LECTURERS' AWARENESS, READINESS AND UTILIZATION OF OPEN EDUCATIONAL RESOURCES FOR TEACHING AND LEARNING IN NIGER STATE COLLEGE OF EDUCATION MINNA

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ABSTRACT

It is not clear whether lecturers are aware and ready to utilizing open educational resources for teaching and learning in Niger state college of education, Minna in Nigeria. The purpose of this study is to investigate lecturers' awareness, readiness and utilization of open educational resources for teaching and learning in Niger state College of Education, Minna. Open educational resources is free and open available digitalized learning resources that can be adapted, modified, use and reuse for teaching, learning and research. It is one of the ways to help higher institutions of learning to acquire learning resources at low or no cost. Two hundred and twenty-five (225) lecturers were randomly selected while questionnaire was used for data collection and validated from two lecturers from Science Education, Federal university of technology Minna. Statistics mean and standard deviation were used for data analysis. The reliability of the instrument was determined using Spearman-Brown formula for the internal consistency of the items. A reliability index of 0.79, 0.71 and 0.65 were obtained for the research instrument. A mean decision rule of 3.0 was used in this study. An average mean above 3.0 will be regarded as aware, and ready to utilize. On the other hand, a value less than 3.0 will be regarded as not aware and not ready to utilize open educational resources. Findings show that Niger State College of Education, lecturers' are aware and ready to utilize OER Minna. It was there recommended that the stakeholder in Niger State College of Education, Minna should provide necessary ICT device and educational technology software as well as sufficient internet that can accommodate open educational resources for teaching and learning.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

Education has been described as a means to modify the behavior. Education can be generally regarded as experience, insight and adjustment on the part of man as he is stimulated towards growth and development. It is the process in which man develops his intelligence and reasoning, receive knowledge, cultivate good habits, skills and essential human virtues. Education is a major tool in shaping the nation. It is a tool for national development. The education goals of Nigeria's vision 2030 are to provide globally competitive quality of education, training, and research for development. This may be achieved through reducing literacy by increasing access to education and improving the quality and relevance of education, enhance efficiency and at the same time reduces unit costs of learning (Wosyanju, 2019). Because of the important of education to national development, the use of Information and Communication Technology (ICT) cannot be over-emphasized.

There are various Information and Communication Technology (ICT) tools that is in use in educational sector. These include Edmodo, Socrative, Project, thinglink, TED-Ed, ck-12, classDojo, eduClipper, storybird, Animoto, Kahoot! Among others by Commonwealth of learning. These tools are also referred as educational technology tools. The educational technology tools according to commonwealth of learning will help to achieved educational goal in Nigeria.

The most popular digital education technology tools for lecturers and learners. Thousand of digital educational technologies tools have been created with the purpose of giving

autonomy to learners, improving the administration of academic process, encourage collaborations, and facilitating communications with the users. The following eleven are the most popular ICT tools enrich teaching and learning in Niger state particular.

Edmodo is an educational tool that connects lecturers and learner to assimilate into a social network. In this one, lecturers can create online collaborative groups, administer and provide educational materials, measure learner's performance, and communicate with parents, among other functions. Edmodo has more than thirty-four million users who connect to create a learning process that is more enriching, personalized, and aligned with the opportunities brought by technology and the digital communities.

Designed by a group of entrepreneurs and engineers passionate about education, Socrative is a system that allows lecturers to create exercise or educational games which learners can solve problem using mobile devices, whether smart phones, laptops, or tablets. Lecturers can see the result of the activities and depending on these, modifying the subsequent lessons in order to make them more personalized.

Project is a tool that allows users to create multimedia presentations, with dynamic slides in which you can embedded interactive maps, links, virtual quizzes, Twitter timeline, and videos, among other options. During a class session, lecturers can share with learners academic power points presentations which are visually adapted to different devices.

Thinglink allows educators to create interactive images with music, sounds, texts, and photographs (multimedia). These can be shared on other websites or on social networks, such as Twitter and Facebook. Thinglink offer the possibility for lecturers to create

learning methodologies that awaken the curiosity of learners through interactive content that can expand their knowledge for teaching and learning in Niger state Minna.

TED-Ed is an educational platform that allows users to create educational lessons with the collaboration of lecturers, learners, animators generally people who want to expand knowledge and good ideas. This website allows democratizing access to information, both for lecturers and learners. Here, learners can have an active participation in the learning process of others.

