resources.....	22
2.3.1 Background.....	22
2.3.2 Definition of OER	23
2.3.3 Production Models of OER	24
2.3.4 Research on OER	25
2.3.5 OER and the 4A Framework of the Human Right to and in Education.	29
2.3.5 Licensing of OER’s	35
2.4 Conclusion.....	38
CHAPTER 3: METHODOLOGY	40
3.1 Introduction.....	40
3.2 Justification for the Paradigm and Methodology.....	40
3.3 Research Method.....	41
3.4 Research Design.....	41
3.5 Study Population	42
3.6 Sample.....	42
3.7 Techniques for Data Collection	44
3.7.1 Pre Study Site Visits.....	45
3.7.2 Questionnaires	45
3.7.3 Interviews	48
3.7.4 Pilot Study	51
3.7.5 Document Review	53
3.8 Ethical Considerations	53
3.9 Credibility Strategy Employed in the Research	54
3.10 Delimitations of the Study	54
3.11 Data Analysis	55
3.12 Conclusions.....	55
CHAPTER 4: DATA PRESENTATION ANALYSIS AND DISCUSSION	56
4.1 Introduction.....	56
4.2 Part One: Presentation and Analysis of Data from the Case Institution	57

4.2.1 Online Questionnaire Data	57
4.2.1 Interview Data	75
4.3 Presentation, Analysis and Discussion of Data: Responses from OER Experts.....	86
4.3.1 Viability of OER: Is OER Appropriate and Useful for Moi University?	86
4.3.2 Applicability of OER In Relation to Various Issues	87
4.3.2.1 Sensitization and Awareness Raising	87
4.3.3 Collaboration and OER	91
4.4 Part Two: Discussion and Relationship to Literature	92
4.4.1 Background Information	92
4.4.3 Collaboration	95
4.4.4 Viability of OER.....	97
4.4.5 Sensitization and Awareness Raising.....	97
4.4.6 Intellectual Property Rights.....	98
4.4.7 Collaboration and OER	98
4.5 Conclusion.....	100
CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS.....	102
5.1 Introduction	102
5.2 Conclusions about Research Questions	103
5.2.1 Research Question One	103
5.2.2 Research Question Two.....	105
5.2.3 Research Question Three.....	106
5.3 Conclusions about the Research Problem.....	106
5.4 Recommendations	107
5.5 Further Research	110
REFERENCES	111
APPENDICES	120
APPENDIX 1: ONLINE QUESTIONNAIRE FOR FACULTY.....	120
Appendix2: Online Questionnaire for Students	130
Appendix 3: Interview Schedule for Librarian	138
Appendix 4: Interview Schedule for OER Experts.....	138

LIST OF TABLES AND FIGURES

List of Figures

Figure 1: Conceptual Framework guiding the study-----	7
Figure 2: Additional Current Faculty Teaching Engagements-----	59
Figure 3: Sources of Information Sought by Faculty and Students-----	62
Figure 4: Alternative/Additional Places from where Students access Information Resources for Learning and Research (%) -----	63
Figure 5: Type and Formats of Information Accessed and Used by Faculty for Teaching and Research (%) -----	64
Figure 6: Type and Formats of Information Accessed and Used by Students for Learning and Research (%) -----	65
Figure 7: Faculty Responses on Availability of Equipment -----	67
Figure 8: Students Responses on Availability of Equipment -----	68
Figure 9: Representation of Places from Where Faculty Access Internet for Information (%) --- -----	69
Figure 10: Representation of Places from Where Students Access Internet for Information (%) -----	70
Figure 11: Representation of How Faculty Distributes Course Material and Assignments (%) -- -----	71

List of Tables

Table 1: The 4-A Conceptual Framework (Adapted From Tomasevski 2001, p. 12) -----	30
Table 2: Questionnaire Respondents for the Case Institution -----	44
Table 3: Faculty Years of Teaching and Number of Universities Taught -----	58
Table 4: Students' Level and Year of Study -----	61
Table 5: The 4-A Conceptual Framework (Adapted From Tomasevski 2001, p. 12) in Relation to OER -----	100

LIST OF ABBREVIATIONS

EBSCO – Elton B Stevens Company (Electronic Journals Database)

E-LIS – EPrints in Library and Information Science

HE – Higher Education

HEIs – Higher Education Institutions

ICT – Information and Communication Technology

JSTOR – Journal Storage (Electronic Journals Database)

KENET – Kenya Education Network Trust

MERLOT – Multimedia Educational Resource for Learning and Online Teaching

MIT – Massachusetts Institute of Technology

MU – Moi University

OA – Open Access

OER – Open Educational Resources

SAIDE – South African Institute for Distance Education

UNESCO – United Nations Educational, Scientific and Cultural Organization

CHAPTER 1: INTRODUCTION

1.1 Motivation

My studies in Europe, at various universities, have exposed me to well organized, easily accessible information and learning resources that not only made the learning experience very enjoyable, but also made me an active participant during classes. Given this exposure, and with a librarian's background, I started thinking of possible ways of enhancing such access to learning resources in Kenyan public universities, given their circumstances of insufficient budgets and a wanting Information and Communication Technology (ICT) infrastructure. Collaboration was one of the answers I got. On reading widely and with the help of my supervisor, I learnt about Open Educational Resources (OER) and the potential they hold - especially in the developing world where Higher Education Institutions (HEIs) suffer the same situation like Kenya. I therefore explored an emerging phenomenon of university expansions and identified a problem that this research seeks to study and inform of a possible solution using OER.

With the desire to return to my home country to contribute my knowledge and skills, doing a study in the area of my interest, that I am convinced would create a positive impact in the way teaching and learning is experienced by faculty and students at the universities, and particularly the satellite campuses seemed to be the most fulfilling aspect of my master programme.

1.2 Background and Context

The rise of a global society has resulted in a global demand for education and a growing gap between demand and supply of education (Geith and Vignare, 2008). Kenya is not an exception in this demand for education and is experiencing an expansion of HEI's – universities and university colleges, in order to accommodate the growing numbers of students. A newspaper article on the government's plan to fund universities quoted the higher

education science and technology minister Dr. Sally Kosgei in a speech delivered by the assistant minister on her behalf as follows: "...we have seen a phenomenal growth of the number of students who are self-sponsored in both public and private universities...We now have more than 150,000 students in the university system compared to about 122,000 in 2008," (Mwaniki, M. 2010, February 22). At present, there are seven main public universities each with at least one satellite campus in other towns, over ten public university colleges, over ten private universities some with satellite colleges and numerous private university colleges located all over the country. In the same speech, Dr. Kosgei added that the expansion of access to university education had resulted in the establishment of 13 new university colleges in the last two years (Mwaniki, M. 2010, February 22).

Moi University, the second public university to be established in Kenya, is the point of interest for the researcher. Established in 1984, following a presidential working party's report of 1981 that recommended the establishment of a second, science and technology oriented public university, the university has experienced phenomenal growth in the number of students, staff and academic programmes. From a single faculty of forestry and wildlife resources with less than 100 students at its inception, the university now boasts of fifteen schools and five directorates (as of 2009) (<http://www.mu.ac.ke/about/home.html>). The researcher's great attention is related to the expansion of satellite campuses. Since 2005, the university has established eight satellite campuses and two constituent colleges that are running semi autonomously. It is one of these satellite campuses - Nairobi campus, for the reasons to be elaborated further in chapter three that is the focus case.

The Nairobi campus was launched on 14th November 2005 and since its initiation, it has witnessed a tremendous growth with an increase of the number of courses offered and student enrollment. Currently, the student enrolment is estimated to be over 2,200. The campus hosts six schools; School of Information Science, School of Business and Economics, School of Human Resource Development, School of Public Health, School of Arts and Social Sciences and the School of Education. The School of Information Science is the most developed

offering undergraduate, postgraduate and doctoral programmes (<http://www.mu.ac.ke/campuses/nairobi/index.html>)

High quality human resources are vital to national development and the creation of global competitiveness. A key component to producing these human resources is an effective, quality higher education system (SAIDE Newsletter, 2009). A report of the United Nations Educational, Scientific and Cultural Organization (UNESCO) *Towards Knowledge Societies* stresses that governments should spend more to expand quality education for all, increase community access to information and communication technologies and improve cross-border scientific knowledge sharing (UNESCO, 2005). Nevertheless, despite all the developments and expansions in the field of Higher Education (HE) in Kenya, there are still many issues facing the sector that are hindering the provision of high quality education. To start with, many of the institutions are structurally underfunded for the core functions they are expected to perform. There are not enough learning resources for both students and faculty, and those available are expensive for purchase by the universities or students. Though the situation is slowly improving, there is still limited ICT infrastructure to gain access to up-to-date information available on the Internet. These are just some of the key problems facing the higher education institutions in the country (SAIDE Newsletter, 2009).

However, the emergence of the OER movement may be a turning point to improve the situation if taken up and the right policies adopted by the institutions. OER are teaching, learning and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or re-purposing by others (Atkins, Brown and Hammond, 2007). Open educational resources include:

- (a) Learning content - full courses, course materials, content modules, learning objects, collections, and journals.
- (b) Tools - software to support the creation, delivery, use and improvement of open learning content including searching and organization of content, content and learning management systems, content development tools, and on-line learning communities.

- (c) Implementation resources - intellectual property licenses to promote open publishing of materials, design-principles, and localization of content. (OECD, 2007)

Based on these notions, OER holds a great potential for the Kenyan and African universities at large. Because OER provides unlimited access to existing resources that would hitherto need permission and/or license to access, they hold the potential for reducing the cost of accessing educational materials in environments where students often cannot afford to buy textbooks and libraries are insufficiently resourced to supply ongoing demand for high quality educational materials. Moreover, with a good networking and collaboration base, the institutions expanding by building satellite colleges do not necessarily have to build new libraries that require huge sums of money and sometimes, space. The learning resources available in the main campuses can be accessed and shared by a well planned OER engagement. Furthermore, many of these satellite colleges offer similar courses with those offered at the main and other constituent campuses. Hence, lecturers would have a very good base to share their resources and broaden the scope of their course coverage. Students, on the other hand, would have an increased access to learning /information resources which they could access before their lectures and probably improve their participation in class rather than having them as passive listeners and absorbers of information (Strydom, 2009). All these, would lead to improved course quality and research performance.

1.3 Statement of the Problem

The university expansions being experienced in Kenya have been partly influenced by demand from the working community. Part of these individuals probably did not have the chance for automatic entry immediately after the completion of their secondary education while others want a second or higher degree. Most of them are driven by the need to upgrade their certificates in order to become competitive in the job market. The satellite colleges are situated in various towns to be able to accommodate the numbers of students and also to be close enough to the working communities so they do not have to leave work to attend university but rather take up evening and weekend classes (Chacha, 2004).

Nevertheless, the expansion of universities by setting up satellite campuses is not commensurate to expansion in access to facilities such as learning and research resources since the main campus hosts the equipped university libraries, thereby rendering the students and faculty unable to access crucial library and learning resources for research. Though there are similar courses offered in the main and satellite campuses, and sometimes, taught by different teachers, there is no a formal forum/platform where faculty share courseware and other relevant resources for their courses, yet the students are expected to sit the same examinations.

According to Mwiria (2007), the expansions have been curbed with a lack of clear mechanisms. He states that:

There has been a large body of legislation that has been growing over the years and has created numerous problems, the most serious being; (i) The absence of a mechanism for the determination and assessment of universal quality standards, (ii) chronic resource deficits for programme expansion, and research and staff development, and (iii) the lack of decision-making autonomy for the universities and (iv) the absence of a clear mechanism for the opening of satellite public university campuses across the country (p. 3).

The response to the growing demand for university education by expansion is vital, but mere expansion alone is not enough. The big question is; do the expanding universities fulfill/facilitate learning and research through enhancing access to relevant information resources and collaboration to enable them achieve the core function for which they were initiated? What more can they do to facilitate access to information resources for teaching, learning and research? It is in quest for the answer to this question that this study was carried out.

1.4 Theoretical Framework

Yin (2009, p. 40) indicates that “the use of theory, in doing case studies, is an immense aid in defining the appropriate research design and data collection”. He adds that this theoretical orientation is a vehicle in making generalizations of the case study results.

One of the objectives of this research is to establish the potential of Open Educational Resources in effecting learning through their access by faculty and students at the satellite campuses. The theoretical framework for this study will focus on a theory of learning with specific reference to the theory of Communities of Practice. Lave and Wenger (1991, p. 98) define Communities of Practice as “a set of relations among persons, activity and world, over time and in relation with other tangential communities of practice”. The theory posits that learning is essentially a social phenomenon that takes place in an organized structure of communities. These communities share in values, language, and beliefs. Therefore, real knowledge is found in the interactions that take place within the communities of practice. Hence, according to this theory, the process of learning cannot be dissociated from the membership to a community of practice. Communities are viewed as the “basic building blocks of a social learning system” (Wenger, 2000, p. 229). This theory is relevant to this study in the sense that the creation, sharing and provision of access to OER in Moi University will enable a collaboration mechanism within its constituent campuses and further with other universities in Kenya facilitating the building of a local ‘Community of Practice’ within which intellectual interactions will coordinate all knowledge generated within and among universities for the benefit of the universities and the country at large.

1.4.1 Conceptual Framework

Article 26 of the *United Nations Universal Declaration of Human Rights* states that: “....Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit” (<http://www.un.org/en/documents/udhr/>). This statement, charges every nation with a duty to fulfill this requirement.

Tomasevski’s (2001) 4A framework of the human right *to* and *in* education, stipulate availability, accessibility, acceptability and adaptability as key obligations by any government to its people. The framework is discussed further in chapter two. This framework has been

chosen to guide the researcher's discussion on OER. Fig. 1 below illustrates the researcher's guideline in this study. After seeking the experiences of faculty, the librarian and students on information access, the researcher, using opinions from OER experts, proposes and discusses OER under the 4A framework to be able to achieve the outputs illustrated which in the researcher's view are seen not only to achieve the human right to education but also, to enhance the quality of higher education and to achieve the university's core responsibilities of teaching, research and service to the community.

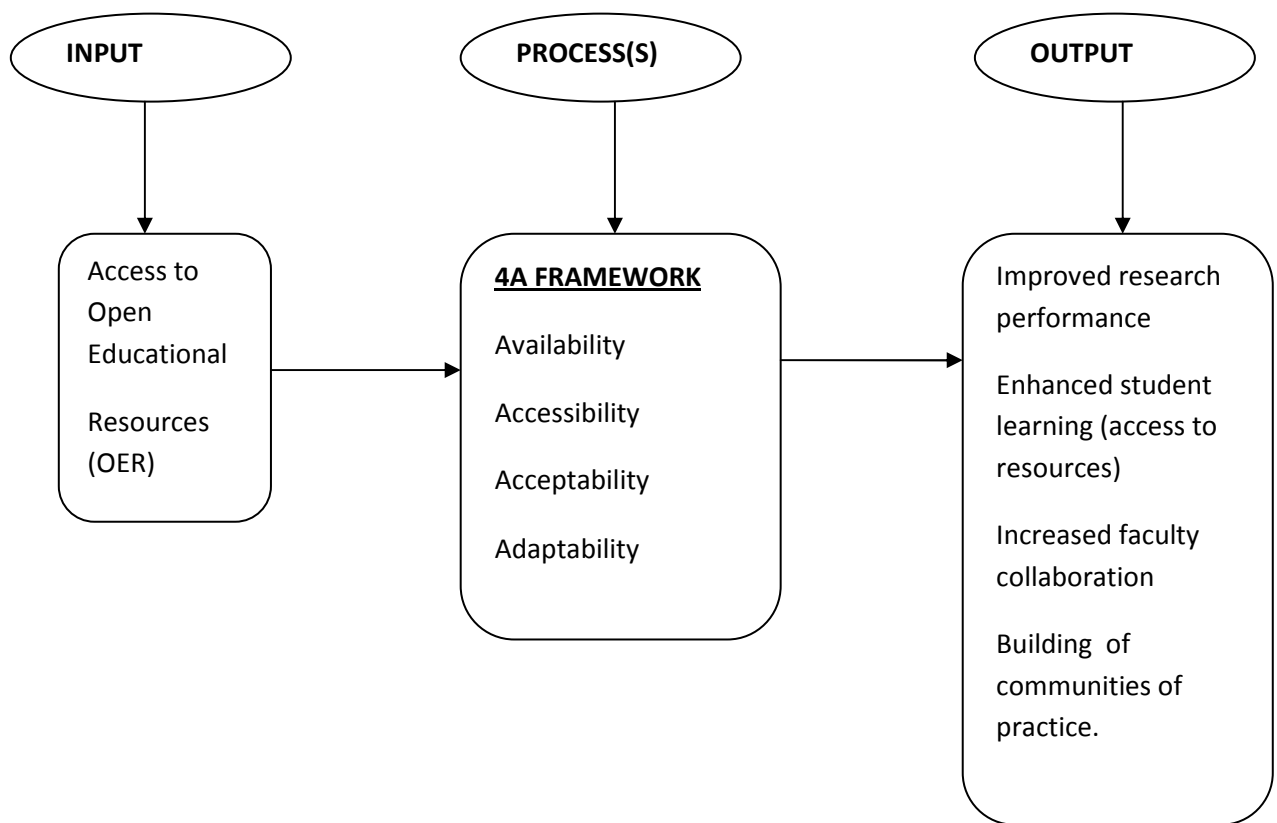


Figure 1: Conceptual Framework Guiding the Study

1.5 Research Aim, Objectives and Questions.

The aim of this research is to explore the potential of OER in enhancing university faculty collaborations and access to information resources for learning, teaching and research at the Moi university- Nairobi campus. The objectives are as follows:

- (a) To find out the experiences of faculty and students on information access for teaching, learning and research at Moi University- Nairobi Campus.
- (b) To explore the potential of OER in enhancing access to teaching, learning and research information resources and their potential to enhance faculty collaborations within Moi University campuses and beyond.

To be able to achieve the above mentioned objectives, the following questions will guide this research work:

- (a) How do faculty and students in Moi University – Nairobi campus access and share teaching, learning and research information resources?
- (b) How can OER be adopted to enhance access to teaching, learning and research information resources at Moi University?
- (c) How can faculty intra university collaboration be enhanced through OER adoption in Moi University?

1.6 Methodology

This study is guided by an interpretivist philosophical stance. It is a single, embedded and qualitative case study that has employed a variety of data collection tools including online questionnaires, interviews, observation and relevant documents. In addition, it has employed multiple sources of evidence to enhance validity of the results. Analysis of the data collected was done using derived themes of Access, OER and Collaboration and their subsequent subthemes.

1.7 Justification for the Research

“It is not enough to show there are gaps in the body of knowledge; they must be *important* gaps” (Varadarajan, as cited in Perry, 1998). This research is important and justifiable on practical grounds. Education is widely accepted as a leading instrument for promoting economic growth. For Africa, where growth is essential if the continent is to climb out of

poverty, education is particularly important (Bloom, Canning and Chan, 2005, p. 1). As stated earlier, an effective quality HE system is vital in facilitating a knowledge economy and global competitiveness. The developing countries in general and Kenya in particular are yet to achieve this. Geith and Vignare (2008, p.1) state that “One of the key concepts in the right to education is access: access to the means to fully develop as human beings as well as access to the means to gain skills, knowledge and credentials”. By finding out the experiences of faculty and students on access to information resources, the research will explore how an OER strategy, if adopted, would improve the access gaps that exist. All this, is with the aim of enhancing the quality of HE.

Moreover, on the basis of the literature reviewed, there is no evidence of studies that have been done on Access and OER in the approach that this study has taken; identifying a single institution and finding out some of its practices that relate to information resources, the characteristics of the students and faculty and their experiences of information access. In addition, none has employed such a methodology as used in this case; involving experts of OER in obtaining their views with regard to this particular case on how access to resources could be enhanced. Most of the related studies are a result of brainstorming actions by OER experts of perceived generalized problems of access to information resources.

1.8 Scope of the Research

This study focuses on access to learning resources and OER. The study highlights the importance of education and particularly higher education in facilitating national and economic development in a global knowledge society. It further points out the importance of access to learning resources in facilitating a quality higher education where teaching, learning and research are carried out. Since it is a case study, experiences of faculty and students of the case being studied will be sought. This has to do with how they access resources, internet and technology available to them to facilitate access, challenges they encounter while accessing information resources and opinions on how access to resources can be facilitated. The study however, does not go to the details of how teaching and learning are carried out. On OER,

details relating to availability, accessibility, acceptability and adaptability, based on Tomasevski's (2001) 4A model of Human Rights to and in education are discussed. Since this is an idea that is not functional at the institution, only views will be sought. Views from faculty, students and a librarian of the case will be sought to ascertain their awareness of OER and their acceptability of such an engagement as a possible way to improve access to learning resources, and also views from an expert community from around the world to ascertain the viability of an OER engagement in such a situation.

1.9 Significance of the Research

This research work is intended to guide the university policy makers as they create or amend policies on information access and other related policies that will enhance access to information resources and that would accommodate adoption of OER at the institution.

It will be relevant to the government of Kenya that has the responsibility of funding the public universities, so that they keep in mind facilitation of learning and research resources in allocating their budgets.

Furthermore, the donor bodies willing to fund OER engagements in the country, and particularly in Moi University, will have an understanding of the situation of satellite campuses and access to learning resources and make their decisions on how and what to give priority to when funding the intended OER projects.

Moreover, the study will act as a sensitization tool of OER to universities. It is possible that students, faculty and administration of the universities are not aware or know little on OER. This study and its findings will help them understand the concept better, since the study is carried out in their contexts.

Lastly but no least, this study will act as a source of reference for future work/research in the areas that it covers.

1.10 Outline of the Thesis

This thesis is divided into five main chapters. The first chapter provides background information of the study which gives context to the work as a whole. Chapter two reviews the literature which informed this study. Overviews are provided for OER, access to knowledge/information and HE. The third chapter outlines the methodology used in this research and provides justification for that choice. Chapter four comprises the data analysis and discussion. This falls into three main thematic categories; OER, Access and Collaboration. The findings are discussed in relation to literature discussed in chapter two.

The final chapter (five) presents conclusions about the findings of this research and recommendations of how OER can be adopted to improve information access at Moi, Nairobi Campus and enhance faculty collaboration amongst Moi University campuses and beyond. It also offers suggestions for areas of further research.

1.11 Conclusion

This first chapter has provided an introduction and background of the subjects being investigated. It provides the motivation and a statement of the problem that the researcher seeks to address. The aims and objectives, research questions and the significance of the study have also been discussed. Furthermore, justification for the study and a conceptual framework that will guide the researcher in the discussion of a proposed engagement of OER has been illustrated. To conclude the chapter, an outline of how the thesis is structured is provided in order to guide the reader through the various parts of the thesis.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

In order to adequately examine the existing literature regarding this work, the researcher has elaborated a multi-pronged search strategy to investigate diverse sources of information: The keywords; Open Educational Resources as a phrase *or* OER, Access to Information *or* Access to Knowledge, Higher Education and the Knowledge Society were the broad phrases used. The researcher further narrowed the search on a geographical perspective by including (in the phrases OER and Higher Education) the terms Africa and Kenya. The rationale for this is straightforward: the focus of this work is on the potential of OER in enhancing access to information resources in a higher education setting with the goal of achieving national development in a knowledge based global society.