CK-12 is a website that seeks to reduce the cost of academic books for the K12 market in the United States and the world. To achieve its objective, this platform has an open source interface that allows creating and distributing educational resources through the internet via Smartphone or computers, which can be modified and contain videos, audios, (multimedia) and interactive exercises. It can also be printed and comply with the necessary editorial standards in each region. The books that are created in cK-12 can be adapted to the needs of any lecturers, learners or educational users.

ClassDojo is a tool to improve learners behavior, lecturers provide their learners with instant feedback so that good disposition in class is 'rewarded' with points and students have a more receptive attitude towards the learning process. ClassDojo provides real-time notifications to students, like 'Well Done David!' and '+1', for working collaboratively. The information that is collected about learner behavior can be shared later with parents and administrators through the web.

This platform allows lecturers and learners to share and explore references and educational resources. In eduClipper, users can collect information found on the internet

and then shared it with the members of previously created groups, which offers the possibility to manage more effectively the academic content found online, improve research techniques, and have a digital record of what students achieved during the courses. Likewise, it provides the opportunities for lecturers to organize an online classes with their learners and create a portfolio where all the work carried out is stored virtual.

Storybird aims to promote writing and reading skills in students through storytelling. In this tool, lecturers can create interactive and artistic books virtual through a simple and easy to use interface. The story created can be embedded in blogs or podcast, sent by email, and printed, among other options. In Storybird, lecturers can also create projects with students, give constant feedback, and organize classes and grades.

Animoto is a digital tool that allows users to create high quality videos in a short time and from any mobile device or computers, inspiring learners and helping improve academic lessons. The Animoto interface is friendly and practical, allowing lecturers to create audiovisual content that adapts to educational needs.

Kahoot! is an educational platform that is based on games and questions. Through this tool, lecturers can create questionnaires, discussions, or surveys that accomplished academic lessons. The resources is projected in the classroom and questions are answered by learners while playing and learning at the same time. Kahoot! Promote game based learning, which increases learner's engagement and creates a dynamic, social, and fun educational environment.

The uses of Educational technology tools have provide learners with an effective and efficient ways to transmits, access and interpret the available educational resources

(Aubert, 2017). The uses of technology have become an integral part of today's classroom because it has facilitated the development of open educational resources for learners' learning and assessment across different various disciplines (Robin, 2011).

Some scholars have advocated for the increasing utilization of innovation technology in the higher institutions of learning based on the fact that the learners need to be technologically literate to survive and live effectively in the twenty first century, (Che-Hung, Pai-Lu, Wen-Hsuing, Chun-Yu, Hsiao-Moi& Yu-Li, 2013). This literacy is best achieved in classroom environment where technology becomes the central part of the classroom and where they are used as tool for learning and solving problems (Michael & John, 2018). ICT provide integrated environment of various technologies to support diverse educators and learners' needs via the internet. The goal of these tools is to enhance face-to-face instruction and to deliver distance-learning courses. Each of these tools offers similar component, such as course posting, assignment submissions, quizzes and communication features especially in open educational resources.

Open Educational Resources (OER): Is free and open available digitalized learning resources that can be adapted, modified, use and reuse for teaching, learning and research. It is one of the ways to help higher institutions of learning to acquire learning resources at low or no cost by Organization for Economic Co-operation and Development (OECD, 2017). OER was first introduced by United Nations Educational, Scientific and Cultural Organization (UNESCO) in a forum on the impact of open courseware for higher education in developing Countries 2002, hosted by UNESCO in Paris, France (UNESCO, 2013). The forum cemented the need to release these resources in order to expand access to education specifically in developing countries. As a result of this,

thousands of OER spanning across all disciplines have been made available in the public domain through the support of Organization for Economic Co-operation and Development (OECD). They include full courses, course modules, and video of lectures, homework assignments, simulations, and electronic textbooks in pdf formats. By the end of 2007, over 3,000 courses from over 300 universities were available (OECD, 2017). There are also African-based initiatives that have shared thousands of locally developed OER. Some notable initiatives are OER in Africa, Teacher Education in Sub-Saharan Africa (TESSA), and Open Content.

Lecturers' awareness of Open Educational Resources is essential in the utilization of OER in higher institutions of learning. Lecturer awareness of OER is essentially relevant in its utilization as they must have been exposed to the concept of OER and grasped how it differs from other types of educational resources or materials (Hatakka, 2019; Samzugi & Mwinyimbegu, 2013). Their awareness will lead to acquiring technical and semantic skills needed for using and creating OER (Lesko, 2013; Wolfenden, Buckler &Keraro, 2013). For potential OER creators, availability OER refers to whether the agent has an on hand educational material that can be shared openly. In most cases, while they may have materials that were developed for a specific in-class or correspondence teaching context, they would need to make some alterations to the materials (to upgrade the quality, to broaden the relevance, to establish the open permissions) before sharing them openly. Having gone through the process of creating and altering OER, it must be utilized internally by the lecturers.

Lecturers' utilization of open educational resource: Using OER in education to enhance learning, notably a kind of learning that enables the development of both individual and

social capabilities for understanding and acting. It is well established that OER can be also used for informal or non-formal learning educational settings. It is in the utilization of OER that learners can benefit from it.

1.2 Statement of the Problem

Open Educational resources can be considered as key such as intellectual property in a competitive learning environment. Research evidence shows that they can be used to enhance teaching and learning activities among lecturers. The researcher want to know may be due to lack of awareness of existence of OER. More preference is still been given to the use of outdated methods such as, discussion, lecture, fieldtrip, project method among others. Also their level of readiness in the utilization of OER is a major concern or their beliefs in OER as tool for teaching and learning. This may be due to developing nature of country. It is not clear whether lecturers are ready to utilize OER in Nigeria. Do they really have knowledge and ability to utilize the OER. Based on the above, the study therefore intends to assess the awareness and readiness of lecturers towards the use of Open Educational Resources for lecturing in Niger State College of Education Minna.

1.3 Aim and Objectives of the Study

The aim of study is to investigate lecturers' awareness, readiness and utilization of open educational resources for teaching and learning in institution in Niger state. The following objectives guide the study;

1. To determine the lecturers awareness of open educational resources for teaching and learning in Niger State College of Education.
2. To examine the extent to which open educational resources are readily available for lecturers in teaching and learning in Niger State College of Education.

3. To examine how lecturers extent of utilization of open educational resources for teaching and learning.

1.4 Research Questions

The following research questions are raised and answered in this study.

1. Are lectures aware of open educational resources for teaching and learning in Niger State College of Education Minna?
2. To what extent open educational resources are readily available for lecturers in teaching and learning in Niger State College of Education?
3. To what extent are lecturers utilizing OER for teaching and learning in Niger State College of Education Minna?

1.5 Scope of the Study

This study was delimited to Niger State College of Education Minna on investigating lecturers' awareness, readiness and utilization of Open Educational Resources (OERs) for teaching and learning.

1.6 Significance of the study

This study will be of immense benefit to researcher, government, lecturers, educational administration, parents and stakeholder.

This study will be beneficial to researcher by contributing to the existing body of literature and serves as reference point for future researchers.

This research work will also be beneficial to the government by enlightening the government on the benefits of open educational resources. This will encourage the government to incorporate the use of open educational resources in the nations' higher institutions of learning. If this done, it ensure that the public image of the institution will

be enhanced. This research work will be beneficial to the lecturers in the sense that it will enlighten them on the existence and utilization of OER and its advantages such as allowing the teacher to present his lesson materials to the students on timely bases through its flexibility.

The lecturer also provides information regarding the students' improvement and adjustment. The unique features of OER instruction carriers a virtual instructional style that the traditional paper and pencil assessment can never accomplish thereby allowing tutors to assess learners at a more convenient platform.

In addition, educational administrators, will benefit from this research work by enlightening them on the importance of OER which will make them to provide more interactive and robust learning environment characterized by improvement in instruction and learning, evaluation of student achievement and progress and feedback for the students, thus providing information to aid then in seeing in appropriate strategies, thinking or habits necessary for learning.

Finally, this research work will be of immense benefit to the parent as they will be able to provide OER by experts on course materials thus fostering instruction to self-study at home.

1.7 Operational Definition of Terms

Lecturer: Is a person who gives lectures or tutors as an occupation at college or in higher education.

Awareness: knowledge of the existence of a particular innovation such as open educational resources or e-learning.

Readiness: The state of being fully prepared or an act of willingness to use open educational resources

Utilization: Is an act of using open educational resource in teaching and learning in higher institutions or usage of online materials

Open Educational Resources (OERs): Open Educational Resources are teaching, learning and research materials in any medium, digital that resides in the public domain or has been released under an open license that permits no cost access, use, adaptation and redistribution others with no or limited restriction.