In the case of OER, the types of documents retrieved were full-text journal or conference articles published between 2002 and 2010. The year 2002 was used as a limiting date because this was the year the term was coined. In the case of access and higher education, books and full-text journal articles were accessed. No particular limitation was applied for the date of publication as long as it was relevant to the issues being discussed. Nevertheless, current trends in the higher education sector made it mandatory for the author to search for current publications. The online catalogue ESTER (Estonian libraries e-catalogue) was used to locate relevant books. Commercial databases EBSCO, SpringerLink, Emerald, SAGE and JSTOR were used. However, no relevant articles in SAGE, JSTOR and SpringerLink were found.

The same searching criterion was applied to searches in Google Web, Google Scholar and the E-LIS repository. It is worth noting that most OER resources were available and easily accessible as free/open on Google Web. In this case, the author was careful in selecting authoritative and peer reviewed articles on the subject. The author created a Google alert on “Open Educational Resources” to trap any new occurrences in OER. The results of this were

blog posts and links to websites with relevant information on OER. Out of these, the author carefully selected what to use and what to ignore on the basis of their relevance to the study. Relevance was considered in terms of the content of the articles or discussions. For blog discussions, user ratings and comments were added criteria that the researcher used for determining relevance.

A variety of websites have been used. Notably OER Africa for its geographical relevance and in providing peer reviewed articles and African-based OER projects that the author has referenced. The websites of Moi University and its Nairobi satellite campus were also extensively used to obtain relevant information about the case. The Free Online Dictionary was occasionally referenced. Others in the list include the MIT (Massachusetts Institute of Technology) website - MIT being the first publisher of OER, Flora and Hewlett Foundation (A core funding agency of OER), Creative Commons (An organization dealing with licenses mostly used in OER projects), OER Commons, Curriki, Merlot and Connexions – collaborative repositories on OER. Theses and dissertations were also used. Moreover, OER project reports were also referenced to obtain the state of affairs of particular project(s).

2.1.1 Structure of the Discussion

The literature review will begin by introducing the concept of HE; the definition and how the concept is used in this study, and further, its role and mandate. The importance of access to information resources in achieving the mandate for which the HEIs are set up (to teach and conduct research), will be discussed. Following this discussion will be a short history of the establishment of universities in Kenya and the expansion of these institutions which was the trigger for the researcher to carry out this study. The education and training needed in the knowledge society and the emerging trends in the HE sector will be discussed with the concept of open movements opening up the final part of the literature review on OER, discussed using the 4A framework of the human rights to and in education developed by Tomasevski (2001). OER issues that are viewed by the researcher as useful in the goal of achieving this education obligation and in particular, enabling availability, accessibility,

acceptability and adaptability of information resources for learning teaching and research in higher education will be discussed.

2.2 Higher Education

The free online dictionary defines HE as education beyond the secondary level, especially education at the college or university level. The phrase tertiary education is also commonly used to refer to HE. 'Higher Education' is taken to embody all organised leaning and training activities at the tertiary level (Obanya, Shabani and Okebukola, 2002). The Commission for Higher Education in Kenya defines the term as all formal and non-formal education and training offered after the secondary school education.¹ For the purpose of this study, this definition will be used to refer to university education.

2.2.1 Mission and Role of Higher Education

It is a widely accepted notion that higher education institutions in general and universities in particular, exist to nurture the human resources by teaching, to carry out research and to serve the community. Doghaim (1991) states the following "It is needless to say that the role of universities has been internationally accepted as serving three aims: teaching, research and serving the community (society) in the wider sense" (p. 99).

A UNESCO report further notes that "The core missions and values of higher education, in particular the mission to contribute to the sustainable development and improvement of society as a whole, should be preserved, reinforced and further expanded" (UNESCO, 1998, p.3). This will be achieved through providing opportunities for higher learning and for learning throughout life, training students using courses and content that is tailored to meet present and future needs of the society, advance, create and disseminate knowledge through research, preserve, promote and disseminate national, regional, international and historic

¹ http://www.che.or.ke/che//index.php?option=com_content&task=view&id=80&Itemid=105

cultures of the community, contribute to the development and improvement of education at all level and help protect and enhance society values (p. 3).

According to Cabal (1993), teaching and research are the intellectual functions of the university. Service on the other hand is viewed as the social function or role of the university that links educational and intellectual role of the university on the one hand and societal development on the other. The Kenyan Ministry of Education (1994) has stipulated the aims of universities in Kenya as follows:

1. To develop, advance, preserve and disseminate knowledge and to stimulate intellectual life.
2. To train and prepare high level manpower needed for development.
3. To promote cultural development and the highest ideas and values of the society.
4. To provide through research and consulting knowledge, skills and services to the community.
5. To assist the government in achieving its planned development (p.67).

2.2.2 Higher Education in Kenya.

This section will give a brief history of the early formation of universities in Kenya and further how the expansion of university education in Kenya has emerged.

2.2.2.1 History

Higher education in Kenya can be traced back in 1922 when the Makerere College in Uganda was established and expanded to serve the three East African countries – Kenya, Uganda and Tanganyika. In 1956, the Royal Technical College of Nairobi was established. It became a university college in 1963, as one of the three constituent colleges, together with Dar Es Salaam and Kampala (Makerere), of the newly established University of East Africa. The university colleges then became autonomous after the University of East Africa became dissolved in 1970. The University of Nairobi, as it later came to be referred, was the first university to be established. (Mutula, 2002; Chacha, 2004).

2.2.2.2 Expansion of University Education

There was rapid expansion of the University of Nairobi since the government placed emphasis on the role of education in fostering economic and social development. Moi University was the second to be established in Kenya in 1984. Kenyatta University, which had operated as a constituent college of the University of Nairobi became a full - fledged university in 1985. The fourth public university in Kenya – Egerton University, was formed in 1988 from a previous agricultural college. Enrollment to the universities was on the increase and intakes at the universities increased as well (Chacha, 2004). Currently, there are seven public universities established by Act of Parliament and largely supported from public funds and eleven chartered private universities that have been fully accredited by the Commission for Higher Education, and eight others operating with Letters of Interim Authority (LIA) (<http://www.che.or.ke/status2.html>).

The continuous increasing demand for university education in Kenya has forced universities to be more innovative to meet this demand. In response to this, public universities established the privately sponsored program/modules that offer lectures to students who are not government sponsored in the evenings and weekends, and sometimes on a regular schedule together with the regular government sponsored students. Mwiria (2007, p. 2) states the following “.....expansion has also been fuelled by the opening of the public universities to privately sponsored students under the so-called ‘parallel’ degree programme. Since this expansion was not accompanied by a commensurate increase in government funding, the result has been a steady decline in quality and increasingly serious questions about relevance. The current trend is to establish satellite campuses in various towns across the country to be closer to the target population. “The public universities have worked to make university education more accessible by locating campuses near their target populations” (Mwiria and Ng’the, 2007, p. 30).

2.2.3 Higher Education and Training in the Global Knowledge Society

To undermine the power of education in economic, social and cultural developments in the world today would be ignorance. The society has increasingly become knowledge based and the need for quality higher education and research is on the rise. A UNESCO report on the *World Declaration on Higher Education for the Twenty First Century: Vision and Action* states:

Higher education has given ample proof of its viability over the centuries and of its ability to change and to induce change and progress in society. Owing to the scope and pace of change, society has become increasingly knowledge-based so that higher learning and research now act as essential components of cultural, socio-economic and environmentally sustainable development of individuals, communities and nations (United Nations Educational, Scientific and Cultural Organization [UNESCO], 1998, p. 3).

On the same note, in his article *The Age of Social Transformation*, Peter Drucker (1994) gives a description of the education and training that will be necessary in the knowledge society:

Education will become the center of the knowledge society, and the school its key institution. What knowledge must everybody have? What is "quality" in learning and teaching? These will of necessity become central concerns of the knowledge society, and central political issues... In the knowledge society, clearly, more and more knowledge, and especially advanced knowledge, will be acquired well past the age of formal schooling and increasingly, perhaps, through educational processes that do not center on the traditional school (p. 60).

The development in the HE sector today can be viewed as experiencing Druckers's envisioned description of the knowledge society of '...acquiring knowledge well past the age of formal schooling' through the continuing proliferation of lifelong learning and '...educational processes that do not centre on the traditional school' through distance/online education and virtual learning. In addition, in his paper on *Virtual Universities and Learning Environments*, Ted Tschang highlights highly skilled, flexible labour forces, open learning, lifelong learning and learning for many purposes and to update skills as required educational needs of the knowledge-based economy (Tschang, 2001).

Developing nations and particularly Africa are yet to fully achieve these knowledge economy requirements. As a World Bank report indicates:

Developing countries and countries with transition economies risk being further marginalized in a competitive global knowledge economy because their education and training systems are not equipping learners with the skills they need. To respond to the problem, policymakers need to make fundamental changes. They need to replace the information-based, teacher-directed rote learning provided within a formal education system governed by directives with a new type of learning that emphasizes creating, applying, analyzing, and synthesizing knowledge and engaging in collaborative learning throughout the lifespan (World Bank, 2003, p. xvii).

Drahos (2005) states that: “for developing countries, the coming century of knowledge-based growth raises two basic development priorities. The first is that these countries must give more urgent attention to encouraging investment in human capital and this essentially translates into investment in health and education” (p.16).

Access to learning materials is one aspect of access to knowledge ((Rens, Prabhala and Kawooya, 2006). Without access to relevant information resources, any university may not satisfactorily fulfill the mandate for which it was created; to teach, carry out research and serve the community. It is in this light that the next session is discussed.

2.2.4 Access to Learning Resources

This section illustrates the importance of learning resources especially in a HE setting. Barriers that hinder access to learning resources are also illustrated as discussed by other authors.

2.2.4.1 Introduction

The Free Online Dictionary defines the term “access” as the ability or right to approach, enter, exit, communicate with, or make use of something. Access involves a subject and an object: A person who accesses a resource (Habler, 2009).

“The world is increasingly hungry for information. The demand for better access to information is even more marked in higher education than in society as a whole and, as research becomes more specialized and at the same time more interdisciplinary, the range of information sought by all engaged in higher education is expanding” (Smethurst, 1999, p. 1). Furthermore, “there can be little doubt that education is a cornerstone of social and economic development, or that access to learning materials is a crucial factor in the success of any educational system” (Rens, Prabhala and Kawooya, 2006, p. 1). To be able to effectively carry out research, both students and faculty in the HE sector should be accessible to relevant information resources as “it is widely acknowledged that the production of new knowledge requires access to the existing knowledge base” (Jonker, n.d, p.127).

2.2.4.2 Barriers to Information Access

Nevertheless, many universities in the developing world and specifically most in Africa are yet to meet this need for access. Students, teachers and researchers need access to diverse information resources for learning, teaching and research, which are not always available to meet their needs. There are a variety of barriers to information access some of which include: physical, legal, economic, technological, and literacy barriers. In a SAIDE newsletter article *A Theory of Change for Open Educational Resources (2009)*, Catherine Ngugi and Neil Butcher provide their reflections of adoption of OER in African HE. They have identified a set of specific problems facing the higher education sector in Africa, some of which relate to information access as follows:

1. In many higher education programmes on the continent, the amount of money available to run those programmes is inadequate to meet the educational needs of enrolled students, as well as to cover the costs of faculty time required both to design and run quality learning experiences.
2. There are too few learning resources for learners and lecturers in African universities, and many of those available are too expensive to be purchased by universities or students.

3. Much existing content available to and within African universities is based on weak and largely outmoded educational design principles. Although a high priority, updating such content is very difficult to do in contexts where faculty members are already overtaxed and often need extensive support and capacity development to be able to design effective educational materials.
4. Although improvements will occur over time, there is limited ICT infrastructure to gain access to up-to-date information available on the Internet and to participate in inter-institutional, geographically dispersed collaborative activities (SAIDE, 2009, para. 4)

In further support of this, in their document *Intellectual Property, Education and Access to Knowledge in Southern Africa*, Rens, Prabhala and Kawooya (2006) indicate that, many of the problems regarding access to learning materials in the area are connected to excessive pricing, unavailability, unsuitability, government resource constraints and intellectual property legislations. A case study conducted by Kawooya (2007) to explore copyright and access to e-resources in Uganda's selected education and research institutions indicates that institutions lacked policies on copyright. An initial attempt at policy by a participating institution pointed to a utilitarian approach to copyright, a policy direction likely to hinder than promote access to knowledge and stifle innovation in the long run (p.1). It is the responsibility of every university to ensure appropriate measures to facilitate maximum access to relevant resources as required by its faculty, students and stakeholders.

2.2.5 Emerging Trends in Higher Education

Due to the increasing competitiveness and globalization, education and learning needs are changing. Learning is shifting to more action oriented, distributed, mass customized and multi-mode process (Tschang 2001). Educational institutions and systems have gradually been transformed by technologies to be able to meet these new needs of the knowledge based economy. The traditional campus-based university has existed for long but has seen major developments due to technological advances. A second and even third type of university environments have developed enabled by the same technology and the power of the Internet. These are the open learning environments - that serve off-campus or part time students and the virtual university environments - that use internet technology for its main delivery mode

(Tschang, 2001). This idea of institutions being transformed by technologies is further supported by Tuomi (2006) in the statement:

Learning, itself, will become increasingly networked. The traditional educational models where learning was seen as “knowledge transfer” and “internalization” of pre-existing knowledge are now increasingly being replaced by active, social, and problem-oriented models. Learners are now asked to become creative and innovative. Classrooms become sites where knowledge is constructed by the students, and where teachers will organize and facilitate learning. The “sites” of learning, themselves, will become distributed, linking homes, workplaces, and educational institutions in novel ways across space and time. Information and communication technologies both drive this change and are being adapted for the new learning models and needs (p.6).

Even more recent development in the education sector is the idea of openness. Open movements are changing the way information and knowledge is being shared. From open software, open content, publishing and courseware to open licenses. “The present decade can be called the o-decade (open source, open systems, open standards, open archives, open everything) just as the 1990s were called the e-decade” (Materu, cited in OECD, 2007, p. 32). The idea of openness has to do with free availability over the Internet and as few as possible restrictions in using the information resource (OECD, 2007). “Openness is a fundamental value underlying significant changes in society and is a prerequisite to changes institutions of higher education need to make in order to remain relevant to the society in which they exist” (Hilton and Wiley, 2009, p. 1). These two authors have provided a list of six ways that technological innovation has changed the context of higher education in its complex super system- human society. From analog to digital, from generic to personal, from consumers to creators, from tethered to mobile and from close to open (pp. 1-3). It will be interesting to see how these changes will impact on education and learning in the coming decades.

The Committee for Economic Development supports their discussion of openness in HE as follows:

“open” has become an almost common place adjective: open source for software, open standards for information technology, open systems and open architecture as elements of design, open access for cable and telecommunications systems, open spectrum for radio frequency management, even open innovation. This move toward increased openness forms a backdrop for a discussion of openness and higher education today (CED, 2009, p. 26).

It is in the light of these open movements that OER is discussed in this study, since the researcher sees great potential of OER in HE, and particularly in this study's case situation described in the previous chapter.

The Cape Town Open Education Declaration (2008) informs of an emerging open education movement that:

Combines the established tradition of sharing good ideas with fellow educators and the collaborative, interactive culture of the Internet. It is built on the belief that everyone should have the freedom to use, customize, improve and redistribute educational resources without constraint. Educators, learners and others who share this belief are gathering together as part of a worldwide effort to make education both more accessible and more effective (para. 2).

The declaration further states that “the expanding global collection of Open Educational Resources has created fertile ground for this effort” (<http://www.capetowndeclaration.org/read-the-declaration>)

2.3 Open Educational Resources.

This section gives a background of OER and provides several definitions of the term as provided by different authors. The section further explored various models of OER and how they have been categorized by different authors. In addition, the section outlines some major OER research carried out to date, and discusses OER issues of growth, sustainability, openness, cost reduction, quality control, adaptability and licensing under the 4A framework adopted in the study.

2.3.1 Background

The birth of the Internet brought about new possibilities in how activities were performed in almost all spheres of life. The academic sphere is among the beneficiaries. The initiation of online learning and the Virtual University appeared to hold great possibilities with the advent of the web and Internet. In 1999, Academia Europa held a meeting on the topic “Virtual University? Educational Environments of the Future”. The meeting concluded:

Emerging technologies are transforming our concept of time and space. The Internet is only the forerunner of what is to come. Cyberspace will eventually determine how we learn, socialize and work. In the near future, commercial educational networks will offer a wide variety of global products. Therefore, the university must rethink its organization and the adequacy of its educational methods (van der Molen, 2001, p. vii).

This rang a bell to many higher education institutions – to think of ways of using the emergent technologies for educational purposes and offering online learning. With this aim, some institutions tried to offer online learning programs while others tried joint ventures some of which failed. However, MIT took a different approach – a web-based publishing venture rather than a distance learning programme. In 1999, in a meeting convened “to consider how MIT should position itself in the use of educational technology and distance education” recommended that all course materials be given away on the web (Vest, 2006, p. 18). This was to be the beginning of a new movement that has since then grown popular.

2.3.2 Definition of OER

It is in the year 2002, with the OpenCourseWare initiative of MIT on the agenda, that the term Open Educational Resources was first adopted at UNESCO's Forum on *The Impact of Open Courseware for Higher Education in Developing Countries*, funded by the William and Flora Hewlett Foundation. According to this forum, OER is to refer to digitized materials offered freely and openly for educators, students and self learners to use and reuse for teaching, learning and research (D'Antoni, 2006). Since then, the term has been redefined to include also the concepts of tools and implementation resources (See Chapter 1 background information). The director of the ccLearn initiative of the Creative Commons Ahrash Bisell describes the concept as follows:

Open Educational Resources (OER) represents the efforts of a worldwide community, empowered by the Internet, to help equalize the access to knowledge and educational opportunities throughout the world. They are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual-property license that permits their free use or customization by others. It is the granting of freedoms to share, reprint, translate, combine, or adapt that makes them educationally different from those that can merely be read online for free (Bissell, 2007, p. 1).

Moreover, at OER Africa, the term is defined primarily as educational resources that can be used without the need to pay royalties or license fees (Ngugi, 2009). To sum it up, Smith and Casserly (2006) summarize the movement as follows; “At the heart of the movement towards Open Educational Resources is the simple and powerful idea that the world’s knowledge is a public good and that technology in general and the Worldwide Web in particular provide an opportunity for everyone to share, use, and reuse it” (p. 8).

2.3.3 Production Models of OER

Depending on the creation/production, sharing and management of content, OER initiatives can be classified into a variety of models or a combination of them. Mulder (2009) of the Royal Holloway University of London has distinguished three types of OER projects or approaches. Content-centred, learner- centred and network driven projects/approaches.

In content-centred types of OER projects, information flow is one directional. There is no direct feedback from the users that is inbuilt in the system. Examples of such content are syllabi, assignments, examinations, reading lists, lecture notes and samples of student’s work. He asserts that such projects are typically initiated by traditional universities (Mulder, 2008, p. 28)

Learner centred projects on the other hand are aimed at the learning experiences of its users, the target audience being primarily lifelong learners. “The learning experience of learner - centred models could be enhanced by artificial and real teachers interacting online with students, thus creating a more multi-directional type of OER” (Mulder, 2008, p. 28).

Network driven projects are characterized by their collaborative nature in content sharing. In these types of projects, communities of users take an active part in creation and/or adaptation of content. “Such projects have a strong social networking component, are driven by web 2.0 technologies and often use a constructivist pedagogical approach” (Mulder, 2009, p. 3)

According to Mulder, content and learner based OER projects are in general capital intensive and are managed by one institution. Most of their content is protected by licenses which do not

allow for derivative works. However, network projects are assumed to be less capital intensive and to contain content that allow for derivative works. They are aimed, not only for OER content creation, but also for social networking between peers to enhance collaboration (Keats, 2003). Mulder (2009) further observes that the difference between OER projects in the west and sub Saharan Africa is that most project initiatives in the west are learner and content centred and a few are network centred, while those in Sub Saharan Africa are network driven.

A research conducted by the Organisation for Economic Co-operation and Development (OECD) on OER financial sustainability mention two production models of OER: producer-consumer model and co-producer model. According to Geith and Vignare (2008):

A producer-consumer model is typically more centralized, is usually a form of institutional publishing, and has higher costs associated with the publishing staffing and workflow for providing quality review, production consistency and copyright clearance of third-party resource. A co-producer model is typically decentralized and based on a community of volunteers that work together to create resources for the community” (p. 11).

MIT OpenCourseWare Initiative is a good example of producer-consumer model while the WikiEducator of the commonwealth of learning is an example of a co-producer model (Geith and Vignare, 2008).

Wiley (2007) on the other hand has identified a different category of OER projects in HE. The MIT model, the USU model, and the Rice model. He states that the three models exhibit an instructive diversity in their size, organization, and provision of IP-clearance, content creation, and other services.

The MIT model is highly centralized and tightly coordinated in terms of organization and the provision of services, relying almost exclusively on paid employees. The USU model is a hybrid of centralization and decentralization of both organization and services, and work is distributed across some employed staff and a number of volunteers. The Rice model is almost fully decentralized and volunteers provide almost all services (p. 7).

2.3.4 Research on OER

OER is a broad topic and it would be difficult if not impossible to cover all writing and research work that has been carried out since the inception of the term. However, it is worth

citing some major academic works and research in the field that are related and relevant to this study.

Early writings on OER were dedicated to making known the concept underlying the movement. Johnstone and Poulin (2002) give an overview of what OER are about and they use the MIT initiative to illustrate the background motives behind starting the initiative and how the institution dealt with copyright and technology issues while initiating the project. Keats (2003) describes a process model for collaboratively developing content which she believes could be a way to unlock the potential for African universities. Other major writings have focused on incentives and disincentives of creating/sharing resources either at individual or institution levels (Siemens, 2003; OECD, 2007; McAndrew, 2006; Shelton and Arendt, 2009).

Another category of research work is based on evaluations of existing projects such as MIT's annual comprehensive evaluation reports on the MIT OCW website (Carson, 2004, 2005, 2006). Others include proceedings or presentations held at conferences, such as the Open Education Conference at Utah State University from 2005 and 2006 (Utah State University, 2005, 2006), D'Antoni's account of the OER movement presented at the ICDE SCOP meeting in Lillehammer, Norway in 2006 (D'Antoni, 2006) and a report from the Flora and Hewlett Foundation based on a review of the impacts of its investments (Atkins, Brown and Hammond, 2007).

A well known publication by OECD – Centre for Educational Research and Innovation (CERI) (2007) entitled *Giving Knowledge for Free* is a result of an analytical and empirical research work involving expert discussion reports and empirical data from selected higher education institution cases involved with production of OER, on issues regarding incentives and barriers to using and producing OER, accessibility, sustainability, cost benefit models and intellectual property rights.

Another famous report is the OLCOS (Open eLearning content Observatory Services) roadmap 2012, edited by Geser and published in 2007. The review is an overview of current

and likely future developments in OER and recommendations on how various challenges in OER could be addressed. In particular, OLCOS warns that delivering OER to the still dominant model of teacher-centred knowledge transfer will have little effect on equipping teachers, students and workers with the competences, knowledge and skills to participate successfully in the knowledge economy and society. The report emphasizes on the need to foster open practices of teaching and learning that are informed by a competency-based educational framework (p. 12).