Higher institution: This is the tertiary institution in which this research work is been carried out.

CHAPTER TWO

2.0 REVIEW OF RELATED LITERATURES

2.1.0 Conceptual Framework

2.1.1 Concept of Open Educational Resources (OERs)

Open educational resources (OER) is currently often described as digitized materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research. OER includes learning content, software tools to develop, use and distribute content, and implementation resources such as open licenses. It is the accumulated digital assets that can be adjusted and which provide benefits without restricting the possibilities for others to enjoy them. These included 1,900 courses from Massachusetts Institute of Technology (MIT), 2,500 courses from over 200 universities under Consortium, and more than 1,500 courses under Japanese Consortium (Butcher, n.d.). Others include 750 resources from China Open Resources for Education (CORE) and more than 22,500 resources from Multimedia Educational Resource for Learning and Teaching Online (MERLTO) (Yuan, Mac, & Kraan, 2018).

Open educational resources (OER) can be defined as “materials used to support education that may be freely accessed, reused, modified and shared by anyone” (Downes, 2013). Open educational resources are still in the early adoption stage; the genesis of OER was the open source computing movement (Brown & Adler, 2018) and its first application to learning was “learning objects.” Wiley defined learning objects in 2000 as any digital resource that can be reused to support learning (2000,). Comparing this definition to Downes’ (2013) definition of open educational resources above it indeed shows that they

have similarities. Wiley (2017) suggested the critical attributes of learning objects are "reusable", "digital", and "resource". Downes (2016) included these attributes in his definition of OER although digital is not mentioned it could be construed as implied in this digital age. Thus the term "learning object" could be considered a formative definition preceding OER.

Paris Declaration in (2013), stated that OER are teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions. Open licensing is built within the existing framework of intellectual property rights as defined by relevant international conventions and respects the authorship of the work. Thus, OER are those teaching and learning materials that are available either in the public domain or under an open license. Public domain in the context of OER means, teaching and learning materials for which copyright has expired or for which copyright has been explicitly forfeited by the author.

Wiley (2017) developed the 4Rs framework for thinking about the bundle of permissions around use of OER; namely reuse, revise, remix, and redistribute. These 4Rs are the ways in which OER can be used:

1. Reuse – use the work verbatim, just exactly as you found it;

2. Revise – alter or transform the work so that it better meets your needs;

3. Remix – combine the (verbatim or altered) work with other works to better meet your needs, and

4. Redistribute – share the verbatim work, the reworked work, or the remixed work with others.

He argues that there are two criteria associated with OER: firstly, free and unfettered access to the resource, and, secondly, whatever copyright permissions are necessary for users to engage in the 4R activities. He later added a 5th R: Retain – the right to make, own, and control copies of the content (Wiley, 2017).

William and Flora Hewlett Foundation has stated that, open education resources "is the simple and powerful idea that the world's knowledge is a public good and that technology in general and the World Wide Web in particular provide an extraordinary opportunity for everyone to share, use, and reuse knowledge.

2.1.2 Facilitating conditions for Open Educational Resource (OER)

Venkatesh *et al*. (2003) define facilitating conditions as "the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system". Therefore, the OER adoption rate will increase if instructors believe that institutions have systems and services to support the application and use of OER in teaching. In the context of OER, these support systems can be the availability of reliable internet and having the necessary skills to be able to use OER. Therefore, the proposition is derived as follows:

Facilitating conditions has a positive effect on behavioral intention to adopt and use OER.

2.1.3 Models for Open Educational Resources

Funding models from Downes (2016), stated that, there are many funding models currently used by an open educational resource initiative. Downes (2016) summarized these models as follows: Endowment Model – the project obtains base funding and a fund administrator manages this base funding and the project is sustained from interest earned on that fund. For example, the Stanford Encyclopedia of Philosophy, where funds were raised from a variety of charitable foundations, generating in interest the service's operating budget. Membership Model – a coalition of interested organizations is invited to contribute a certain sum, either as seed only or as an annual contribution or subscription; this fund generates operating revenues service. For example, the Sakai Educational Partners Program, is a for fee community that is open to educational institutions. Donations Model a project deemed worthy of support by the wider community requests, and receives donations. Numerous open source and open content projects are funded in this manner, including Wikipedia and the Apache Foundation. Donations can take the form of money or content / code.