There have been a number of reports that have been outputs of online discussion forums or expert discussion forums. One of these forums is by a UNESCO international community of interest who held discussions on priority issues for advancing/promoting the OER movement. They published a document in 2008 that was edited by D'Antoni, entitled *OER the Way Forward: Deliberations of an International Community of Interest*. Priority issues identified include: awareness raising, capacity development, sustainability, quality assurance, accessibility, policies, standards, among others. These issues were categorized differently for the developed and developing nations and further according to different regions. Deliberations on the way forward with regard to these issues were also discussed.

A second such forum is also by the UNESCO international community on OER that held community discussions on the topic of *Access to Open Educational Resources* and published a report in 2009 citing various access barriers such as social, policy, cultural, legal and technology based issues. The report provides some solutions like insisting on good designs from the start, publishing flexible formats, good description of material (using metadata standards), and some practical solutions to overcome bandwidth problems such as having mirror sites. Some of the proposals put forward in this report include training issues to address the lack of awareness, OER exchange infrastructure and documentation to support the setting up of OER centres.

A third forum of discussion also by UNESCO is the result of an online discussion following an invitation by the International Institute for Education and Planning (IIEP) on OER and its potential. Discussions involving institutional examples regarding incentives for participation

and challenges were held. The forum discussed on issues and lessons learnt from the cases and they shared experiences and deliberated on the ways to move forward. The resultant work was published in 2009 as a book *Conversations in Cyberspace* (also available online) and edited by Susan D'Antoni and Catherine Savage.

Not much has been researched on OER in Africa but there are several works that have indicated the potential OER holds for Africa. Bateman (2007) argues in a working paper that there is a danger that African universities and other tertiary institutions may tend to participate as unequal participants in the OER movement. He cites the African Virtual University's Teacher Education in Sub-Saharan Africa (TESSA) OER-project as an example and argues that African HEI's should become involved in the adaptation and creation of OER, as they know best how local pedagogical, epistemological, ideological, cultural, social as well as technology related challenges should be dealt with. In their report to the William and Flora Hewlett Foundation, Atkins, Brown and Hammond (2007) have included some views regarding the application of OER for development purposes. It is also worth noting that the report by UNESCO on *Access to Open Educational Resources* was discussed with particular emphasis on access issues specific to less resourced environments. OER Africa has also published papers on challenges facing African HEI's and on the potential of OER in Africa.

A research conducted by Mulder (2008) on *Knowledge Dissemination in Africa* was based on expert views from within and without the African continent on how OER might or might not be used to overcome the educational, socio economic and socio-political factors inhibiting the dissemination of knowledge in Africa. He analyses the expert's views and concludes by highlighting some global challenges for the implementation of OER with relation to sub Saharan Africa.

In his paper, *OER at the University of the Western Cape*, Philipp Schmidt examines how a previously disadvantaged University from South Africa can become a world-leader in opening access to educational resources. It provides the project overview, outcomes and the way forward. The university is an OpenCourseWare pioneer in Africa (Schmidt, n.d).

Most papers written on OER in relation to Africa have identified the problems facing African HEIs and the potential OER holds in improving the situations. Not all institutions face the same problems and even if they did, the degree of the problems and their institutions circumstances and cultures may vary. By examining a particular institution to explore faculty and students experiences in accessing information resources and to understand what circumstances the institution is operating, helps to better understand how OER could be useful, if at all it is, and how it could be adopted to benefit the institution. This study adds on to what has been written before on the potential of OER in enhancing access to information resources by relying on empirical data not just on general ideas which may not necessarily be applicable specifically for the institution under study. This work therefore, fills a gap in OER research in a Kenyan context and is hoped to be a starting point for other such research.

2.3.5 OER and the 4A Framework of the Human Right to and in Education.

In their paper *Access to Education with Online Learning and Open Educational Resources: can they close the gap?* Geith and Viganre (2008) have used the 4A framework to illustrate how availability, accessibility, acceptability and adaptability of OER can help close this gap in education. Similarly, a discussion on OER in this study will borrow from their works since one of the ways to meet this human right to education is through availing, making accessible, acceptable and adaptable information resources for the purposes of teaching, learning and research. The table 1 below illustrates the concept of the right, dimensions and examples of each dimension.

Table 1: The 4-A Conceptual Framework. (Adapted from Tomasevski 2001, p. 12
It indicates the Rights “To” and “In” Education)

RIGHT	DIMENSION	EXAMPLE (S)
RIGHT TO EDUCATION	Availability	-Fiscal allocations for schools and teachers
	Accessibility	-Elimination of legal and financial barriers, financial obstacles and discriminatory denials of access. -Elimination of obstacles to schooling (distance, schedule)
RIGHTS IN EDUCATION	Acceptability	- Parental and adult choice - Minimum standards (quality, health, environmental) - Language of instruction - Freedom from censorship - Recognition of learners as subjects of right.
	Adaptability	-Minorities, disabled, travelers, migrants, workers and indigenous people.

2.3.4.1 Availability: OER Growth and Sustainability.

Tomasevski’s first “A” considers fiscal allocations for teachers and schools. Availability of OER is not the same as availability of schools and teachers. Nevertheless, OER is enabling increased availability of both by helping to provide resources for teacher training and curriculum for telecenters, local study centers and schools (Geith and Vignare, 2008). These two authors quote Open Learning Exchange that is providing primary and secondary curriculum for the world and the African Virtual University (AVU) that is creating and adopting OER to serve its members of Francophone and Anglophone West Africa and Arab North African countries as examples. Another good example of a teacher development OER programme is the Teacher Education in Sub Saharan Africa (TESSA) consortium formed between 13 African institutions and 5 international organizations delivering teacher education across 9 countries. It has been devoted to produce OER to guide teachers’ classroom practices in school – based teacher education. (Thakrar, Zinn and Wolfenden, 2009).

The growth of OER has been enormous. The first survey conducted on available OER indicated 2000 freely available courses available on the net (Geith and Vignare, 2008). The following year, an Organization for Economic Development (OECD) reported approximately 3000 courses online from over 300 universities (OECD, 2007). A good example of this growth can be illustrated by MIT. Its initial publication was 50 courses in the year 2002. Today, it has over 1900 courses published with 225 mirror sites around the world. The growth of OER has also been experienced with content being translated in other languages, increasing institutional portals, subject collections and community developed content. The ccLearn search engine project with Google has collected over 25-thousand URL's of open educational resource sites around the world. Some of the OER repositories today include Merlot with over 22,000 materials (<http://www.merlot.org/merlot/index.htm>); Curriki with over 35,000 resources (<http://www.curriki.org/xwiki/bin/view/Main/WebHome>); OER Commons with over 30,000 resources (<http://www.oercommons.org/>); and Connexions with over 16,000 modules (<http://cnx.org/content/>)

Sustainability of OER remains a big issue to date. Since most of OER is produced/created and funded by volunteers, more research on the business models that will enable sustainable OER needs to be conducted. According to Downes (2007), sustainable means “.....‘Has long-term viability for all concerned’- meets provider objectives for scale, quality, production cost, margins and return on investment” (p. 33). He further illustrates nine models of financial sustainability of OER as follows:

1. Endowment Model - where the project obtains base funding and is sustained from interests earned on that fund.
2. Membership Model - where a coalition of interested parties are invited and contribute either an initial amount or annual subscriptions which generate operating revenues for the OER services.
3. Donations Model - where a project requests donation and depending on the funding body's assessment of the worthiness of the project to the community, grants the donation.
4. Conversion Model - where “...you give something away for free and then convert the consumer of the freebie to a paying customer” (Sterne and Herring, as cited in Downes

2007). They argue that this model is needed since there is a natural limit to the amount of resources the donation model can bring to an open source project.

5. Contributor – pay model where contributors pay for the cost of maintaining the contribution and the provider thereafter makes the contribution available for free.
6. Sponsorship Model - where a sponsoring body partners mostly with an educational institution to support OER projects.
7. Institutional Model - where an institution assumes the responsibility itself for an OER initiative
8. Government Model - where direct funding for OER projects comes from government agencies including the United Nations.
9. Partnerships and Exchanges – in this supposed model, Downes indicate that, “though perhaps not thought of as a funding or financing model, partnerships and exchanges nonetheless play an important role, or potential role, in the development of OER networks. Partnerships depend not so much on exchanges of funding as on exchanges of resources, where the output of the exchange is an OER” (p. 35).

Another broad categorization of the funding models is illustrated by Geith and Vignare (2007) in what they have termed as a “review of the various funding models by international research”. These are:

1. Cost/benefit Models – these are based on institutional self funding in order to receive other benefits such as enhancing student’s experiences with access to resources and brand building benefits of publishing OER.
2. Third – party Models – funding may come from many sources; governments, voluntary donations and membership fees. Usually, this model is often used to start up a new OER project.
3. Value- added Models – they provide value added services to specific user segments. For instance, members contribute to initial development and production of content/courses. They later access them free but non members are charged a service fee (p. 12).

2.3.4.2 Accessibility: Cost Reduction and Openness of OER

Accessibility is Tomasevski’s second “A” in his Human Right to Education framework. It considers elimination of barriers and obstacles to education. How can OER enable cost

effective resource? A key benefit to OER adoption relates to cost reduction. A Committee for Educational Development report state that:

The posting of course materials on the Internet—particularly those validated by the academic reputations of institutions such as MIT—allow colleges and universities that cannot economically offer a particular course to do so, extending their reach and allowing them, to provide niche educational services to small groups that they could not efficiently serve otherwise (CED, 2009, p. 19).

Beyond the free materials on the Web, Connexions' university press initiative is making printed versions of OER available at very low prices compared to what you can purchase the same from a commercial publisher (CED, 2009).

Many OER initiatives and repositories are open for people and self learners to use and that, makes movement closer to achieving the goal for the human right to education. MIT reports that most of the users of the OER project are self learners (43%). Students account for (42%), educators (9%) and others (6%). The statistics further cite approximately a million visits every month from across the globe (<http://ocw.mit.edu/OcwWeb/web/about/stats/index.htm>).

2.3.4.3 Acceptability: Languages and Quality Control of OER

Acceptability is regarded by Tomasevski as a right in education. In relation to OER, acceptability can be viewed in terms of quality brand that has published the material and in terms of language. Quality in OER is viewed by a UNESCO report to result from quality OER development processes (D'Antoni and Savage, 2009). Three of such processes have been described by Yuan, MacNeil and Kraan (2008) as follows:

1. Institution-based approach that involves the use of brand or reputation of the institution to persuade the user that the materials on the website are of good quality, such as the OCW initiatives and UK Open University's OpenLearn initiative. Institutions most probably use internal quality checks before they release the courses.
2. Peer review approach which is one of the most used quality assurance processes in academia. As well as being well-known and well-used in Open source software projects (to review the code delivered by community members) and Open access journals (to decide which articles should be published), it could also be used for OER

to guarantee the quality of a repository's resources. It is necessary to make review decisions credible, and peer review according to agreed criteria is well suited to that purpose.

3. Open Users Review Approach which is a kind of low-level or bottom-up approach, letting individual users decide on whatever grounds they like whether a learning resource is of high quality, useful or good in any other respect. This can be done by having users rate or comment on the resource or describe how they have used it, or by showing the number of downloads for each resource on the website, such as Rice University's Connexions project (p. 18).

D'Antoni and Savage (2009) further note that quality is relative since quality standards for one situation may not be applicable for another. "Measuring quality, however, is far from straightforward; 'high quality' materials in one context may not be considered 'high quality' in another" (p. 67) and hence, relevance should be vital in determining quality of OER resources. In this regard, the report suggested a need for consistency in OER descriptions and metadata formulation to enable the user understand the original context of creation and use of a resource. From this point, the user can therefore select and determine the most relevant resource for their situation (p. 74).

Some repositories such as the Multimedia Educational Resource for Online Learning and Teaching (MERLOT) use a peer reviewed model before publishing resources while Connexions of Rice University uses post publishing peer review in the form of special selections by scholarly associations (Geith and Vignare, 2008). In addition, in a UNESCO report, a representative of Connexions noted that "we are developing a system of lenses to enable communities to develop their own customized peer review systems" on the discussions of the challenge of quality assessment (D'Antonini and Savage, 2009, p. 42).

Collaborative repositories like OER Commons enable users to create reviews, star rate resources and create public tags. From these, users can then determine the resource fitness with regard to their needs.

Acceptability of language is another right in education. Most OER resources are in the English language owing to the fact that the first people to create and publish OER were English

speaking countries. Nevertheless, as the movement gains popularity, resources have been translated and others are being born in different languages such as Spanish, Korean, Italian and French. The MIT website on statistics indicates that out of the one million visits per month worldwide, translations receive 500 000 or more. The Open CourseWare Consortium has of date member institutions from 36 countries who are publishing a minimum of ten (10) courses in English and/or other languages (Geith and Vignare, 2008).

2.3.4.4 Adaptability: Reuse, Remix and Redistribution of OER.

A great potential in OER lies in the ability to reuse, remix and redistribute resources depending on the flexibility of the licenses used. The most popular open license used by OER initiatives is the Creative Commons and will be discussed further in the next session. David Wiley (2007) has identified six types of adaptations that may require to be done to resources in order to ensure their reuse:

1. Technical adaptation relating to compatibility with local environments.
2. Linguistic adaptability relating to local language and/or reading levels of users.
3. Cultural adaptations relating to cultural expectations of the community being served.
4. Pedagogical adaptations relating to teaching and learning structures which it will be used.
5. Annotation of a resource.
6. Access to “Source code” relating to the ability to edit an original file in order to facilitate reuse and sustainability (pp. 13-14).

Costs and time are usually incurred when making local adaptations of content. More easily adaptable OER can be achieved through co-production models. For instance, WikiEducator and Wikiversity provide an authoring and sharing platform for modifying and mixing resources.

2.3.5 Licensing of OER’s

One of the barriers to accessing information resources relates to intellectual property. According to the Free Online Dictionary, Copyright is the legal right granted to an author,


composer, playwright, publisher, or distributor to exclusive publication, production, sale, or distribution of a literary, musical, dramatic, or artistic work. It is granted for a specified number of years. In Britain for instance, it is usually seventy years after the death of the author of the work, after which it enters the public domain. (http://www.copyrightservice.co.uk/copyright/p01_uk_copyright_law)


The Internet, however, is essentially a technology for copying and distribution, and it is designed in such a way that reproduction of works, once made available, is difficult if not impossible to control. Those who want to freely create, distribute and develop using others' material—and those who want to make original material freely available themselves—need a way of guaranteeing these freedoms (Friesen, 2010, p. 2)


Copyright is practically a significant barrier to OER development since permission has to be sought from the relevant intellectual property owners for the material to be freely available. “The cost and effort required to get such permission, to ‘clear the rights’, have bogged many OER initiatives. Clearing the necessary rights from rights holders constitutes a significant cost in OER” (CED, 2009, p.27). Nevertheless, if more material is ‘born open’, less or no costs regarding copyright issues will be incurred.


The definition of OER has in it the concept of implementation resources – Intellectual property licenses to promote open publishing of materials, design- principles, and localization of content. Most of the OER works are licensed under the creative commons licenses. Creative commons refers to a not for profit organizations based in the USA devoted to expanding the range of creative works available for others to build upon legally and to share. These licenses allow the creators to communicate which rights they reserve and which they waive for the benefit of recipients or other authors (http://en.wikipedia.org/wiki/Creative_commons)

There are four specific licenses as indicated below:


Attribution (by)  – Allows others copy, distribute and use derivative works based upon it but only if they attribute it the way you the creator requests it.


Share Alike (sa)  – Allows others to distribute derivative works but only if they will use a license identical to yours.


No Derivative Works (nd)  – Allows others to copy and distribute only verbatim copies of your work and not derivative works based upon it.


Non Commercial (nc)  – Allows others to copy, distribute and create derivative works on it but for non commercial use only.


The four are combined to form a set of six licenses each with a shorthand label. All licenses require attribution – that the author be given credit appropriately (Friesen, 2010). The set of licenses are as follows (<http://creativecommons.org/about/licenses/>);

Attribution (cc by)  - This is the most accomodative creative commons license. It allows others to copy, remix, distribute and use the work – even commercially, provided the right attributions are given – according to the way the owner of the work requires it.

Attribution Share Alike (cc by-sa)  - This license allows you to copy, remix and build upon the work even for commercial reasons provided you attribute and use an identical license.

AttributionNo Derivatives (cc by-nd)  - This license allows for downloading and redistribution, even for commercial purposes provided it is passed along unchanged and in whole and with credit to the you.

Attribution Non-Commercial (cc by-nc)  - This license allows for remix, copy and building upon the work but for non commercial purposes. The derivative works must attribute you but must not be licensed with the same terms.

Attribution Non-Commercial Share Alike (cc by-nc-sa)  - This licence allows others to copy, mix, redistribute and build upon your work for non commercial purposes.

Attribution must be given to you and any new works must be licenced under the same terms as yours.

Attribution Non-Commercial No Derivatives (cc by-nc-nd)



- This license is also known as the “free advertising” license. It is the most restrictive out of the six creative commons licences. It allows others to download and redistribute your work for non commercial reasons but give you full credit for it.

The power of the open licenses lie not so much on legal and cost factors but rather on the educational opportunities they create and the possibility they hold to reach out to a wider community.

For many people, CC licenses are simply a solution to a legal problem; namely, copyright laws the world over can be too inflexible given the opportunities inherent in the modern networked realities of the Internet. However, the real power of CC is not the legal code of the licenses, but rather the ideas that spawned and sustain the ‘some rights reserved’ licensing approach (Bissell, 2009, p. 101).

Furthermore, Creative Commons has even created a machine readable mechanism to identify the copyright status of educational objects online and is also supporting the development of a system for rights clearing (CED, 2009).

2.4 Conclusion

This chapter has provided a background of issues which informs this research. The chapter has indicated a connection of a knowledge society and qualified human capital. It has briefly highlighted the role of HE in nurturing this human capital. The researcher has also briefly discussed the role of access to information resources in enhancing teaching learning and research which are the major mandates of higher education institutions in general and universities in particular and some of the barriers that hinder access to information resources. Further, the work has discussed the potential of OER in enhancing availability, accessibility, acceptability and adaptability of information resources, with an overall goal of availing education to many - a fundamental human right. Moreover, major research studies in the field of OER have also been briefly discussed. The review has indicated that the few studies conducted about OER in Africa are mostly analytical. This research therefore fills a gap that

exists in the field of OER in Africa and Kenya in particular. By examining the experiences of faculty and students in access to information resources, their awareness of OER and their views of its adoption, gaining an expert opinion of how OER can be appropriate for this particular institution's situation, provide empirical evidence and gives recommendations based not on generalization or assumptions, but on what is revealed by the empirical data.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter discusses the methodology employed in this study. It gives a justification for the method and the philosophical stance the author has taken. The research design for the method chosen is described. The population, sample and the sampling technique employed is also indicated and justified. The chapter also explicitly outlines each technique used for data collection and administration of the instruments. How the pilot studies were conducted and the results of it are also illustrated. Lastly, the ethical considerations and the delimitations of the study are highlighted.

It is worth noting here that, the books *Research Methods in Information* by Pickard and *Case Study Research* (4th ed.) by Yin were extensively used to help the researcher understand the process of carrying out research and more so, case study research. They are heavily referenced and quoted to back the researcher's ideas and decisions to carry out the research the way she did.

3.2 Justification for the Paradigm and Methodology

This work is guided by a post-positivist interpretation of research. According to Pickard (2007), "Interpretivists take the stance that any research activity will leave the subject of that research in an alerted state...interpretivism can offer understanding of the meanings behind the actions of individuals" (p. 12). This study aims to propose OER to the institution being studied as a means to increase access to teaching, learning and research resources and to enhance collaboration among faculty staff within and without the institution. In this way, it hopes to leave the subject of the study alerted. The study seeks to understand the experiences of the faculty staff and students of Moi University, Nairobi Campus, in accessing information resources and hence interpretation of findings was based on this particular context. Therefore, as Pickard (2007) notes, "Interpretivist tradition is concerned with individual contexts" (p. 13),

transferability of the findings will depend on similar contexts. Furthermore, according to Weber (2004), “researchers who are labeled as positivists tend to use certain kinds of research methods in their work; experiments, surveys, and field studies. Interpretivists, on the other hand, tend to use other kinds of research methods in their work; case studies, ethnographic studies, phenomenographic studies, and ethnomethodological studies” (p. 10). This study is a case study, and is guided by an interpretivist approach.

The research will employ a methodological dualism where both qualitative and quantitative data will be collected and interpreted. Nevertheless, the dominant methodology employed in this research is qualitative. “Qualitative methodology is applied by interpretivists including dialect interchange with participants and hermeneutics, depending on both the tacit and explicit knowledge of the researcher” (Pickard, 2007, p. 12)

3.3 Research Method

This work is a case study – single case with embedded units focusing on a satellite institution of Moi University - Nairobi Campus. The choice of a case study over other research methods was for four main reasons. To start with, the research questions being investigated are in the form of *why* and *how*. According to Yin, “why” and “how” questions are more explanatory and “deal with operational links needing to be traced over time, rather than mere frequencies or incidence” (Yin, 2009, p. 9). Secondly, no control of behavioral events was done as would be the case for experiments. Thirdly, the focus is of a contemporary nature, the experiences of information access as it is at present. Lastly, the multiple sources of evidence being used lend a case study more suitable. As Yin (2009) states, “the case study’s unique strength is its ability to deal with a full variety of evidence-documents.....beyond what might be available in a conventional historical study” (p.11).

3.4 Research Design

Yin (2009) defines a research design in the most elementary sense to be the logical sequence that connects the empirical data to a study’s initial research questions and ultimately, to its

conclusions. It is viewed as a “blueprint” for the research dealing with what questions to study, what data are relevant, what data to collect, and how to analyze the results (Schwab and Samsloss as cited in Yin, 2009). For a case study, he identifies five components that are important in a research design; a study’s questions, its propositions – (if any), its unit(s) of analysis, the logic linking the data to the propositions and the criteria for interpreting the findings (p. 27).

The main unit of analysis in this study is Access. The embedded unit is OER. This is an exploratory case study and as Yin (2003) states, exploratory studies usually have no propositions and have rather a stated “purpose as well as the criteria by which an exploration will be judged successful” (p. 22).

3.5 Study Population

The study population for this research encompassed students, librarians and faculty staff of the chosen case (Moi University – Nairobi Campus) and experts in the field of OER. The reason for this was because the study focused on experiences of access to information by students and faculty of the Nairobi Campus hence the need to collect data from them. Secondly, the library is vital in enabling access to information resources at the campus and hence the need to obtain data from the librarian about library services and use, and thirdly, the researcher proposes OER as a way to increase opportunities for information access at the campus. Using OER experts to advice gives the research greater credibility since experts’ advice is integrated with the resultant arguments, conclusions and recommendations of this study

3.6 Sample

Purposive sampling was used for the selection of the case. “The logic of purposeful sampling lies in selecting information-rich cases for study in depth. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research” (Patton, as cited in Pickard, 2007, p.64). Further, Yin (2009) indicates that, the

rationale for a representative case “is to capture the circumstances and conditions of an everyday or commonplace situation” (p. 48) In line with this, Moi University Nairobi Campus was chosen for the following reasons:

Out of the eight satellite campuses of Moi University, Nairobi campus has experienced the highest growth in terms of student admissions, faculty and number of courses offered. It has the most established faculty of information sciences, which is involved in training information professionals. It would be useful to gather their experiences and their proposals of how to better improve the situation of information access from their professional point of view.

Another vital reason for the choice of this campus was that the researcher is an alumni of the main campus and has created a rapport with the faculty community in the information science department of this campus (her former lecturers) who were vital in providing questionnaire data. Pickard (2007) supports this by her statement that “you must consider practical issues such as the time you have to conduct the field work, availability of the people you have sampled [...] always be aware that you must retain a rapport with the community”. This statement also supports the reason given below.

The campus was easily accessible for the researcher since she had to carry out pre study observation by making several visits to the case to get a glimpse of the day to day activities of the campus and to gain consent of intent to carry out the research. It was also during that time that the researcher identified two contact persons to help in contacting questionnaire respondents to facilitate data collection.

For the faculty and student questionnaire, stratified random sampling was used. Since the campus has 6 schools and both undergraduate and post graduate students, this sampling proved to be the most representative. It is worth noting that, apart from providing quantitative data, the online questionnaires were used to obtain data that would help identify respondents

who would be followed up for the interviews and hence a large sample was not necessary but rather a representative one was. Table 2 below indicates how the questionnaire respondents were chosen.

Table 2: Questionnaire Respondents for the Case Institution

SCHOOLS	UNDERGRADUATE	POSTGRADUATE	FACULTY
Information Sciences	2	2	2
Business and Economics	2	2	2
Human Resource Development	2	2	2
Public Health	2	2	2
Arts and Social Sciences	2	2	2
TOTALS	10	10	10

The team of four OER experts from Europe, Africa and North America were professionally recommended through the snowball sampling technique. The choice of Europe and North America is for the reason that the two were the first proponents of OER, and OER initiatives are developed in Europe and North America more than other continents. In addition, it was easy to identify experts from the two continents. An expert from Africa was contacted to present an African context and perspective since they are assumed to be aware of similar situations in the continent.

3.7 Techniques for Data Collection

To be able to answer the questions of this study, various techniques were employed and multiple sources of evidence were used. The techniques employed included interviews, online questionnaires and observation (done during the pre study site visits). Questionnaires were administered to students and faculty. Interviews were conducted with the librarian heading the Nairobi Campus, OER experts and follow-up interviews with faculty and students, carried out to enable further elaboration of what they had stated in the questionnaire. This would come in handy in improving the quality of the final report and also adding credibility to the study.

The steps and activities involved in this activity of data collection are elaborated below.

3.7.1 Pre Study Site Visits

The researcher took several visits to the Nairobi Campus in November 2009 till the end of January 2010. The aim of the visits was threefold. Firstly, to identify persons who would act as institutional contact persons and would support in identifying and collecting email addresses for administering online questionnaires, help to arrange the follow-up interviews with the identified persons and report of any eventualities since the researcher would be detached from the case for most of the research period. The second reason was to seek consent to carry out the study at the Nairobi Campus which was achieved. The last but not least, was to observe how the day to day activities of the campus were running and to visit the facilities that the institution provided; for example, the computer laboratory and the library.

3.7.2 Questionnaires

As stated earlier, both qualitative and quantitative data was collected for the purpose of this study. Quantitative data was collected to map the situation and issues at the Nairobi Campus and to facilitate selection of persons for the next stage to be interviewed. Thus, it was a part of the case study and as a preliminary stage for the interviews. Baxter and Jack (2008) support this idea of integrating quantitative survey data in a qualitative study in the following statements:

Unique in comparison to other qualitative approaches, within case study research, investigators can collect and integrate quantitative survey data, which facilitates reaching a holistic understanding of the phenomenon being studied. In case study, data from these multiple sources are then converged in the analysis process rather than handled individually. Each data source is one piece of the “puzzle,” with each piece contributing to the researcher’s understanding of the whole phenomenon. This convergence adds strength to the findings as the various strands of data are braided together to promote a greater understanding of the case (p. 554).

The online questionnaires were used to derive necessary information about access to information resources for teaching, learning and research, collaboration and OER from faculty and students of the case. An online questionnaire was the instrument of choice for this research project because it was easy to administer while geographically distanced from the

case. The setback with the online questionnaire is that some respondents were not in a position to respond to it immediately because of technological barriers such as unreliable Internet. In fact, at some point, when very low response was experienced, a printable version of the questionnaires was derived and was distributed by the contact persons in person to the respondents.

SurveyMonkey was the tool used to design and administer the questionnaire. It was chosen for the reason that, its capabilities enabled the researcher to cover every aspect she required. It allowed for all types of questions from open ended to closed questions and scales. On a paid upgraded version, as was the choice for the researcher, there was no limit to the number of questions asked. It was also possible to get more than one response from one IP address – which was a requirement since it was assumed that many respondents may not have personal computers and Internet but would rely on the campus computer laboratory or cyber cafes. In addition, the tool allowed for multiple downloads in different formats of the answered questionnaires.

The questionnaires were divided into four parts. The first part was a covering letter. It introduced the researcher and gave her contact details. It also indicated the purpose of the study and asked the respondents to participate assuring them that their data would be used for the sole purpose of the study. The second part was the default and longest with the main questions around access to information resources. The last question of this part asked if the respondents were familiar with the concept of OER. Logic was included in this question such that if the respondents said “yes”, they would be prompted to the next session on OER, with more questions on the topic, after which they would be requested to provide their contact details and the most appropriate time they would prefer to be contacted for a follow-up interview by the researcher. If they responded “no”, they would be automatically taken to the last session to finish the questionnaire, with a thank you note for participation. Details of the two online questionnaires are elaborated below.

3.7.2.1 Faculty Questionnaire

The first set of questions in this questionnaire was about faculty teaching career; how many years they have taught at the university, in how many universities they have taught and if they are teaching elsewhere apart from the Nairobi Campus. Since the Nairobi Campus has most classes in the evenings and Saturday's, it was necessary to find out if faculty was engaged/taught elsewhere. If they did, an OER programme could even be more appropriate. The next questions asked about any works written during their profession, any hindrances for not writing and where they had published their works. This question was asked in order to understand if faculty have created the resources and find out some of the factors that hindered them from contributing or creating content. This understanding, according to the researcher, was important in the event that an OER project is to be initiated, issues like these would also need consideration. Other questions related to where they accessed information resources from the campus sources, facilities available to them to access these resources, alternative options that were available and internet access. The faculty was also asked to give their views on sharing of resources with fellow faculty who teach similar courses in other Moi Campuses or in other universities. In addition, they were asked to give their views on how access to information resources for teaching and research could be improved at their campus. Lastly but not least, they were asked about their familiarity with OER and if they had interacted with any OER's. Those who indicated to be familiar with OER were asked their views of adopting OER at their campus and barriers/ challenges of adopting such an initiative.

3.7.2.2 Student Questionnaire

Most of the questions in this questionnaire were similar with the ones in the faculty questionnaire. The first set of questions was designed to collect information on student characteristics; for instance, if the students studied full time or they studied and worked, their level and their year of study.

The questions that followed were to enquire information about the sources from which they access information resources for learning and research; both from the campus and off-campus,

since it was assumed that most of them do not spend full days at the campus if they took evening and Saturday classes. Further, they were asked about the formats of information resources they access and use, the challenges they encounter in terms of access to information resources and to learning in general. They were also asked to give their views on how access could be improved. Lastly, they were asked to indicate if they were familiar with the concept of OER and if they had interacted with any.

3.7.3 Interviews

Interviews are one way to obtain in-depth information in case study research. As Kvale (1996) states, “through conversations, we get to know other people, get to learn their experiences, feelings and hopes and the world they live in” (p. 5). In addition, Pickard (2007) states that, “interviews are appropriate when the purpose of the researcher is to gain individual views, beliefs and feelings about a subject” (p. 181). This was the specific purpose of this study – experiences of faculty and students in accessing information resources and views and opinions of experts on OER in the institution.

As stated earlier, interviews were conducted with the campus librarian, faculty and students and OER experts. Since the researcher did the interviews while still in Europe, the interviews had to be well planned for, in terms of technology and logistics. The researcher bought a digital recorder that was used to record all conversations. Two possibilities were expected during the interviews with participants at the institution under study - the interviewees may not have Internet connection and if they did, it may or may not be reliable for a Skype interview. In this case, the researcher would then use Voice over Internet Protocol (VOIP) to call at a fee, the interviewee’s regular mobile or land line phone. The conversation would then be recorded using the digital recorder for later transcriptions. The service used in this case was InterVoip. As it later turned out, all participants of the case did not have reliable internet for free calls via Skype and so all the interviews were conducted by calling their regular mobile phones using InterVoip.

All the interviews took the form of “focused interviews”. These, according to Yin (2009), are likely to be following a certain set of questions. They may be open ended and assume a conversational manner. According to Yin, a major purpose of such interviews “...might simply be to corroborate certain facts that you already think have been established” (p. 107). The reason for the focused interviews was because, faculty and students had already answered a questionnaire and a follow-up interview was to obtain more insights into the issues that they had already provided in the questionnaires. The interview with the campus librarian was arranged to gather information on the resources and services the library provides and to get details on the library usage. Some of these details had been noted by the researcher during the pre site visits at the case. Lastly, the interviews with the experts were arranged to obtain expert opinions about OER in the situation that was presented of the case.

Each interview was transcribed before conducting the next. This was done for two main reasons. First, to avoid a pile up of data that would cause much work and time doing it at a later stage. Secondly and more importantly, since the study was of a qualitative nature, each interview transcription allowed reflection of the questions under study and the researcher assessed if there was a need to change or add any questions to be asked in the next interview in order to obtain information that could help to answer best the research questions. In short, to allow each interview inform the next. Pickard (2007) supports this by the statement “...there is no reason to stick to a rigid set of questions if this will not achieve your research goals. You can learn from one interview before you move on to the next” (p. 178).

Pickard (2007) further notes that, “interviews can be used to confirm or refute data gathered from other tools such as observation, and diaries” (p. 181). This study used a variety of tools; observation, questionnaires and interviews. Data from these sources will be analysed for similarities and/or differences. Details of each interview are elaborated further below.

3.7.3.1 Interview with Campus Librarian

The Nairobi Campus has one librarian and three assistants who manage and run the day to day activities of the library. As an information professional, and a key figure in enabling access to information resources, the Nairobi Campus librarian was interviewed about the library use by staff and students, the library collection, services and subscriptions, collaboration with other libraries, institutional repository and also their views on how information resources can be enhanced to provide a wide variety for students and faculty at the campus. Lastly the librarian was asked her opinion on OER. The interview took the form of a telephone call and lasted for 50 minutes.

3.7.3.2 Follow-up Interviews with Faculty and Students

Selected members of the faculty and student communities were interviewed after the submission of questionnaires. Selection was done on the basis of the knowledge of OER and the respondent's willingness to be contacted at a later time. This was derived at by a request to provide their contact details for a further discussion (in an interview) of the views they had indicated in the questionnaire on access and OER. Since this is a case study, such elaborations are necessary so as to get an in-depth view of the issues under discussion. These interviews took the form of telephone calls to regular mobile phones and lasted between 30 – 60 minutes. A total of three (3) students and one (1) faculty staff were interviewed.

3.7.3.3 Interviews with OER Experts

A semi structured Interview guide was drafted and used for experts from the field of OER, to get their opinions on if OER was useful and applicable at the institution, and how OER could be implemented to enhance access to information resources for teaching, learning and research and to faculty collaboration. Prior to the interviews, the results of the faculty, students and librarian were given to them through email to give them insight into the situation at the Nairobi Campus.

Three in depth interviews were conducted via Skype with the experts from Canada (University of Toronto), United States (MIT) and United Kingdom (Open University). The fourth interview was conducted through asynchronous interviewing by email exchange since the OER expert from Africa (University of Western Cape) was busy and could not manage to schedule for an interview during the timeframe the researcher had for data collection. The data collected was transcribed and analysed for any concurring or differing opinions. All the Skype interviews took an average of 60 minutes.

3.7.4 Pilot Study

Teinjligen and Hundley (2001) indicate that:

The term 'pilot studies' refers to mini versions of a full-scale study (also called 'feasibility' studies), as well as the specific pre-testing of a particular research instrument such as a questionnaire or interview schedule. Pilot studies are a crucial element of a good study design. Conducting a pilot study does not guarantee success in the main study, but it does increase the likelihood (p. 1).

Pilot studies were carried out for the online questionnaires and also for faculty and student interviews. Details of these are elaborated in the section below.

3.7.4.1 Pilot for the Questionnaires

The pilot study for questionnaires considered a 10% of the population undertaking the real study. Hence, based on the above table on the sample, the student questionnaire was piloted with two students and the faculty questionnaire with one faculty.

The aim of the pilot for questionnaires was twofold. First, to check for grammatical and language errors and secondly, to find out if the questions were understood/made sense and if they would elicit the answers the researcher anticipated from the main study. For this reason and for the student questionnaire, one student with English as a native language was used and one student from Africa who had studied in an African university and understood the situation

at the universities were used. These were chosen among the researcher's course mates since they were easy to reach and follow-up.

The responses obtained from this pilot study went a long way in providing useful insights on the wording of the questionnaire and making it more understandable. Some things the researcher had ignored like "Please" proved to be very useful when used to give an instruction. One pilot participant complained that the questionnaire was too long and was tired by the time she finished filling it out. However, this was not changed since the researcher felt that all the data in the questionnaires was needed in the final analysis.

The faculty questionnaire was piloted with one staff member at Moi University who was not considered to take part in the main study. The respondent gave a crucial feedback that was used to improve the understandability of the questionnaire. For instance, he complained of technical phrases like – learning management system/platform and institutional portal which he said some faculty members may not understand unless further elaboration was provided. This change was effected by providing a short description of what the terms meant. Other comments were related to grammatical coherence, and rephrasing of questions that tended to cause confusion. For instance, a multi - choice question on Internet access that stated: "From what sources do you access internet", was rephrased to state "From where do you access Internet".

3.7.4.2 Pilot for the Interviews

Interview pilots were carried out only for students and faculty. The same respondents used for the questionnaire pilots were used but only one student from among the two was used for the interview pilot. The reason for carrying out interview pilots was twofold. First, to practice the art of interviewing and to gather from the respondents if the questions posed to them were understandable. Secondly, to test the device – recorder that would be used to record the real interviews for further transcriptions.

A very important point was noted by the faculty pilot interviewee. He complained that during the interview, the researcher tended to “force” her idea to the participant and make them agree with her. This was noted and avoided during the real study. The researcher let the interviewees express themselves freely without influencing their opinions.

The device worked well – the voices were clear and no technical huddles were experienced. The network/Internet connection (for a Voip call) was good to facilitate the interview with the pilot interviewee in Kenya (a normal mobile phone call) and the voice too was clear when listened to later from the recorder.

3.7.5 Document Review

Documents were reviewed to get an overview of the university and on issues relating to information access. In addition literature was reviewed to get an in-depth understanding of OER –availability, adaptability, licensing and sustainability. Various projects, both globally and in Africa were reviewed to have an in depth understanding in the subject.

3.8 Ethical Considerations

Mugenda and Mugenda (2003) affirm that the researcher has to be careful to avoid causing physical or psychological harm to respondents by asking embarrassing and irrelevant questions, threatening language or making respondents nervous. Similarly, Sommer and Sommer (1997) argue ethical considerations such as confidentiality, anonymity and avoidance of deception are very important issues in social research. For the purpose of this study, permission was sought from relevant authorities. Nevertheless, some participants such as the librarian of the campus could be easily recognized. They were alerted about it and agreed to take part all the same. The researcher explained the purpose of the research to the participants and assured them of confidentiality of their responses and identities. To ensure that this was adhered to, data analysis was done without mentioning of any names.

3.9 Credibility Strategy Employed in the Research

“We all want our findings to be believed and are responsible for ensuring that they can be believed” (Pickard, 2007, p. 18). Pickard further adds that qualitative methodology often applies triangulation as a means of establishing credibility since the use of multiple data collection techniques compensates for any limitations of individual techniques (p. 20). In this study, observations done during the pre study visits, the use of online questionnaires and interviews comprises of the multiple techniques that have been employed to ensure triangulation. Furthermore, using a variety of data sources – students, faculty staff, a librarian and OER experts was an option to ensure greater credibility.

3.10 Delimitations of the Study

The sample for the online questionnaire was relatively small because it comprised of 20 students and 10 members of the faculty staff. Total responses were 10 from students and 8 from the faculty staff which was short of the expected number. This did affect the selection of interviewees for further interview follow-ups. If a larger sample had been selected and if all had responded, probably there would have been a greater chance of getting more respondents aware of OER and willing to participate in the interview.

There were only four interviews conducted at the case. Three with the students and one with the faculty member of the campus. Since interview follow-ups were conducted on the basis of OER awareness, most respondents indicated they were not aware of the concept. Those who did, not all agreed to be interviewed. In fact, the faculty staff interviewed indicated no awareness of OER but since the researcher needed the views of the faculty on other issues too, this criterion was ignored.

This is a qualitative case study and therefore, the findings are context specific; the arguments and recommendations in general can only apply in situations of shared or similar contexts and cannot be generalized.

3.11 Data Analysis

Preliminary manipulation of data considered Miles and Huberman's (1994) framework of data analysis; data reduction, data display and conclusion drawing and verification. This was useful not only to ensure manageability of the vast amounts of data from the different sources, but also to enable choose which aspects of the data would be emphasized or minimized during analysis.

Analysis of data in this study involved two phases. The first phase was to analyze survey data from faculty and students of the Nairobi Campus and then interview transcriptions from faculty staff, students and the librarian of the campus. This information was analysed in the major themes of access, collaboration and OER. Subthemes of these as they emerged were also included and the survey and interview data was analyzed for any concurring or differing opinions. The second phase involved analysis of transcribed information from interviews with OER experts. The first phase information was used to inform the experts of the situation at the campus. Their views on if and how OER could be applicable at the campus were analysed.

All analysis was guided by the objectives and research questions of the study where each objective derived a variable that formed a theme for analysis. Previous research was cited and used in the discussion of the results.

3.12 Conclusions

This chapter has laid down an account of the research processes engaged in while conducting this research. Using various sources of evidence, justification has been provided for taking the various stances/procedures of conducting research in the manner that the researcher did.

CHAPTER 4: DATA PRESENTATION ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter presents an analysis of data collected in two parts. The first part is the presentation and analysis of data obtained from the case institution and from the OER experts interviewed. This involves the presentation of preliminary survey data from students and faculty regarding their experiences with accessing information resources for teaching, learning and research, to enquire their familiarity and opinions on adoption of OER, and the presentation of data from interviews with selected students, faculty and the case institution's librarian. Further, data from interviews with OER experts on their opinions on the viability and applicability of an OER initiative in the described case will be analyzed.

A total of 10 out of 20 students responded to the online questionnaire. This represents 50% of the expected responses. Out of these, 3 out of 10 were post graduate students and 7 out of 10 were undergraduates. On the other hand, a total of 8 out of 10 faculty members responded to the online questionnaire. This represents (80%) of the expected responses. In addition, a total of 4 OER experts were interviewed

Faculty and student interview participants were chosen on the basis of two criteria. Firstly, according to their familiarity with OER, and secondly, according to their willingness to be interviewed. Out of the 10 student respondents, only 4 met both criteria, and 3 of these were interviewed, since the fourth was only available at a later stage which was not appropriate for the researcher. Nevertheless, the only faculty respondent who indicated that he was familiar with OER did not want to be interviewed and therefore, out of those who were not familiar with the concept, only one agreed to be interviewed. The interviews were intended to elaborate more on the issues that they had responded to in the questionnaire.

The second part involves discussions of all data presented and analysed in the first part. Data from the case institution and that from OER experts will be discussed with reference to literature.

4.2 Part One: Presentation and Analysis of Data from the Case Institution

This section will present and analyse data resulting from Moi University- Nairobi Campus. This includes survey data from online questionnaires administered to students and faculty and then interview data from the librarian, selected students and faculty.

4.2.1 Online Questionnaire Data

Data from the two online questionnaires administered to the students and faculty respectively is presented and analysed according to the background information (student, faculty), access to information (sources of access, formats of access, technology, challenges of access and views of improving access), collaboration (faculty collaboration, views on collaboration) and OER (awareness and interaction, views of adoption and challenges and barriers).

4.2.1.1 Background Data from Faculty and Students

The first set of questions in the online questionnaire asked from both faculty and students, were to provide a background of their career in teaching (faculty) and to know the characteristics of the students.

Faculty

The first set of questions focused on the faculty teaching career: years of teaching at university and university institutions taught. These were asked in order to elicit information of the experiences faculty had in teaching and research with the assumption that faculty with many years of teaching experience at the university had probably engaged in research or publishing. Table 2 below represents data from these two questions.

1. For how long have you been teaching at university as a full time or part time staff?
2. In how many university institutions have you taught as a full time or part time staff?

Table 3: Faculty Years of Teaching and Number of Universities Taught

Faculty Respondent	Years of teaching at University	University Institutions Taught
1	19 years	2
2	3 years	2
3	15 years	2
4	12 years	3
5	7 years	2
6	4 years	1
7	3 years	2
8	6 years	1

The Table 3 above indicates that 3 out of 8 faculty members have been teaching at university level for more than ten years, and all the three have taught in at least 2 university institutions. Another 3 of 8 have taught at university level for less than 5 years, and only one of them has taught at 1 university institution. The remaining 2 of 8 have taught for six and seven years and have taught at 1 and 2 institutions respectively.

The third question, still on faculty teaching career asked if the faculty staff is currently teaching at another institution apart from Moi University - Nairobi Campus, as full time or part time staff. 5 out of 8 responded “Yes” while 3 out of 8 responded “No” as indicated

below. Out of the five, 4 are currently engaged in other Moi university institutions – the main university campus and Chepkoirel campuses. Fig. 2 below indicates these results.

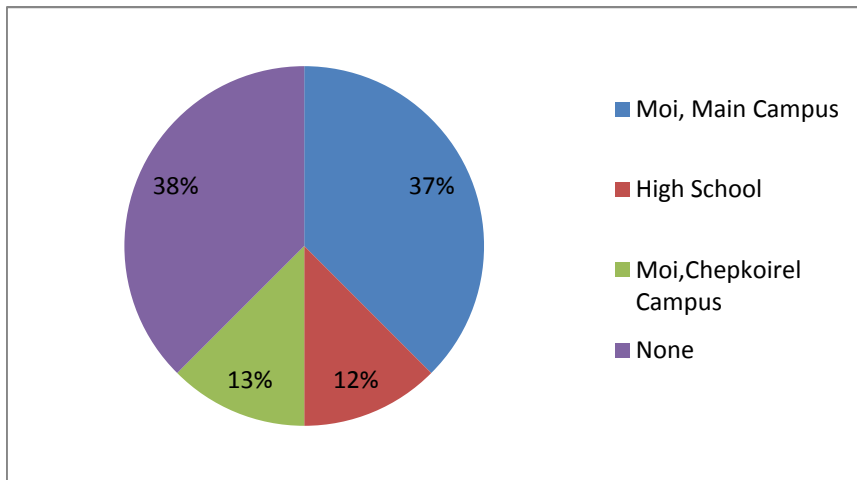


Figure 2: Additional Current Faculty Teaching Engagements

Questions four, five and six in the faculty questionnaire asked if faculty had published any academic work(s), where they had published the work, and if they hadn't, reasons why they did not publish any work(s) respectively. These questions were viewed as important since they would indicate the faculty hindrances to publishing/authoring. The question on where they publish their work(s) was asked to find out if they publish in Open Access (OA) journals. Since this study aims to explore the potential of OER in the institution, the researcher felt that such background information would be relevant. It is with the assumption that, if they publish their works in OA journals, they would probably welcome the idea and participate in creating OER. Knowing the hindrances to publishing would help know how to deal with indicated issues.

The results indicated that, more than half of the respondents had published academic works in their teaching career. 5 out of 8 indicated they had published academic works while 3 out of 8 indicated that they had not published any works in their teaching career.

The results also indicated that, out of the 5 who had published, 2 had published with commercial publishers only, none had published in OA journals only while 3 had published in both commercial and OA journals.

The main reasons for not publishing given by the 3 faculty who indicated that they had not published in their teaching career were a lack of access to current research publications, and the lack of time to publish were some of the factors. Some of the responses are reported below.

It takes very long to access current research work to inform any publications. There's little access to international publications and journals (*Respondent #1*)

I do not have enough time to publish. I have too much in my plate (*Respondent #3*)

Students

The first two questions to the students enquired about the year of study and the level of university degree they are enrolled for. The researcher felt it was important to ask the respondents about their level of study since she assumed it would form a basis for understanding the responses to the main questions in the study. The researcher assumed that a student in a higher class or at a higher level of study such as master or doctoral would be engaged in more research activity and hence would probably have a higher need for learning and research information resources.

As indicated at the beginning of the chapter, out of the 10 respondents, 7 were undergraduates: 1 in their first, 2 in their second, 2 in their third and 2 in their fourth years. 3 out of 10 were post graduates: 2 in their first and 1 in their second years. Table 4 below illustrates this data.

Table 4: Students' Level and Year of Study

Respondent	Level of Study	Year of Study
1	Post graduate	First
2	Post graduate	First
3	Post graduate	Second
4	Undergraduate	First
5	Undergraduate	Second
6	Undergraduate	Second
7	Undergraduate	Fourth
8	Undergraduate	Third
9	Undergraduate	Third
10	Undergraduate	Fourth

The third question to the students enquired if they studied full time or they studied and had a formal employment. 9 out of 10 indicated that they studied and worked while 1 studied as a full time student.

4.2.1.2 Access to Information Resources

Since one objective of the study was to find out faculty and students' experiences in information access, questions asked in the questionnaires for both students and faculty related to the sources from where they seek information resources (within the campus and off-campus), the formats of information sought and used or recommended (in the case of students), technology access – in terms of equipment and Internet access, challenges encountered in the efforts towards searching information for teaching, learning and research and their views on improving access to information resources.

Sources of Information Access

Both students and faculty indicated that they access information resources from a variety of sources (institutional library, institutional portal, subscribed databases, colleagues/friends, OA journals). Fig. 3 below illustrates the responses obtained from the online questionnaires on the question: sources of information sought for teaching learning and research by students and faculty.

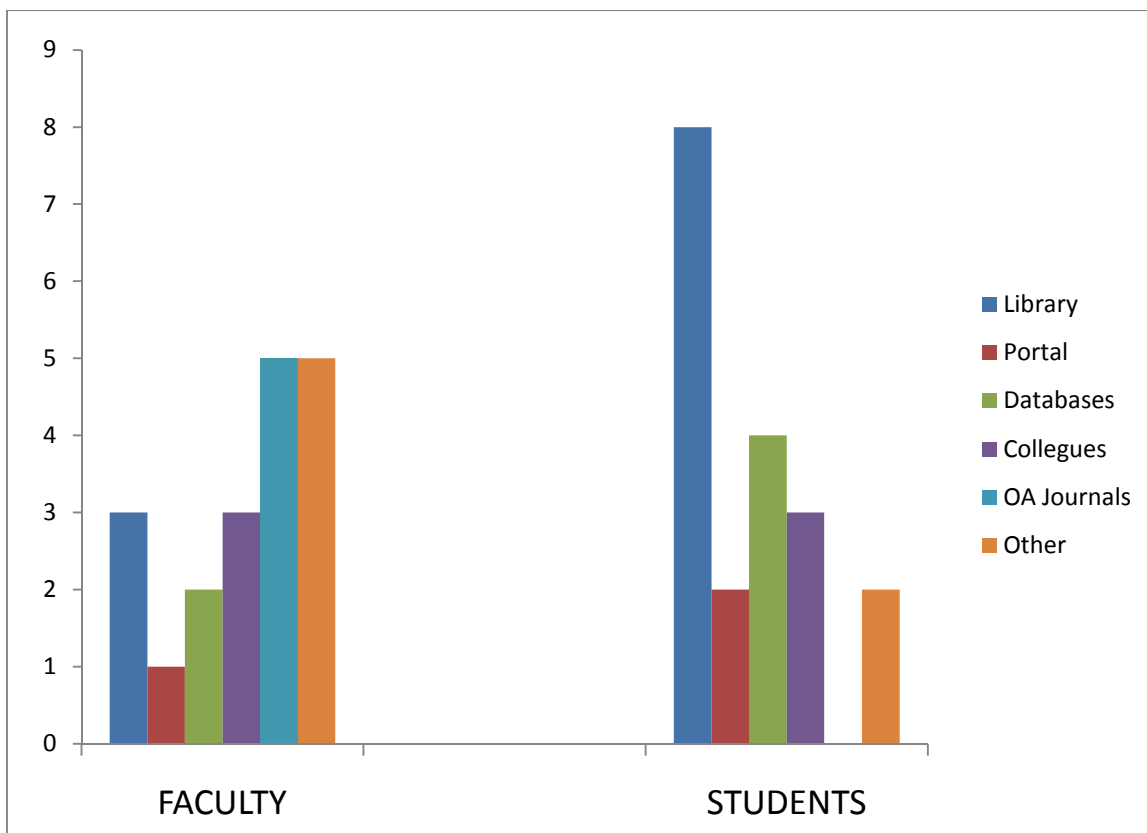


Figure 3: Sources of Information Sought by Faculty and Students

From Fig.3 above, it is evident that the library is used much by the students compared to the faculty. 8 out of the 10 students indicated that they use the library to access information resources whereas 2 out of the 8 faculty indicated that they use the library. Nevertheless, as visible from the chart, the faculty use OA journals and others (which they indicated as “Internet – Google”, “home library” and “personal library”) to access information resources. 4 out of 10 students indicated they use subscribed databases. This is probably because they visit

and use the library much more than the faculty and hence can be able to access the databases. Both students and faculty use colleagues or/and friends to obtain information resources. 3 out of 10 students and 3 out of 8 faculty indicated that they use colleagues/friends to obtain information resources.

In relation to the point above, when asked about alternative or additional places where they obtain information resources apart from the Nairobi University, 6 out of 10 students indicated that they access information from their work places via Internet. 4 out of 10 students indicated that they access resources from other university libraries/portals apart from the Nairobi Campus library, 2 out of 10 students indicated that they access resources from the public or national library. Fig. 4 below graphically represents this information.

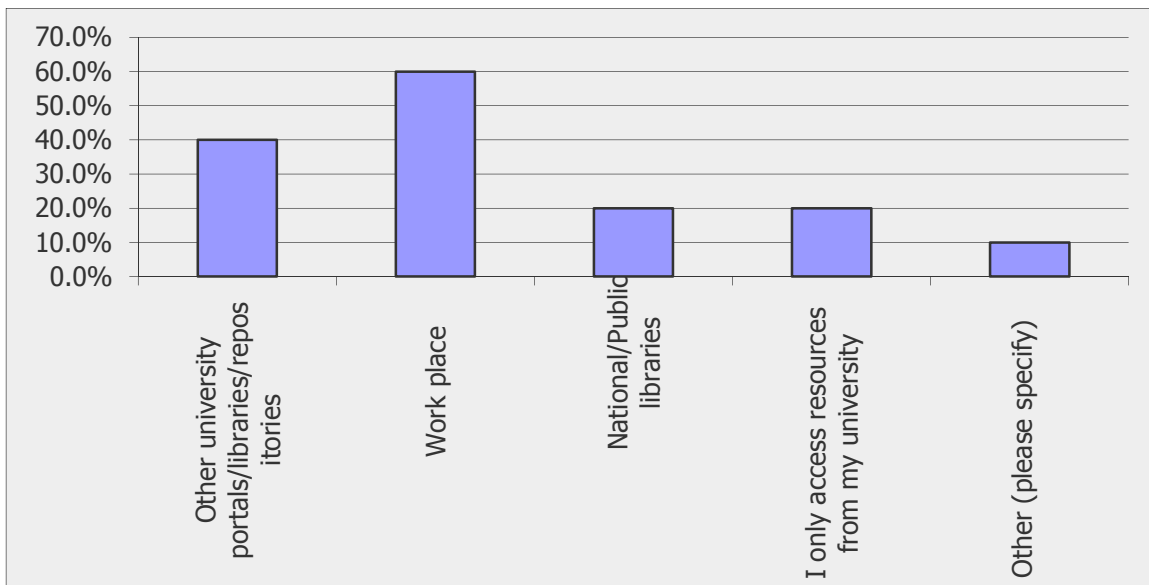


Figure 4: Alternative/Additional Places from where Students Access Information Resources for Learning and Research (%)

Formats and Types of Information Resources Accessed.

Most respondents, both faculty and students, indicated that they access books and journal articles. 6 out of 8 of the faculty staff indicated that they access and use books while all 8 faculty respondents indicated they access and use journal articles for information. On the other hand, all the 10 students indicated they access and use books while 8 out of 10 of the students indicated they use journal articles. Audio and video formats are not popular to both students and faculty; all the faculty and students indicated that they do not access audio formats while only 1 out of 8 faculty indicated that they access and use video resources. Thesis and dissertations are accessed and used by half of the students (5 out of 10) while one other student indicated that they access and use news items for information.

A summary of these results are illustrated in Fig. 5 and 6 below.

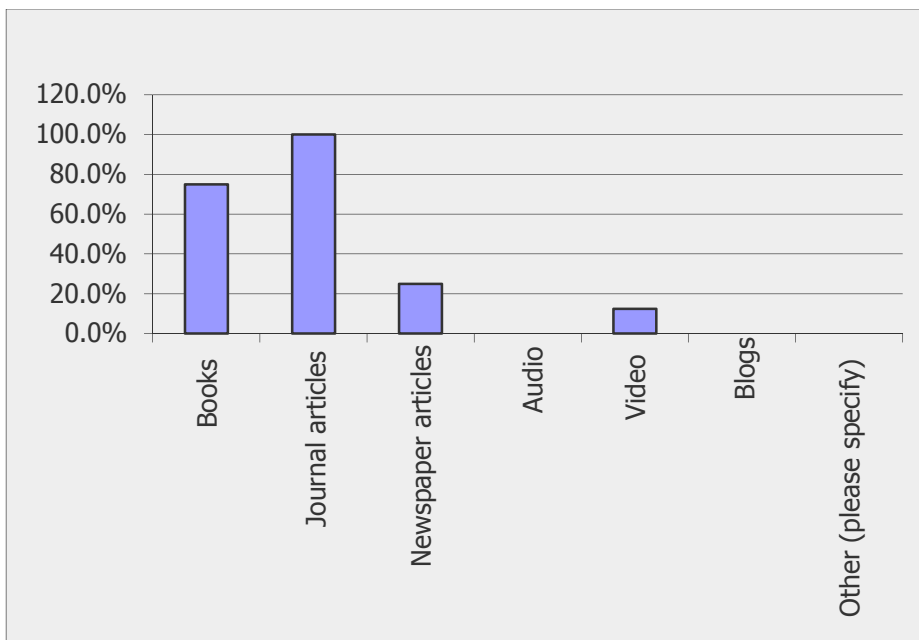


Figure 5: Type and Formats of Information Accessed and Used by Faculty for Teaching and Research (%)

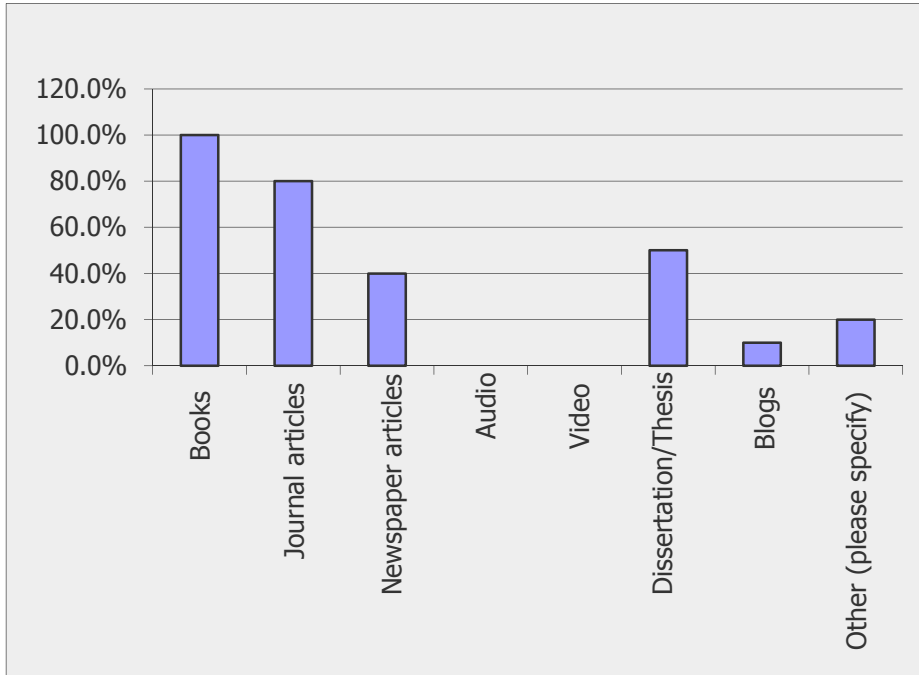


Figure 6: Type and Formats of Information Accessed and Used by Students for Learning and Research (%)

When asked about the types and formats of information materials they refer students to, all 8 faculty respondents indicated that they refer to them books and journals, while 2 others indicated that they also give the students handouts and photocopies of chapters or pages in books and journal articles.

Technology Access

This question was asked in order to find out the technological support that is provided to the students and faculty by the institution to facilitate the information access processes. This is both in terms of equipment and Internet.

Equipment

Questions regarding the equipments available to them such as computers, printers, scanners were asked. The respondents, both students and faculty, indicated that the university provides computers and printers and indicated varying degrees of their availability when they required them. The questions asked on this part were as follows:

1. Tick the appropriate tool/equipment that is available at your institution to facilitate access to required information resources. [computer, printer, scanner]
2. How available are the above mentioned tools when you need them? [always available, sometimes available, rarely available]

Faculty Responses

All 8 respondents responded to the first question of “what equipment is available to you to facilitate information access at the campus”. All the 8 respondents indicated that they were accessible to computers. 4 out of 8 indicated that they were accessible to a printer while none (0 out of 8) indicated that they were accessible to a scanner.

Further, when asked how available these equipment are when they require them, 2 faculty respondents indicated that computers were “always available”, 6 out of 8 indicated that they were “sometimes available” while none (0 out of 8) indicated that they were “rarely available”. 4 out of 8 respondents gave a response to the second part of the question on availability of printers. Out of these 4 faculty respondents, 1 indicated that printers were “always available”, while the other 3 out of 4 indicated that they were “rarely available”. On the other hand, out of the 3 respondents who responded to the third part of the second question

on availability of scanners, all (3 out of 3) indicated that scanners were “rarely available”. Fig. 7 below illustrates this information.

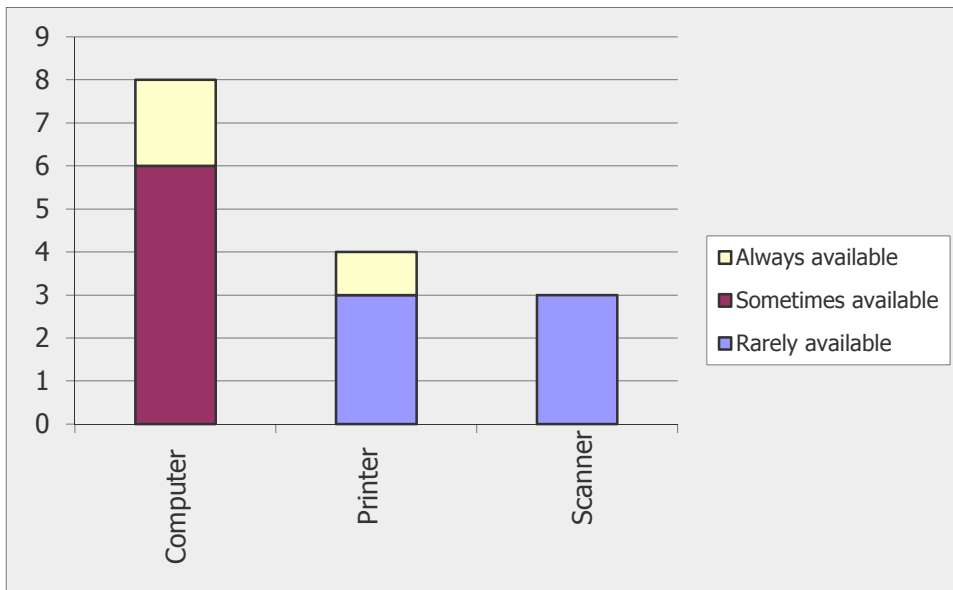


Figure 7: Faculty Responses on Availability of Equipment

Students' Responses

9 out of 10 students responded to the question of “What equipments are available to you at the university to facilitate information access?” and 1 student respondent skipped the question. All the 9 respondents indicated that they were accessible to a computer, 5 indicated they were accessible to a printer while 3 indicated they were accessible to a scanner.

The second question of “how available are these equipments when you require them” was answered unevenly by the student respondents. This means that the respondents answered unevenly to all the three parts in the second question. All respondents responded to the part on the availability of computers, 7 out of 10 responded to the question on availability of printers and 6 out of 10 responded to the part on availability of scanners.

7 students indicated that computers were “always available”, 3 indicated that they were “sometimes available” while none indicated that they were “rarely available”. In addition, 3 out of 7 student respondents indicated that printers were “always available”, 1 respondent indicated that printers were “sometimes available” while the remaining 3 indicated that printers were “rarely available”. On the other hand, no student respondent (0 out of 6) indicated that scanners were “always available”. 1 respondent indicated that scanners were “sometimes available” while 5 indicated that printers were “rarely available”. Fig. 8 below illustrates this information graphically.

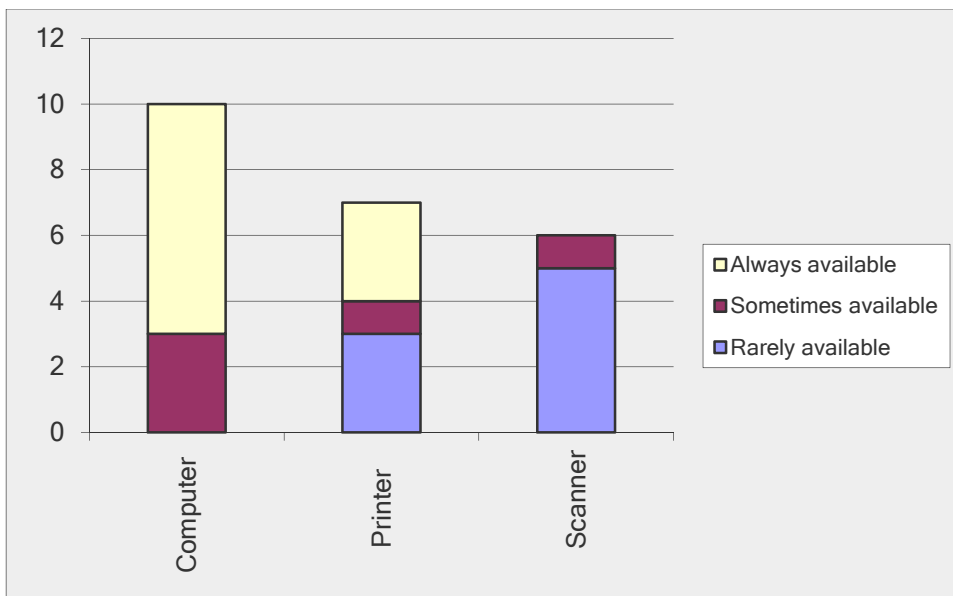


Figure 8: Students Responses on Availability of Equipment

Internet

All respondents, both the faculty and students indicated that they access internet to search information materials to assist them in teaching, learning and research.

When asked from where they accessed internet, the faculty responses indicate that, the cyber café and the institution were the most visited for internet access, followed closely by own subscriptions. Fig. 9 below represents this information

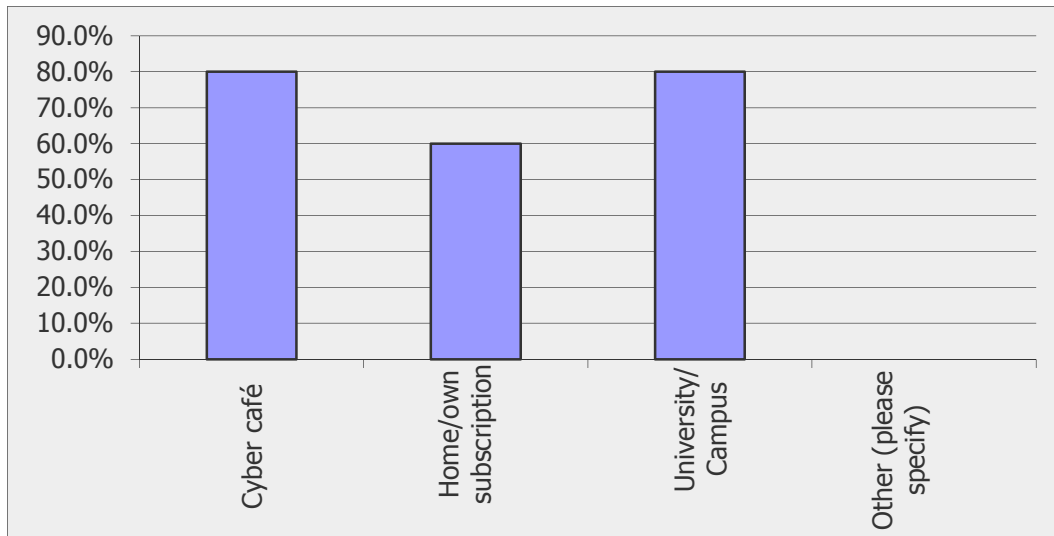


Figure 9: Representation of Places from Where Faculty Access Internet for Information (%)

On the other hand, student responses indicated that they accessed internet at their workplaces more than they did at the institution library or computer laboratory. Students also visited cyber cafes and had own subscriptions of internet. Fig. 10 below represents this information.

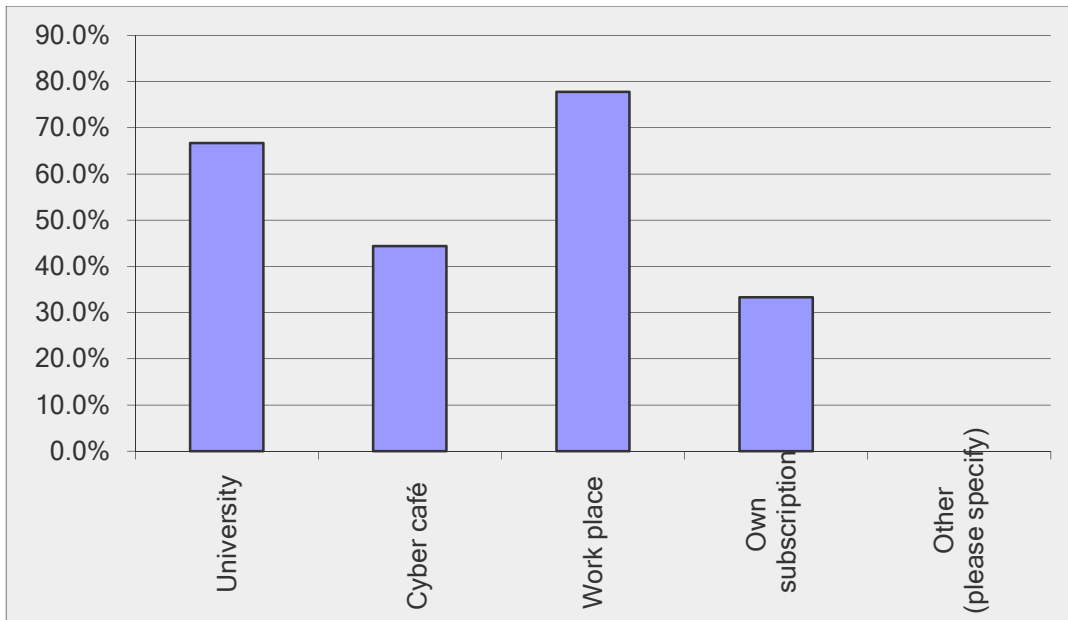


Figure 10: Representation of Places from Where Students Access Internet for Information (%)

Distribution of Course Materials and Assignments

When asked how they made available to students course material and assignments, 6 out of 8 faculty respondents indicated that they gave print outs, 1 out of 8 indicated they used email while 5 out of 8 indicated that they used face to face communication/ word of mouth. None of them indicated they used a Learning Management System (LMS). A graphical representation of this information is shown in the Fig. 11 below.

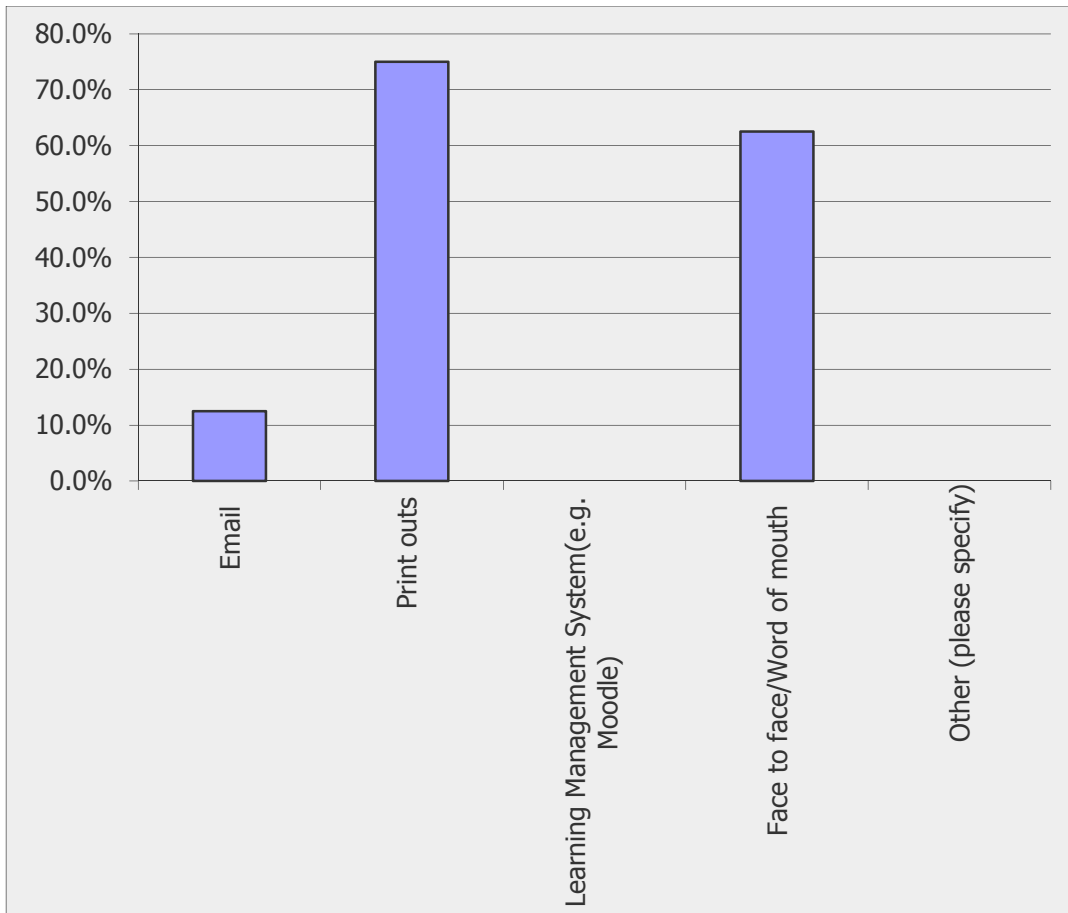


Figure 11: Representation of How Faculty Distributes Course Materials and Assignments (%)

Challenges in Accessing Information Resources

Both faculty and student respondents were asked about the challenges they encountered when accessing information resources for teaching, learning and research. Faculty respondents commented on the issue of time, cost of internet access in cyber cafés, limited journal access and a small library with few reference resources. The faculty responses indicated that the library was not sufficiently meeting their needs and the issue of high costs incurred in paying for internet in cyber cafes to search for information resources. Examples of their responses are as follows: “the campus has a very small library with very few books for reference. The computer room has fewer computers than the students and these are shared between faculty and students”. (*Respondent #1*)

Another stated that “Limited access to some journals and insufficient books in the library on some topics” (*Respondent #2*). On the issue of cost, a respondent stated that “cost of using cyber time and lack of access to latest journals” (*Respondent #3*). On the same question of challenges, student respondents mentioned the issue of time, unstable internet connection, few current information resources and few computers as the main challenges. Examples of their responses are as follows: “instability of the internet link and too much congestion in the computer laboratory” (*Respondent #1*). Another indicated the need to balance time for studies and work as follows “The need to organize my time to ensure a balance between work and studies” (*Respondent #2*). One other respondent indicated that “the university library is not well equipped and therefore I am forced to go to other universities which at times are not easily accessible” (*Respondent #3*). The same respondent added that “the e-journals are sometimes not accessible due to non payment by the university”.

Views on Improving Access to Information Resources

After asking about the challenges they encountered in the process of accessing information resources, both faculty and student respondents were asked to give their views on how access to information resources could be enhanced at their campus. The respondents’ views on improving access to information resources ranged from an improvement in information resource access at the campus, training of faculty and students on using online resources and departmental arrangements of enhancing information resource provision and improving on the reliability of Internet. All respondents, both faculty and students responded to this question. Examples of some faculty responses are as follows: “the university needs to allocate adequate funds to meet the increasing needs of users. Librarians need to be pro-active in forecasting needs” (*Respondent #4*), “universities should encourage having resource centers at faculty/school level to have specific and relevant up-to-date materials for both faculty and students”. (*Respondent #2*), “each discipline should initiate a deliberate focus on identifying cutting edge international journal search”, “training students and faculty on use of e-journals and e-books”. (*Respondent #8*)

Similarly, student responses included availing more learning materials to provision of stable and reliable internet connection. Some of the responses by student were as follows: “always ensure that the computers are working and books in the library are currently relevant to most of the syllabus”, (*Respondent #4*), “increasing the number of volumes especially for those books that are in high demand for referencing and creating a provision where all university bonafide students can access the university portal and journals even from their homes”, (*Respondent #5*) “increase the number of computers and enlarge the resource center laboratory”, (*Respondent #7*), “the library should be equipped with materials especially previous thesis and publications. The university should improve on its payment system”, (*Respondent #8*), “increase number of computers and enlarge the resource center laboratory”. (*Respondent #10*)

4.2.1.3 Collaboration

Questions relating to collaboration amongst faculty were asked to the faculty respondents in order to know if the university faculty staff derived any benefits from them and also to obtain their views on collaboration and sharing of learning and teaching materials and other information resources.

Faculty Collaboration

When asked if they had any collaboration with other faculty teaching at other Moi university campuses, 4 respondents indicated that they did while the other half (4 respondents) indicated that they did not. The faculty indicated that they shared teaching materials, discussed about course outlines and exchanged course outlines and marking schemes. One respondent indicated that “Collaboration on course outline, descriptions, content and exams” (*Respondent #8*) were the main collaboration activities. Another faculty respondent indicated that “we exchange handouts and marking schemes” (*Respondent 7*).

Views on Collaboration

The faculty was also asked how they view the idea of collaboration with the aim of sharing teaching and research information resources. All respondents viewed the idea of collaboration to be beneficial and that it ought to be encouraged for members to move in a common direction, but one indicated that collaboration worked on trust. Examples of the answers given are as follows: “it is essential in creating synergy and avoiding duplication” (Respondent #2), and “universities should be encouraged to share information as is the case in the developed world” (Respondent # 3).

4.2.1. 4 Open Educational Resources

Since another objective of the study was to explore the potential of OER in the institution, it was necessary to find out the familiarity of the concept by the faculty and students and to get their opinions on its adoption in the institution.

Familiarity

When asked if they were familiar with the concept of OER, 1 out of 8 faculty respondents indicated familiarity with the concept while 7 out of 8 indicated that they knew nothing about OER. On the other hand, 6 out of 10 student respondents indicated they were familiar with the concept of OER while 4 out of 10 indicated that they were not familiar with the concept.

When asked if their institution had OER material, the faculty respondent who indicated to be familiar with OER and 1 student respondent indicated that it had, 2 student respondents indicated that it did not have any OER, while 3 other student respondents indicated that they did not know if their institution had any OER materials. All respondents who were familiar with the concept of OER (both students and faculty) indicated that they had not interacted with any OER materials.

Views on OER Adoption

The only faculty respondent who indicated familiarity with OER mentioned that adoption of OER would enhance greater accessibility of information resources. The response was as follows: “it is a good idea. It will make information widely available to the users”.
(*Respondent #1*)

3 out of 6 student respondents who mentioned that they were familiar with the concept of OER skipped the question on views of its adoption. Those who responded indicated that it would be a big step in enhancing availability of learning resources as indicated in this response “it would be a big step towards enhancing availability of learning resources to the students especially those doing research” (*Respondent #4*). Nevertheless, one student respondent was skeptical on the quality of resources “hope it is acceptable but what about the quality?”
(*Respondent #1*)

4.2.1 Interview Data

This section and its sub sections present and analyse data derived from interviews with the faculty, students and the librarian of the case institution into the major themes of access, collaboration and OER and their emergent subthemes.

Questions to the faculty and students were similar to those asked in the questionnaire. The reasons for asking those questions from the faculty, was for them to elaborate further the issues they had indicated in the questionnaire. Questions asked from the librarian during the interview included the library collection and services, the use of the library by students and faculty, institutional repository and the library’s external subscriptions, collaborations the library has with other institutions or libraries and the librarian’s familiarity with OER and views on its adoption. A total of five interviews were conducted at the case institution. One with the faculty, three with students, and one with the librarian of the Nairobi Campus.

4.2.2.1 Background Information

This section presents background information about faculty and student interviewees. Data from the faculty interviewee about his teaching career and some characteristics about student interviewees.

Faculty

The faculty interviewee had 4 years experience teaching at a university. The interviewee is also currently teaching elsewhere and indicated that he had not published any academic works. The reason he gave for not publishing was lack of resources and being overwhelmed by work. His response was as follows: “there is no arrangement by the department like resources that encourage and provide faculty power to publish. Secondly, we are rather overwhelmed by the amount of work we have. You have little time to do publications because we teach throughout the year. We have no sabbaticals that allows for publication. I also teach in another institution”.

Students

Out of the students interviewed, 2 were post graduates in their first year and 1 was an undergraduate in their third year. All the student interviewees are currently working and studying and they attend evening and weekend (Saturday) classes.

4.2.2.2 Sources of Information Access

When asked the sources from which they access information, the faculty interviewee stated he obtains most of the teaching resources from the Internet. His response on this issue was as follows: “the institution provides access to the internet and for our department, we have no databases or journals that are relevant for us. So a lot of information I use for teaching is from the internet. Google and other online material” (*Interview #1*)

Students on the other hand, indicated that they access information resources from the library through subscribed journals and to have access to the print information resources, but also generally via the Internet which they access from the campus or work place. Examples of the student responses are as follows: “We obtain resources from the library. Of course we have the print books. We do also have access to some online journals. And generally, we mostly use internet for searching information” (*Interview #2*).

Another student noted the following: “I access information resources on the internet from the office not from the campus, always. I have only visited the library twice. Once, I went there to do my assignment and second, to read from there” (*Interview #3*).

On the same note, when asked if it was possible to access the databases while out of the library, the librarian noted that it was not possible because of the fear of misuse, for example by printing out and selling them out to the public. The librarian however noted that discussions were underway to determine if it would be possible to provide passwords to faculty and students outside campus.

On the same interview with the librarian, when asked about the library usage by faculty and students, she noted that the post graduates use the library “... Yes, especially for our post graduates. They are using e – journals a lot for their research. The usage is not as much as we would like them to use. The faculty does not use the library much. Some of our faculty members, in fact most of them come from the main campus, so you find that they are able to use the other library much more than this one here” (*Interview #5*)

Formats of Information Accessed

In the interview, the librarian indicated that the library stocks a variety of formats such as print, a variety of online resources and Compact Disk- Read Only Memory (CD- ROM). When asked about an institutional repository, the librarian indicated that “What we have here

is our own theses produced by our own students. It is not electronic. The Theses are catalogued and can be accessed in a library not electronically” (*Interview #5*). The faculty interviewee had this to say “We have very little access to e-books. We have only limited access to journals” (*Interview #1*)

One student interviewee stated that they like accessing electronic resources because they are current. The student noted: “I particularly like electronic books and journal because you get most updated information” (*Interview #3*)

Access to Technology

This section provides interview data on how both students and faculty access technology (equipments and Internet) at the campus.

Equipment

On the issue of technology availability, the faculty interviewee stated that they share the same facilities such as computers with the students. The computer laboratory is used by both the faculty and students. He had the following to say: “we actually do not have facilities for lecturers. We use the same facilities which students use so it becomes very prohibitive because it’s always full with students and hence lecturers have little access. It’s the same situation for most of us full time and part time faculty” (*Interview #1*) Nevertheless, the faculty indicated that he was accessible to a printer at the campus and that he avails course materials to students through photocopying.

On the same issue, one of the student’s interviewed indicated that she works at the institution and hence has access to her own computer. She however noted that it would be difficult for her to access the common computers at the laboratory since they are always occupied. She stated the following: “I am working at the university and I have access to a computer. But at the

computer lab, I would hardly get a sit if I go there. In fact, we were proposing they give us a special unit where post graduates can sit since the undergraduates are many. You can hardly get a computer and accessibility is a problem. We have about 20 computers with a population of about 2000 undergraduates and postgraduates are about 400 so we cannot rely on the ICT lab”. (*Interview #2*)

It was also evident that students who work are accessible to facilities like computers at their places of work. One student interviewee commented the following: “I rely on my work place. I have a scanner, computer and printer in my office. I rarely use the college one”. (*Interview #3*)

Internet

The faculty interviewee stated that he uses both the computer laboratory at the university but mostly the Cyber Café. Similarly, the students access Internet at the laboratory and also in their work places and cyber cafes. One student interviewee stated the following “I access internet both at my office and in the university library. I can only access information materials like journals at the library because such are not available even with internet at the office”. (*Interview #2*).

On the same issue, the librarian indicated that their institution is able to access internet through KENET - an organization that links public universities in the country and through that, they are able to access E- journals.

Challenges in Accessing Information Resources

The challenges encountered in accessing information resources mentioned during the interviews by faculty and students include among others: a lack of time to search for information resources, unreliable internet at the campus and cost incurred for Internet access at

cyber cafes and a lack of awareness of available or accessible information resources in the specific fields of study. However, it is worth noting that some interviewees indicated that accessing information resources was not a problem to them; it was more challenging to balance work and studies. Some students had this to say: “managing time between studies and work is a challenge. You have to make a balance. You work and satisfy your employer and you study and pass your exams. Secondly, sometimes you find the connection goes down. In fact, we do experience downsize sometimes” (*Interview #2*). Another student interviewee stated that “we do experience problems sometimes. You may find an article with a certain title but the whole article is inaccessible. You may only be able to view the abstract”. (*Interview #3*).

Nevertheless, one interviewee mentioned that it is not a challenge to obtain information resources. This is what she stated “I’d say that it’s okay. Most lecturers give us handouts since they are aware of the problems we have, most will give us the reading list but in book formats. They give us handouts as photocopies. Some books you find are expensive – two or three thousand Kenya shillings and accessibility in terms of purchasing is hard, so we do a lot of photocopying” (*Interview #4*).

The faculty interviewee had this to say on the issue; “The first thing is that, some of the refereed journals require you to have certain access. Some of these have the most current and very pertinent information. We can’t get access because most of them require the university to have registered. Secondly, it becomes very expensive to search for this information on your own in the cyber café for long periods of time or when you use your personal computer, you use a lot of money to pay for internet. So you have a problem of time and money. These are the most limiting factors”. (*Interview #1*).

When asked if the students and faculty utilize library services, the librarian indicated that they did but not as they should. She stated the constraints of: lack of awareness of what the library subscribes to, and that of few computers as the reasons to why the library was not being used as it should by the faculty and students. She had this to say; “we have few computers in the

library, just about 12 computers for accessing e-journals against a student population of about 2000. So, even if we bring awareness, how many of them will be able to use them in a day?" (*Interview #5*).

Views on Improving Access to Information Resources

On their opinion of improving access, the faculty interviewee indicated that faculty should be given support by the institution in terms of more subscriptions to electronic resources and through provision of easy access to facilities such as computers and internet. He further suggested that faculty should be encouraged to carry out research and be more productive. In the interview, the faculty interviewee added:

I am thinking we have a long way to go in terms of enhancing scholarship at the university. The institution should provide motivation to carry out research. Secondly, the university needs to come up with a system where all faculties and departments are engaged in research business. It should keep funds aside for research and have a reward system where those who engage in serious research and those who contribute important research findings that enhance the status and image of the university are refunded through direct promotions and other forms of reward. It's the only way to enhance innovation - through appreciation (*Interview #1*).

On the same note, the students acknowledged the need to improve the technological capacity of the institution through expansion of the computer laboratory and provision of wireless internet connection at the campus, to be accessed by faculty and students with personal laptops. One interviewee also noted that students should air the matter of improvement on facilities to the administration since being silent may be a sign that they are comfortable with the situation as it is. Some student responses are as follows:

If the university can acknowledge that we have shifted from using print books to accessing books on the net and then giving a priority to Information Technology (equipping the library etc.) because it looks like the university has not ideally switched to it we are still using old technology of print books and sometimes the books are not there. The university should think of switching. Students should also air the matter. I am not sure if the students are doing anything to demand for more facilities. Most postgraduates are part time and so they come in the evening and have no time to air their grievances or problems. Maybe it is actually that students are not doing their part

and it gives the impression that they are comfortable with what is provided (*Interview #3*).

Another student interviewee noted that:

The institution should provide Internet everywhere in the building. With WIFI, many people with personal laptops can access internet anywhere in the building, without relying on the library or computer laboratory which are too small compared to the number of students (*Interview #2*).

4.2.2.3 Collaboration

This section presents results of the interview responses from interviews with the faculty and librarian of the Nairobi Campus about the nature of collaborations that exist at the institution.

Faculty

On collaboration, the faculty interviewee indicated that faculty especially those teaching similar courses at the Moi University main campus interact minimally and informally, usually at the beginning of a semester to discuss about the course. He commented the following on the issue:

Before we teach the course, we interact with the person who teaches the course in the main campus. And that is actually the point where we interact. After that, there is very little interaction unless you have an opinion you find important. You may call them and interact (*Interview #1*).

Library Collaborations

The librarian indicated that through KENET (Kenya Education Network Trust) a national research and education network that promotes the use of ICT in teaching, learning and research in HE institutions in Kenya, they are able to access internet. She further added that they have collaboration with other universities where they pay collaboratively a subscription fee to access certain databases such as JSTOR, BLACKWELL, EBSCO and EMERALD. Apart from that, the librarian added that, they carry out the usual interlibrary lending.

However, she admitted that the service has gone down and only in special cases do such requests come. She stated the following:

...Not very regular – not regular at all. After having e-journals, most of those requests have really gone down. I think users are able to get a lot from the Internet. Unless in very specialised cases. In addition, our students are allowed (through library collaboration) to use Nairobi University library without restrictions hence no need of borrowing on their behalf if they can read it in house (*Interview #5*).

Views on Collaboration

The faculty interviewee was asked his views on more collaboration among fellow faculty. He indicated that collaboration was essential for the university to be more coordinated but also for sharing ideas and resources, since teaching methodologies differ from one person to another. An extract from the interview is as follows:

It is essential so that you move in the same direction and do the same thing at the same time. Without any collaboration, there seems to be a huge barrier. Teaching methodologies vary depending on who is teaching what. But with collaboration, you ensure that the same information is dispatched to students so it helps to coordinate things (*Interview #1*).

4.2.2.4 Open Educational Resources

This section presents responses from the librarian, faculty and students about their familiarity with OER and views of its adoption at the institution.

Familiarity

The faculty interviewee and librarian indicated that they were not familiar with the concept of OER. All the students selected as interviewees had earlier indicated that they were familiar with the concept of OER. In the interview, they were asked how they got to know about OER and if they have interacted with any OER.

From their responses, the concept was not clearly understood by all the interviewees. Some of them actually confused OER with distance learning. For instance, one interviewee stated the following:

I came to learn about it when I was trying to enroll with Kenyatta University because they have that programme. I discovered that Moi University does not have that kind of programme. After consultation with family, I was advised that it is better to attend classes. Otherwise, I was for the idea of the Kenyatta university programme (*Interview #2*).

Another example from the interviews to further indicate that the concept was taken for distance learning was as follows:

Well, I think it is becoming quite popular amongst the universities here.....well, I think they have launched officially at Moi, They call it ODL (Open and Distance Learning) or something like that. It's within some certain departments and if you are within the campus, you can access it but not to the other students. It is on a trial basis.....you can be able to access a course on the platform. It's only open to those who have registered for that course. If not, you cannot access it (*Interview #4*).

Views of OER Adoption

A short explanation of the concept of OER was given to the interviewees to make the concept better understood to those who had an idea of what it was and those who appeared to confuse it with other concepts such as E-Learning, and to familiarize the others who were not familiar with the concept. They were then asked to give their opinions on the adoption of such an initiative. All interviewees indicated that OER would be very useful at the campus since it would enable an increase in available avenues of information resources. Some student responses were as follows: “it is okay because there is a thirst for information. So long as it can provide helpful information, I think it is useful” (*Interview #2*).

Another respondent noted:

It will assist the learner to get the required information about the course because sometimes you may not be able to attend full classes because you are working and studying. You can be able to read even in office etc. you are able to utilize your breaks well with learning while at work (*Interview #3*).

On the other hand, the librarian indicated that it would be very beneficial to the satellite campuses which are experiencing continuous expansions and are not as developed as the main campus in terms of facilities, for instance the library. The librarian's response was as follows:

It can help a lot especially in satellite campuses. The expansion is of course denying the satellite campuses some facilities and resources and I can tell you that the library is one that is worst hit. Because programs are started left, right and centre, you have to go there and establish a library and you can imagine doing so when courses are running. Such an initiative can go a long way in helping us (*Interview #5*).

All the interviewees commented that adoption of such a programme would not come without its challenges. The challenges mentioned include copyright issues, funding and technology. One respondent said: "I think it needs a lot of funding. If the management does not understand and appreciate, then it may not work" (*Interview #3*).

Two other student interviewees mentioned the issue of technology: "There will be need for qualified personnel and technical staff in order to reduce any shortcomings with the infrastructure" (*Interview #2*). Furthermore, the other added that, "It is limiting to some students who do not have access to computers or technology and hence, they may not be able to access the materials" (*Interview #4*).

The above information was related with the experiences of faculty and students of Moi University Nairobi Campus in accessing information resources for teaching, learning and research. OER experts were given this background and asked if an OER initiative was useful and applicable in this context. The data presented in the following section is what they indicated during my interviews with them.

4.3 Presentation, Analysis and Discussion of Data: Responses from OER

Experts

The first and second research questions in this study were “how are OER appropriate in Moi University and how can they be adopted to enhance access to teaching, learning and research information resources” and “how can faculty inter university collaboration be enhanced through OER adoption in Moi University?”

This section discusses opinions of OER experts with regard to these questions. Main issues discussed are the viability of OER in the institution of study, sensitization, quality, sustainability, policies and the roles of stakeholders notably the faculty staff, librarian, students and administration. Since most of the interview discussion with the experts was based on the case institution, there will be occasional references or mention of data from the first part’s analysis.

As stated in chapter three, interviews were carried out with four experts one from the United States (MIT), the second from the UK (Open University), the third from South Africa (University of Western Cape) and the fourth from Canada (University of Toronto). All experts were professionally recommended.

4.3.1 Viability of OER: Is OER Appropriate and Useful for Moi University?

From the previous data, when asked about adoption of OER at the institution, all the student and faculty respondents and interviewees, together with the librarian agreed that it would be a wonderful idea and they would support it.

In addition, given the general background and circumstance of the case under study, there was a general consensus from the OER experts interviewed that OER adoption is viable and could

be useful and applicable for the case, **if** the stakeholder's, and especially the management and faculty found value of engaging in an OER initiative.

4.3.2 Applicability of OER In Relation to Various Issues

This section discusses the applicability of OER at Moi University Nairobi Campus in relation to aspects of awareness raising, availability, quality, sustainability and intellectual property rights.

4.3.2.1 Sensitization and Awareness Raising

All the experts interviewed indicated that the first step in making an OER initiative work is to get the faculty and institution administration acceptance since without their support, such an initiative is likely not to succeed. They must give a thought at the value that openness adds to the institution. One expert indicated that:

The real task to get OER work and useful is to get the individual faculty and the institution to accept it as a viable way for improving their teaching and learning practices and possibly, their research practices.....without that type of acceptance right from the individual faculty to the institution, I do not think you will get very far (*Interview #2*).

However, the same interviewee argued that the first to be convinced about OER should be management. He indicated that no matter how many people you got on the ground to support it and the management is not convinced, then it would be wise probably not to bother. He added that "It does not mean it should be a top-down approach but really, management must be able to understand the value it brings". In further support of this, another interviewee indicated the following: "I think for the faculty and administration, it is important to give to a real strategy about whether openness gives sense to their university or not..." (*Interview #3*)

The previous data from the case institution also indicated that most faculty were not aware of OER and the students who indicated familiarity, confused it with distance learning. In relation

to this, the experts suggested that awareness raising and sensitization should be more focused at the level of faculty and administration since it is likely that students may not really make a distinction between OER and other kinds of resources. In addition, they suggested that sensitization should be started with those that are already aware and those who are willing. In other sense, it's wise not to try and convince those opposing the idea. Let the good example pull the others. One of such response was as follows:

There is a growing consensus on this in the OpenCourseWare consortium - general awareness raising is not the most efficient way to get an OER project off the ground. it's best to start with those already (partly) aware, motivated and passionate (the "champions") and give them a lot of attention and support, then let the good example pull in others, stay away from those opposing the project - don't try to convince. However, you need at least one person in senior or middle management who supports the initiative - doing it as a pure grassroots effort is much more difficult (Interview #4).

4.3.2.2 Finding OER: Availability and OER

In the previous data from the case, it was evident that faculty accessed more OA journals than they did with other kinds of resources. The experts indicated that there were numerous resources out there that were open and could be accessed or/and adapted according to need by faculty, including, as one indicated, the OA journals. The resources could be used and would be a good way to start off such an initiative in such an institution. These results of the use of OA by faculty could be used as an example of how openness and OER are capable of improving/increasing availability of information resource access at the institution. One of the responses was as follows:

There is a growing amount of materials in the Directory of Open Access Journals (DOAJ) and I think one way would be to make awareness to faculty and students about the already existing resources and journals whether they want material for research or for teaching in class... (Interview #1).

In connection with this, the librarian was viewed as a possible link or steward to such resources out there. One expert indicated that, “librarians are often hesitant because they feel OER and the internet will lower their relevance, when in the contrary it increases it” (Interview #4). The librarians could help navigate the vast amount of open information that is

already available and make it known and available to faculty and students. The library on the other hand could act as physical access of such materials or as a good location to house and locate mirror sites if the institution has any.

4.3.2.3 Quality and OER

One student respondent in the previous data analysis was skeptical about quality of OER resources. As discussed by experts, quality in both what is produced or consumed by an institution can be ensured by a variety of ways. Using resources from reputable institutions or repositories, and utilizing the librarian or faculty to sort resources are among such ways. On the side of publishing resources, since the materials are going to be published and accessed online by the public, faculty will try as much as possible to ensure that their material is of good standard. An expert noted: “The faculty could choose the material for students, just as they would recommend a text book using their professional knowledge....” (*Interview #1*).

Another expert indicated that:

Some ways to address this is the use of reputation of involved institutions - MIT, Yale, Stanford - especially those relevant to the academics you are speaking to, and secondly, help identify a few high quality resources. if you can involve a librarian in this, that's most useful as they are used to this kind of work and are often working with academics already (*Interview #4*).

In relation to publishing resources, one expert indicated that it is best to publish materials just as they are created (in their original formats) to avoid additional costs which might not be necessarily available.

4.3.2.4 Intellectual Property Rights Issues

The previous data from the case indicated that there was a certain fear to publish material online publicly since other institutions might copy that and use it for commercial purposes. According to the interview with the librarian, it is for this similar reason that passwords to online databases were not given to students and faculty to use outside the institution.

One expert indicated that a reason for this could be partly due to a greater premium of materials where probably there is scarcity of materials unlike in the developed world where there would be more gains by opening up materials and having greater numbers register for the courses. Nevertheless, he added that there are ways the institution could intervene on this by using licenses that make the act unlikely. Such licenses like the CC BY SA. The expert further added that, for it to be effective, it should be taken up from an institutional level and not individual. This was further supported by another expert who indicated that a Share Alike (SA) license forces commercial users of your work to use a similar license. The expert said: “Use open licenses that make this impossible or very unlikely, for example CC BY SA. The SA (Share Alike) option forces commercial users to also license their work openly...”
(Interview #4)

4.3.2.5 Technology Issues

The previous data revealed a wanting technological state of the case institution but at the same time, a variety of alternatives that the faculty and students use to access either equipment or internet for information resources. What came out clearly with the expert interviews was that, even if technology acts as a facilitator in advancing OER projects, it is not always a must and given the situation of the campus, what is already there can facilitate such a project, this is not indicating that the situation should not be improved. One expert had this to say:

I think it's important that when you are thinking of OER, you are not just thinking about technology and being online. A lot of successful projects are also working on the printed versions. The good thing about OER if they are constructed well, it's possible to have them in other formats.... If there is a systematic central place organizing for printing copies...The library and the librarian might be the ideal people to do that
(Interview #2).

4.3.2.6 Sustainability Issues

All the expert interviewees agreed that financial sustainability remains a big issue within OER. They further agreed that each institution, depending on the worth they place on OER, will take different options or combination of options to ensure financial sustainability of their projects.

What was more visible in the interviews though was that, dependency on funding is not a long term solution and is a poor long term incentive for engaging in OER. Some examples of their responses were as follows:

Money is a poor long term incentive / as funding dries up, so does involvement. What is more useful is to identify how OER can truly be part of what academics are already doing, or provide an immediate benefit to them, and then put in place mechanisms that makes sharing easier (Interview #4).

Another expert further commented that “for many universities, integrating OER in their processes turns out to be very beneficial so it becomes part of the university to support...” (Interview #3). One other interviewee gave an example that in North America, some universities support OER projects with their own budgets since they argue that they get much more benefits in opening up to the public such as more student enrolments. He noted that:

In North America, many of the universities argue that, it is worth spending money on it because they get a lot of other benefits. For instance, advertising. A lot of students will say it is really great because they can see what the universities offer (Interview #1).

4.3.3 Collaboration and OER

The third question in this study sought to answer the question of how OER can be used to enhance inter and intra university collaborations.

One expert indicated that anecdotal evidence suggested that participants in OER projects are more inclined to collaborate with colleagues within their institutions. Given the situation of the case institution, where a satellite institution of a main university was offering similar courses, the experts agreed that collaboration was important, not necessarily involving sharing everything or not just in the production of core materials but in bringing about a different perspectives of concepts or different cases around similar concepts, which allows for greater intuition. One expert noted that:

“...It’s about using the material for a common base because it has licenses on it that allows you to adapt it. You will be in a good position to change it. Having a proper

collaboration in discussing the exam, curriculum and to have a common understanding of what faculty is trying to teach, not necessarily sharing everything (*Interview #2*).

The experts raised the issue of collaborating with institutions or faculty beyond their own from the region or on a global range if it is beneficial for the involved parties. The issue of consortiums was also raised since participating in the consortium helps get interesting opportunities for collaboration and also to keep abreast with developments in the OER movement.

4.4 Part Two: Discussion and Relationship to Literature

The first question that this study sought to answer was: “How do faculty and students in Moi University – Nairobi Campus access and share teaching, learning and research information resources?” This section discusses data presented in the first part of this chapter. Discussions will be done according to the themes and of access, collaboration and OER and their subsequent subthemes.

4.4.1 Background Information

Both survey and interview data revealed that most students are studying and working and they attend their classes in the evenings. The results also indicated that most faculty staff was engaged elsewhere apart from Moi University, Nairobi Campus. This can explain why the faculty complains of the lack of time to search and locate information resources and to conduct research.

4.4.2 Access to Information Resources

The results above both from the survey and interview data from the case indicate that both students and faculty access information resources from a variety of sources. Students tend to use the institutional library more than the faculty staff. This could be explained by the fact that, students visit the library at times to read from there and in the process, may find the necessity to search or look for information resources. Furthermore, the databases that the

library subscribes to can only be accessed in the library and therefore, this necessitates anyone willing to use them to visit the library. As stated above, most of the faculty staff is engaged elsewhere and they are mobile. This may hinder them from constantly visiting the institutional library. Nevertheless, the faculty statistics showed that they use OA journals, others (personal library) and colleagues most to access information for teaching and research. This may be due to the fact that since the library databases are not accessible outside the library, the faculty staff accesses Internet elsewhere as indicated in the cyber café, and is able to access the OA journals related to their fields. In addition, they probably have already acquired personal books with time in their field of teaching and refer to them at their own convenience. The institutional portal seemed not to be very popular. On exploring the Moi University website, the portal that is available – Chisimba, is used for e- learning and requires a log-in. Hence, it may not be very relevant for normal taught courses and students may not be able to go through to access any materials.

The results also showed that both students and faculty staff seek access to a wide range of material, most obviously books and journals but also newspaper articles. This is probably so because, as one student respondent indicated, the faculty provide students with a reference list of mostly books that students could easily access in the library or make copies of relevant chapters, hence 100% of students access them for learning and research. Journal articles are popular especially with the faculty probably because it is an avenue to obtain current developments in their fields of teaching.

Students access information resources from a variety of alternative places including their offices at work and other university libraries. Due to a collaboration that exists between Nairobi University and the Moi, Nairobi Campus, it is possible that students use the library in Nairobi as an alternative when they cannot find the material they require in their own institutional library. The work place is probably a point where they access Internet for electronic resources, and also since some respondents were employees of the institution, their

workplace is also the case institution where they access information resources. Student statistics indicated that they use their work places most for internet access.

All faculty staff and students used internet to facilitate information access for teaching, learning and research. The faculty popular places for internet access were the cyber café, and the institution, followed closely by their own subscription. This is most likely because of their mobile nature and hence they visit the cyber café when they are not in the campus, the institution to access subscribed databases. Others find own subscription reliable and convenient due to this immobile nature. The students on the other hand indicated the workplace, university and cyber café as the places from where they accessed internet.

As noted earlier, most of the student respondents (9 out of 10) are working and studying and hence they may probably have access to the internet at their work places and are able to use that for accessing the information they need for learning. The issue of few computers, approximately (1%) of the student population, which are also shared with faculty staff, may also be a factor that renders both the students and faculty staff to seek cyber cafes for accessing internet. In addition, since some respondents reported internet breakdowns, the cyber café may be used as an alternative in the case of an urgent need for information. The respondents' and interviewees' barriers to information access could be categorized as follows:

- a) Technological
- b) Awareness and discovery of online resources
- c) Insufficient resources at the institutional library

The access barriers described in this study are not unique. A study commissioned by the Research Information Network (RIN) (2009) in the UK to examine the barriers researchers encounter in accessing the information required for their research as well as their approaches to overcome them indicated that unavailability of particular volumes or back files, a lack of

library to purchase license content that they required, and technical limitations - one being unable to have off site access especially for researcher's who spent time away from their institutions, as some of the barriers to accessing research information.

Faculty and students' views on how to enhance their experience of access to information resources can also be categorized broadly as follows;

- a) Improving the technological power at the institution.
- b) Administrative support.
- c) Training on literacy for discovery and awareness of resources.
- d) Increasing resources provision by the library.

As a general note, the faculty interviewee in this study summed up the issue of access to resources by saying that:

Teaching is encouraged by learning. When faculty constantly learns, they become better able to teach because they keep renewing the knowledge they have. Contrary to the popular view that it is teaching that influences learning, I think it is learning that influences teaching. Learning is a lifelong process and faculty must be able to know what is going on, most recent findings and to also establish their own views and opinion on the current affairs in the field of what they teach, when they keep learning, they become better able to teach. Information access becomes the most vital thing to enhance this. If you are not accessible to information, then you can't learn. You can't learn what you cannot get".

4.4.3 Collaboration

Faculty staff indicated that they shared information material with fellow faculty and they also shared with students by giving them handouts/print outs of chapters and articles they found relevant and useful for their courses. When asked if they had a Learning Management Platform where they could distribute course work and assignments to students at the institution, all the 8 faculty respondents indicated that they did not. They further stated that they distributed coursework, assignments and examinations as print outs, face to face/word of

mouth and sometimes by email. The views of faculty staff when asked about collaboration to share information resources were positive. They indicated that collaboration should be encouraged especially at their institution where the same courses were taught in different campuses and as one interviewee commented, it was essential so that they moved in the same direction and did the same thing to ensure that the same information was dispatched to students which would ensure better coordination. This idea of collaboration is supported by Roseth, Garfield and Ben-Zvi (2008) who state six main benefits of teacher collaboration as follows; First, it helps to accomplish more and at a higher level than working alone through production of better instructional materials, assessments, and teaching techniques by building on the diverse backgrounds and experiences of the teachers collaborating. Second, collaboration promotes reflection on teaching by verbalizing and justifying what each believes and practices. Third, collaboration can motivate and support those involved in making changes that may be daunting to try on their own. It can provide a supportive environment to reflect on these changes and move forward, rather than abandoning efforts when they are not immediately successful. Fourth, collaboration provides a mechanism to develop and maintain a level of consistency from section to section within the same course. For example, collaboratively developing and using a common syllabus, teaching materials and assessment materials facilitates consistency. Developing these materials as a group also encourages discussion about what is important for students to learn, thus ensuring a tighter link between instructional objectives, curriculum, and assessment. Fifth, collaboration provides a sense of community: Working together towards a mutual goal also results in emotional bonding where members develop positive feelings towards each other and commitment towards working together. The authors quote Rumsey (1998) who notes that discussions and group decision making about teaching, testing and grading, as well as soliciting and providing feedback to peers, creates an atmosphere of teamwork and community that can improve and enhance the work environment and job satisfaction. Finally, sixth, collaboration provides support and guidance for new teachers: New instructors can benefit from the support, ensuring a more positive beginning to their career. (p. 9-10)

Afterall, it is through such collaboration and sharing that Communities of Practice are enhanced. Wenger (1998) states that in pursuing their interest in their domain, members

engage in joint activities and discussions, help each other, and share information..... They build relationships that enable them to learn from each other. Wenger further adds that having the same job or the same title does not make for a community of practice unless members interact and learn together.

4.4.4 Viability of OER.

There was a general consensus that OER would be beneficial to Moi University - Nairobi Campus. It would play a key role in making resources more available, accessible and adaptable to the faculty and students for the purposes of teaching learning and research. Such an initiative would also probably enhance greater collaboration among faculty in the institution and beyond. Nevertheless, what is clear is that the institution must support the initiative and see the worth of it without which it will be an effortless exercise. This is supported by Geser (2007) in the discussion of the Open Educational Practices and Resources, OLCOS Roadmap 2012, who indicates that OER are among potential enablers of the shift towards competency-based and learner-centred education in the knowledge society but only if educational policies and organizational frameworks empower teachers and learners to make good use of such resources (p. 17).

4.4.5 Sensitization and Awareness Raising

Awareness raising and sensitization was considered as an important aspect that will make OER initiative be known and especially so in such a case like Moi University, Nairobi Campus where many respondents were not familiar with the concept.

The issue of attitude and willingness to share by faculty was mentioned. Earlier data indicated that though the faculty who published did it in either exclusively in commercial journals or a mixture of commercial and OA journals, none published in OA journals exclusively. Therefore, awareness raising and sensitization would involve making them understand the need for openness in sharing and publishing their materials, proper communication and clear elaboration of any implications. A case study research conducted in Johns Hopkins University

- Bloomberg School of Public Health in October 2006 for the OECD – CERI report on *Giving Knowledge for Free – the Emergence of OER* raise the issue of communication about the OpenCourseWare project and hesitance form the faculty due to concerns about the possible misuse of content and the potential for misunderstandings because of the lack of an appropriate context for the material as deterrents to willingness of faculty to publish their materials openly. (<http://www.oecd.org/dataoecd/61/1/37647913.pdf>). A similar research in Stockholm Institute, Sweden indicated the fear of resources being used improperly and the uncertainty of the quality as the hindrances for not sharing the resources openly. (<http://www.oecd.org/dataoecd/60/63/37648029.pdf>)

4.4.6 Intellectual Property Rights

The results of this study are similar to those of a case study research conducted in Athabasca University, Canada in May 2006 for the OECD – CERI report on *Giving Knowledge for Free – the Emergence of OER* indicated the hesitance and extremely cautious behaviour exhibited by the university at putting material openly for the public because of a concern about the protection of its assets from the competition. (<http://www.oecd.org/dataoecd/61/45/37647739.pdf>)

The issue of Intellectual Property Rights in OER initiatives can be considered an institutional issue whereby the institutions puts in place policies that would not prevent open licenses from being used and assumes legal interventions in the case where their materials are used unfairly for commercial purposes against what the licenses state.

4.4.7 Collaboration and OER

Collaboration was considered an important aspect especially for this institution but also beyond. A proposition put forward by Mulder (2009) and Keats (2003) indicates that a collaborative model of content creation can reduce costs and as such are often an option for small institutions with limited resources. The rationale behind this proposition is that economic benefits of collaborative model of open content development stem from two inter-related processes, collaboration and reuse.

In this study, the role of the librarian in linking existing OER with faculty and students in this case was considered high. This idea is also supported by Singh as follows: “The educational climate is experiencing a paradigm shift that is familiar territory to the librarian. The librarian as a key initiator in connecting patrons with resources is in a unique position to give leadership to the Open movement, which includes Open Educational Resources, Open Access and Open Source” (Singh, 2008, p. 2).

To wrap up the discussion, table 5 below summarizes the characteristics of OER, following the 4A framework discussed in chapter two, that contribute not only to enhancing access to resources, but also to the achievement of the human right to and in education. These characteristics have also been presented and discussed in the analyses with the experts.

Table 5: The 4-A Conceptual Framework (Adapted from Tomasevski 2001, p. 12)

It indicates the Rights “To” and “In” Education and the role of OER)

Type of right	Dimension	Example (s)	Role of OER
Right to education	Availability	-Fiscal allocations for schools and teachers	-Increased availability of resources for educators, students and self learners. -Increased availability of resources for both formal and informal learning
	Accessibility	-Elimination of legal and financial barriers, financial obstacles and discriminatory denials of access. -Elimination of obstacles to schooling (distance, schedule)	-Reduced costs for resources both as electronic or print versions Increased accessibility of resources in all parts of the globe. (No geographical restrictions due to the nature of openness of resources)
Rights In Education	Acceptability	- Parental and adult choice - Minimum standards (quality, health, environmental) - Language of instruction - Freedom from censorship - Recognition of learners as subjects of right.	- Provides variety of choices to choose from depending how best they meet the user/ institution need. - Provides variety of repositories to chose from depending on which the user/institution feels has more authority
	Adaptability	-Minorities, disabled, travelers, migrants, workers and indigenous people.	- Ability to create and adapt content to suit special needs depending on the choice of license and technology.

4.5 Conclusion

This chapter presented, analysed and discussed survey and interview data from the case institution, Moi University Nairobi Campus and interview data from OER experts. The major themes of discussion were access to information resources, collaboration and OER. The results of the data analysis from the case institution indicated similarity in survey and interview data. This was also evident for the observable features noted during the pre study visits done by the researcher. The discussion was done using relevant literature for any similarities or differing opinions.

The results of the data analysis of the case institution indicated that faculty and students required and accessed information resources from a variety of sources including their own institutional library. They all accessed internet for information resources and though the institution did not sufficiently provide technology support to cater for its population, the faculty and students had alternative ways of accessing computers and internet.

The data also indicated that collaboration at the case institution with other institutions of Moi University exist, though minimally. Respondents agreed that more collaboration should be encouraged not only within Moi University institutions but also beyond.

It was obvious that OER is not a clearly understood concept at the case institution. Nevertheless, it was a welcome idea by the interviewees of the institution. The experts also indicated that it would be a viable project at the institution to enhance teaching, learning and research. However, they all agreed that the most important aspect was to have the institution see its value. Otherwise, it would be worthless effort to try and force the idea.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This thesis work began with an introduction of the big picture of the study, pointing to the global increased demand for education and narrowing this to the Kenyan context. The first chapter highlighted the role of quality HE to the production of qualified human capital that is needed for the knowledge societies and the need for access to information resources in the HE sector to facilitate its mandate of teaching, learning, research and service to community. The concept of OER was introduced and the potential they hold in advancing this mission of HE through their availability, accessibility, acceptability and adaptability was indicated. The institution under study was briefly described and the statement of the problem that led to the research being conducted was described. Finally, an illustration of the purpose, objectives and questions of the study was provided.

Chapter two explored literature around the themes of access, HE and OER with greater attention focused on OER since this is a proposal the researcher is making for the case institution under study. Previous studies and literature around it were discussed giving linkage to the concepts of OER that relate to the 4A conceptual framework of availability, accessibility, acceptability and adaptability of education, adopted due to its relevance in the study, to guide the researcher in the discussion of the OER concepts.

The third chapter on methodology focused on the procedures engaged in while collecting data and justification of the research direction taken.

The fourth chapter involved presentation, analysis and discussion of data collected from the various categories of sources. Discussion involved relation to previous literature in the field.

Having said that, this chapter provides conclusions that can be drawn from the findings of the study and presents recommendations based on these conclusions. The recommendations are drawn based on the respondents' suggestions and suggestions derived from the literature reviewed in chapter two. The chapter is structured in four main subheadings. In the first, for every research question, the conclusion that can be drawn from the data findings in chapter four will be indicated. In the second, the conclusion that can be made from the statement of the problem will be indicated giving way to the third session where recommendations will be made in relation to these conclusions. Finally, arenas of possible further research will be indicated.

5.2 Conclusions about Research Questions

This section will present conclusions drawn from the research questions of the study. Each question will draw conclusions from the relevant themes and subthemes analysed in chapter four.

5.2.1 Research Question One

The following are conclusions that can be drawn from the question “how do faculty and students in Moi University – Nairobi Campus access and share teaching, learning and research information resources?”

5.2.1.1 Sources of Information Resources Used

From the study, it can be concluded that both students and faculty use a variety of sources to access information resources. Nevertheless, students use the institution library more to access information resources, either as print or electronic from the subscribed databases. Faculty on the other hand, uses their personal libraries and OA journals more than the library or any other source.

5.2.1.2 Formats of Information Resources Accessed

It is clear from the results of the study that, print (in the form of books) is the most popular format of accessing resources to both students and faculty. Electronic resources such as journal articles are accessed and often printed out for distribution or further reference. Video and audio are not popular formats accessed and used for teaching and learning.

5.2.1.3 Technology Availability

Unlike the faculty staff, most students are accessible to computers when they require them. If not from the institution, they can easily access them at their work places. The same case applies for Internet access. Nevertheless, printers are not always accessible while scanners are rarely accessible.

5.2.1.4 Sharing Teaching and Research Resources

The study results have shown that, about half of the staff has published academic works either in commercial or OA journals. Further, faculty staff informally shares teaching material with each other and with faculty of Moi University main campus.

5.2.1.5 Challenges of Accessing Information Resources

Among the main challenges that came out in the study from both groups are: lack of time to search for resources, unavailability of required resources and restriction of access (unpaid subscriptions or/and restrictions for access outside campus).

5.2.1.6 Views of Improving Access to Resources

The most common views gathered from both groups in the study on improving information access include: increasing library subscriptions/holdings ensure stabilized internet connection and increase the number of computers. From the faculty data, it can also be concluded that,

there is a need to work more collaboratively at departmental levels to ascertain information needs and ways of meeting them.

5.2.2 Research Question Two

The following conclusions can be drawn to answer the questions: “how are OER useful in Moi University and how can they be adopted to enhance access to teaching, learning and research information resources?”

5.2.2.1 Usefulness of OER at Moi University

It is evident that both faculty and students are not quite familiar with the concept of OER. Nevertheless, from their challenges and suggestions of how to enhance their experiences of information access and also from the experts’ opinions, OER are useful for Moi University, Nairobi campus. They provide an opportunity to increase the institutions’ available sources of information at minimal or no costs. The open nature of these resources allows them to be used and adapted to suit the needs and contexts of the users. Nevertheless, “even given its potential advantages, OER is not likely to completely displace traditional materials..... it will coexist with traditional materials, just as totally online educational institutions will coexist with more traditional ones as well as with blended ones using both face-to-face and online education — just as online stores compete with physical ones as well as those that have evolved to use both bricks and clicks” (CED, 2009, p. 20).

5.2.2.2 OER Adoption

From the faculty interview data in chapter four, it can be concluded that if any OER uptake is to succeed, the value of it must be realized by management and faculty staff. “OER that is not demand driven is unlikely to have a substantial impact or to be sustainable over time” (CED, 2009, p. 23). The librarian is an important anchor in facilitating the finding of appropriate OER resources that already exist freely on the internet. The librarian together with faculty staff can be used to ensure quality in terms of the OER materials selected for use at the institution. OER adoption in this institution does not necessarily require everybody to be

accessible to computers or internet. OERs can be accessed in print formats and remotely on the intranet as mirror sites of other institutions' OER like MIT CourseWare upon such an agreement.

5.2.3 Research Question Three

The following conclusions can be made to answer to the research question “how can faculty intra and inter university collaboration be enhanced through OER adoption in Moi University?”

5.2.3.1 OER and Collaboration

It is difficult to draw a concrete conclusion from this question since it did not come out clearly in the study. Nevertheless, the responses from the experts indicate that participants in OER projects are more inclined to collaborate with colleagues within their institutions. It was also clear that other benefits like costs and time of creating materials are saved over time when this is done collaboratively. Moreover, it is possible to bring out variety when faculty staff teaching the same course collaborates to create courseware, whereby different dimensions of the course concepts can be brought in by the different faculty collaborating hence avoiding duplication and enhancing diversity. Nevertheless, more empirical research in this area should be conducted to ascertain how collaboration of faculty in the same institutions works, does it work better when done formally or informally, barriers and benefits of such collaboration and how this happens beyond the institution.

5.3 Conclusions about the Research Problem

The problem statement for this study reads as follows: “Nevertheless, the expansion of universities by setting up satellite campuses is not commensurate to expansion in access to facilities such as learning and research resources since the main campus host the equipped university libraries, thereby rendering the students and faculty unable to access crucial library and learning resources for research. Though there are similar courses offered in the main and satellite campuses, and sometimes, taught by different teachers, there is no a formal

forum/platform where faculty share courseware and other relevant resources for their courses, yet the students are expected to sit the same examinations”

The results from the data gathered indicated that the library has both print and electronic resources. It subscribes to a variety of resources which students use but not as much as they probably should because of a lack of awareness of their existence and limitations of access to only in the library. Nevertheless, it was also clear that the library subscriptions did not cater for all the needs because some respondents indicated that there were few or no materials available from their fields.

The data also indicated that the space in the library and computer laboratory is small to accommodate the current population of students, the computers in the library and at the computer laboratory represent a 1% of the student population, not considering the faculty staff that uses the same resources. Nevertheless, many students can access computers and internet at their workplaces. Further conclusions can be drawn that, faculty staff that teach similar courses in the different campuses of Moi collaborate informally and minimally to discuss issues relating to the course, to share course material and research. Nevertheless, the issue of trust was raised. From these conclusions, this study provides the recommendations below to respond to the problem statement and research questions that the study was set out to enquire.

5.4 Recommendations

From the conclusion above drawn from the research questions and the statement of the problem, the following recommendations can be made.

- a) The establishment of satellite campuses in Kenya such as Moi University Nairobi Campus should be well planned for, taking into consideration student growth. With the demand for university education increasing every year in the country, more innovative ways of catering for this demand should be thought of. The empirical data indicated that facilities at the Nairobi Campus are not sufficient for the numbers that the campus

has at present. The librarian also indicated that the library is one of the most hit departments in terms of resources and facilities when satellite campuses are being set up, hence the need to consider growth when planning for expansions.

- b) From the empirical data, the institution has not embraced openness in terms of sharing information resources. The institution should embrace and promote openness to greater extents in order to experience more benefits associated with it. Hence there should be policies that promote rather than hinder openness. As Wiley and Hammond puts it, Openness is the fundamental value underlying significant changes in society and is a prerequisite to changes institutions of higher education need to make in order to remain relevant to the super-system in which they exist. They indicate that “Individual faculty can also choose to be more open without waiting for institutional programs. No single response to the changes in the super-system of higher education can successfully address every institution’s situation. However, every institution must begin addressing openness as an organizational value if it desires to both remain relevant to its learners and to contribute to the positive advancement of the field of higher education” (Hilton and Wiley, 2009, p. 13-14).

- c) Institutional policies should consider reward systems that provide recognize faculty who are innovative and contribute useful research in their fields. The universities are created with the mandate to carry out research and serve society. Research and innovation should therefore be encouraged and given priority. The empirical data indicated that faculty of this institution lack the motivation and support to conduct research, hence the need to consider the issue of staff motivation.

- d) Moreover, there should be clear policies on coordination and collaboration of the different campuses if they have any common systems. Without such coordination, there are bound to be unnecessary duplication of work and creation of a chaotic environment.

- e) Creating institutional repositories that are open – the institution should establish digital repositories where electronic copies of the research are deposited into the repository and identified using standardized metadata to facilitate search and use. A good starting point could be the post graduate student theses and dissertations, viewed as the “low-hanging fruit” since it is easy to obtain them for instance, by making it mandatory for students to submit them in that format. The librarian confirmed that they only receive such research work in hard copies and that they are only accessible in the physical library. Therefore, they are not available to the general public easily.

- f) Improving the technological power of the institution by provision of more computers, printers and other equipment and ensuring reliable Internet access at the campus.

- g) Creating awareness programmes at the institution to make the students and faculty know what they are able to access from the library. In addition, training faculty and students in the use of technology in searching for information resources. This was also indicated in their responses in chapter four on their views on improving their experiences of accessing information. This brings out the importance of the librarian in playing a key role not only in training the users in information literacy skills but also in identifying resources for them. She/he should be apt and proactive in looking out for such opportunities and developments that may benefit the users.

- h) Initiating an OER project - the empirical data indicated that the idea of OER would be welcome by the faculty and students of the institution. In addition, some experts interviewed were willing to provide expertise support in the event the institution was ready and saw a need for initiating an OER project.

5.5 Further Research

There is a clear need for more research on OER and Africa since there isn't much empirical research from the literature reviewed. What is available is more inclined on enlisting the challenges of education institutions in Africa and the potential of OER in alleviating/ reducing these problems. More case study researches should be carried out because institutions differ in their practices, cultures, management and operations.

The following are some of those areas that more research could be carried out, especially in Africa.

1. Why Institutions are reluctant in engaging in OEP even with their knowledge of OER's potential?
2. What are the motivations and barriers/challenges to using or/and adapting other people's OER?
3. What is the evidence of best Open Educational Practices around the issues of tools, sustainability, policies and quality assurance in an African/developing world context?
4. What collaboration/partnership models in OER exist?
5. What is the best audience for OER in Africa or for a particular institution? Learners or teachers and why?

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APPENDICES

Appendix 1: Online Questionnaire for Faculty

1. Introduction

Monica Wawira Gakindi
Tallinn University
Karu 17, 72A2 - 10120.
monsgakin@yahoo.com
Mob. No. +37258357440

Dear respondent,

I am a student of an International Master in Digital Library Learning (<http://dill.hio.no/>) at Tallinn University - (Estonia) and an alumni of Moi University, School of Information Sciences. I am currently undertaking a research on "The potential of Open Educational Resources in enhancing access to learning and research information resources in satellite campuses"

This questionnaire seeks to establish the experiences of faculty with regard to access of information for research and teaching at Moi University Nairobi Campus. The questionnaire further seeks to establish the awareness of Open Educational Resources (OER) from the faculty community.

You are kindly requested to respond to the following questions to the best of your knowledge. Data collected will be used solely for this research and will not be used for any other purpose. Your cooperation is highly appreciated.

Thanking you in advance.

Yours Faithfully,
Monica Gakindi.

2. Default Section

Please note that all questions with a star (*) require an answer. You may not be able to submit your results or move to the next page without filling them out.

*** 1. For how long have you been teaching at University?**

*** 2. In how many university institutions have you taught, as a full time or part time lecturer?**

*** 3. Apart from Moi University - Nairobi campus, are you currently teaching at any other institution, on a part time or full time basis?**

Yes

No

If YES, which one(s)?

4. In your professional career, have you published any academic works?

Yes

No

5. If your answer is YES in the question above, where have your works been published?

Commercial publishers

Open Access Journals

Both

6. If your answer above is NO, what is hindering you from writing and/or publishing?

*** 7. In your institution, where do you access information resources to assist you in teaching and research?**

- University library
- Institutional Portal(s)
- Subscribed Database(s)
- Open Access Journals
- Colleagues
- Other (please specify)

*** 8. For each of the above chosen, in a scale of 1-5, where (1) is rarely and (5) is very often, rate how often you use them to access information. [Leave blank the options not applicable]**

	1	2	3	4	5
Institutional Library	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Institutional Portal(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subscribed Database(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open Access Journals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Any other specified(1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Any other specified(2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Any other specified(3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*** 9. What information formats do you use for teaching and research?**

- Books
- Journal articles
- Newspaper articles
- Audio
- Video
- Blogs
- Other (please specify)

*** 10. Which of them do you refer students to for individual learning, assignments or other class work?**

- Books
- Journal articles
- Newspaper articles
- Audio
- Video
- Blogs
- All the above
- Other (please specify)

*** 11. Does your university provide access to information to other university libraries/repositories?**

- Yes
- No

If YES, kindly specify

*** 12. Tick the appropriate tool/equipment that is available at your institution to facilitate access to required information resources?**

- Computer
- Printer
- Scanner

*** 13. How available are the above mentioned tools when you need them?**

	Always available	Sometimes available	Rarely available
Computer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Printer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scanner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Do you access the Internet for the purposes of teaching and/or research?

- Yes
- No

*** 15. From where do you access Internet?**

Cyber café

Home/own subscription

University/Campus

Other (please specify)

*** 16. In a scale of 1 to 5 where (1) is rarely dependent and (5) is highly dependent, indicate how dependent you are on the above chosen options. [Leave blank the options not applicable]**

	1	2	3	4	5
Cyber café	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Own subscription	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
University	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Any other specified(1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Any other specified(2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. Does your university/institution have a learning management platform? (application for the administration, documentation, tracking, and reporting of training programs, classroom and online events, e-learning programs, and training content)

Yes

No

If YES, which one, and for what purpose do you use it?

*** 18. How do you make available to students course material and assignments?**

- Email
- Print outs
- Learning Management System(e.g. Moodle)
- Face to face/Word of mouth
- Other (please specify)

*** 19. Do you have any collaboration with faculty who teach similar courses as you in other Moi campuses?**

- Yes
- No

If YES, explain the type of collaboration

20. If NO, what is your opinion about such collaboration as sharing of courseware and research work with fellow faculty?

*** 21. What challenges do you encounter when searching information resources for teaching and research?**

*** 22. Give your views on how access to learning and research information resources can be enhanced to facilitate teaching, learning and research at your university.**

*** 23. Are you familiar with the concept of Open Educational Resources (OER)**

Yes

No

3. Open Educational Resources

*** 1. Have you interacted with or created/developed any OER?**

Yes

No

If YES, What OER have you interacted with or created?

*** 2. Does your university have any OER?**

Yes

No

I do not know

3. What is your opinion about the adoption of OER at your university as a means of facilitating access to teaching, learning and research information resources?

4. Interview Followup

I am interested in conducting an interview with you for further discussion with regard to the insights you have provided in the questionnaire. If it is okay with you, kindly provide me with your contacts (Phone number – Landline or mobile) and your preferred date(s) and time.

Thank you in advance and looking forward to have a further discussion on Access and DER.

1. Contact details and preferred date and time

5. Finish

THANK YOU FOR YOUR PARTICIPATION.

Appendix2: Online Questionnaire for Students

1. Introduction

Monica Wawira Gakindi
Tallinn University
Karu 17, 72A2 - 10120.
monsgakin@yahoo.com
Mob. No. +37258357440

Dear respondent,

I am a student of an International Master in Digital Library Learning (<http://dill.hio.no/>) at Tallinn University - (Estonia) and an alumni of Moi University, School of Information Sciences. I am currently undertaking a research on "The potential of Open Educational Resources in enhancing access to learning and research information resources in satellite campuses"

This questionnaire seeks to establish the experiences of faculty with regard to access of information for research and teaching at Moi University Nairobi Campus. The questionnaire further seeks to establish the awareness of Open Educational Resources (OER) from the faculty community.

You are kindly requested to respond to the following questions to the best of your knowledge. Data collected will be used solely for this research and will not be used for any other purpose. Your cooperation is highly appreciated.

Thanking you in advance.

Yours Faithfully,
Monica Gakindi.

2. Default Section

Please note that all questions with a star (*) require an answer. You may not be able to submit your results or move to the next page without filling them out.

*** 1. For how long have you been teaching at University?**

*** 2. In how many university institutions have you taught, as a full time or part time lecturer?**

*** 3. Apart from Moi University - Nairobi campus, are you currently teaching at any other institution, on a part time or full time basis?**

Yes

No

If YES, which one(s)?

4. In your professional career, have you published any academic works?

Yes

No

5. If your answer is YES in the question above, where have your works been published?

Commercial publishers

Open Access Journals

Both

6. If your answer above is NO, what is hindering you from writing and/or publishing?

*** 7. In your institution, where do you access information resources to assist you in teaching and research?**

- University library
 - Institutional Portal(s)
 - Subscribed Database(s)
 - Open Access Journals
 - Colleagues
 - Other (please specify)
-
-

*** 8. For each of the above chosen, in a scale of 1-5, where (1) is rarely and (5) is very often, rate how often you use them to access information. [Leave blank the options not applicable]**

	1	2	3	4	5
Institutional Library	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Institutional Portal(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subscribed Database(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open Access Journals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Any other specified(1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Any other specified(2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Any other specified(3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*** 9. What information formats do you use for teaching and research?**

- Books
 - Journal articles
 - Newspaper articles
 - Audio
 - Video
 - Blogs
 - Other (please specify)
-
-

*** 10. Which of them do you refer students to for individual learning, assignments or other class work?**

Docks

Journal articles

Newspaper articles

Audio

Video

Blogs

All the above

Other (please specify)

*** 11. Does your university provide access to information to other university libraries/repositories?**

Yes

No

If YES, kindly specify

*** 12. Tick the appropriate tool/equipment that is available at your institution to facilitate access to required information resources?**

Computer

Printer

Scanner

*** 13. How available are the above mentioned tools when you need them?**

	Always available	Sometimes available	Rarely available
Computer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Printer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scanner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Do you access the Internet for the purposes of teaching and/or research?

Yes

No

*** 15. From where do you access Internet?**

- Cyber café
- Home/own subscription
- University/Campus
- Other (please specify)

*** 16. In a scale of 1 to 5 where (1) is rarely dependent and (5) is highly dependent, indicate how dependent you are on the above chosen options. [Leave blank the options not applicable]**

	1	2	3	4	5
Cyber café	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Own subscription	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
University	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Any other specified(1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Any other specified(2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. Does your university/institution have a learning management platform? (application for the administration, documentation, tracking, and reporting of training programs, classroom and online events, e-learning programs, and training content)

- Yes
- No

If YES, which one, and for what purpose do you use it?

*** 18. How do you make available to students course material and assignments?**

- Email
- Print outs
- Learning Management System (e.g. Moodle)
- Face to face/Word of mouth
- Other (please specify)

*** 19. Do you have any collaboration with faculty who teach similar courses as you in other Moi campuses?**

- Yes
- No

If YES, explain the type of collaboration

20. If NO, what is your opinion about such collaboration as sharing of courseware and research work with fellow faculty?

*** 21. What challenges do you encounter when searching information resources for teaching and research?**

*** 22. Give your views on how access to learning and research information resources can be enhanced to facilitate teaching, learning and research at your university.**

*** 23. Are you familiar with the concept of Open Educational Resources (OER)**

Yes

No

3. Open Educational Resources

*** 1. Have you interacted with or created/developed any OER?**

Yes

No

If YES, What OER have you interacted with or created?

*** 2. Does your university have any OER?**

Yes

No

I do not know

3. What is your opinion about the adoption of OER at your university as a means of facilitating access to teaching, learning and research information resources?

Appendix 3: Interview Schedule for Librarian

- a) What collection does the library hold?
- b) How are electronic resources obtained by the library and how are they made accessible to faculty and students?
- c) What services does the library provide to faculty and students? What services are sought most by both groups?
- d) How would you describe the library use by faculty and students? Between the two groups, who visits the library most?
- e) Does the library have an institutional repository? What does it hold? Is it open or not?
- f) What collaborations does the library have with other libraries or institutions?
- g) Are you familiar with the concept of OER?
- h) What challenges do you encounter in the provision of information resources to faculty and students
- i) What is your opinion about OER adoption at the institution?

Appendix 4: Interview Schedule for OER Experts

- a) Viability- is an OER initiative viable/useful and applicable given the situation of Moi University Nairobi Campus? If yes, how should the following issues be tackled? If no, Why?
- b) Sensitization - Out of the responses of faculty and students of Moi University Nairobi Campus, many people are not aware of OER.
 - i. Is sensitization and awareness raising necessary?
 - ii. What, according to you, is the best way to carry out sensitization?
 - iii. From what level should it be carried out – faculty, students, administration?
 - iv. Who are the best audiences of OER in this case and why?
- c) Quality - One respondent indicated that they were aware of OER. When asked their opinion about its adoption, they were skeptical about the quality. The faculty commented that sometimes, they have so much on their plate. What ways would be best to enable quality of OER material?

- d)
 - i. What financial models would ensure sustainable OER in a Kenyan situation where the institutions are underfunded, and given that for OER projects to be really effective, they have to be financially sustained?
 - ii. How can such a project be sustained on the whole (Not just financially, but also to ensure that all involved keep up with improving on it and do not relax or stop at one point.)
- e) Policies - a critical factor in the success of OER is effective policies. What advice would you give to the institution's policy makers in terms of policies relating to administrative, faculty participation, Intellectual Property/Licensing, Information and Communication Technologies (ICT's) and any other that are critical in making OER flourish?
- f) Most respondents indicated that they use the library for their information access, how can OER be implemented to be linked with the library?
- g) Given the state of technology availability at the institution, how can OER work in this condition?
- h) Faculty indicated that they do share resources with fellow faculty but not always. They also indicated that more sharing and collaboration would be beneficial.
 - i. Can involvement in OER enable greater collaboration and sharing?
 - ii. How?
- i) Any other useful comments related to the above issues and the case under study?