Conversion Model by given something away for free and then convert the consumer of the freebie to a paying customer. This model has proven popular in the educational community, having been adopted by Elgg and Lams. Eleven contributor pay model a mechanism that contributors pay for the cost of maintaining the contribution, and the provider thereafter makes the contribution available for free. For Example, the Open Educational Resource, research articles and supporting documentation will be made freely available online to view immediately upon publication. The charges for this process will be met by funding bodies. Sponsorship model this model underlies a form of

open access that is available in most homes: free radio and television. In online educational initiatives, various companies have supported OER projects on a more or less explicit sponsorship basis, often in partnership with educational institutions. Examples include the Massachusetts Institute of Technology (MIT) Campus Outreach Initiative and the Stanford on Tunes project. Institutional model an institution will assume the responsibility itself for an OER initiative and the most well known of these is Massachusetts Institute of Technology MIT's Open Courseware project. Governmental model funding for OER projects are directly come from government agencies, including the United Nations. Because OER initiatives have different goals and exist in different institutional contexts, no single funding model fit every project.

2.1.4 Open Educational Resource Models in Higher Institutions

Wiley (2016), summarized three models for open educational resource projects in higher education: The Massachusetts Institute of Technology (MIT) model, The Utah State University (USU) model, and The Rice model.

These three models exhibit an instructive diversity in their size, organization, and provision of IP clearance, content creation, and other services.

1. The Massachusetts Institute of Technology MIT Model: this model is highly centralized and tightly coordinated in terms of organization and the provision of services, relying almost exclusively on paid employees. The goal of MIT OCW is to publish each and every course in the entire 1,800-course university catalogue in a fixed period of time, and to continually republish new versions of courses and archive older versions. MIT has made an institutional commitment to sustain the project over the long term. One the key

drivers and enabler for the MIT project has been the lever of Foundation and private donor support it has been able to achieve. It has also successfully engaged vendors (such as Sapient, Microsoft, Maxtor, Hewlett-Packard, Akamai, and NetRaker) in partnerships. The annual budgets for MIT OCW projected from 2007 through 2013 are over £ 2,155,000 per year, with the most resources allocated to staff (including eight core staff, five publication managers, four production team members, two intellectual property researchers, and ten department liaisons) technology and contracted services. Without significant external funding, it is unlikely that any other institution will be able to replicate the MIT model.

2. The USU Model: This 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 goal of USU is to publish as many of the courses in the USU course catalogue as possible. Faculty members volunteer to coordinate this work as part of their teaching or advising responsibilities by making USU OCW-related work eligible for credit in their courses. The USU has also acquired the William and Flora Hewlett Foundation support with more than £125, 300 over the life of the project. The annual projected budget for USU OCW in 2017 is just over £63,647 (including one full-time Director, two half-time graduate students, and three half-time undergraduates). It is likely that this model could be replicable by other universities.

3 The Rice Model: This model is almost fully decentralized and volunteers provide almost all services and materials. The goal of Rice Connexions is to enable the collaborative development of educational modules and courses by authors from around the world. There is no target number of courses to be developed and the courses and

modules in Connexions are not all from courses taught at the Rice University. There is extensive documentation provided on the site to provide guidance for course building, technical and pedagogical support and to help authors deal with copy right issues. The average cost per course under the Connexions model appears to be extremely low. Most importantly, this model provides an example of volunteer-driven open resource communities that many other institutions could adopt and further explore. The MIT, USU, and Rice models show much of the diversity possible in open educational resource initiatives in higher education from institutional course based to more community based bottom-up activities. There are also all kinds of in-between models forming a continuum. For any OER initiative there is no one-size-fits-all model. However the existing models provide a good basis for others to build on. A variety of OER programmed and projects have been started in recent years. It is not possible to give a comprehensive estimation of the number of ongoing OER initiatives at the moment. However, it is possible to distinguish between different models of OER s that exist side by side, creating a kind of ecosystem to meet a variety of needs of teaching and learning in higher education.

2.1.5 History and development of open educational resource (OER)

A literature review of earlier studies on OER states that took its starting point from the rather recent birth of the term “open educational resources” and be short, or comprise all its different components such as open courseware (OCW), learning objects, open source software and open licenses. They latter approach would be beyond the scope of this research.

Johnstone and Poulin (2002), gives an early overview of what OER is as exemplified by the Massachusetts Institute of Technology (MIT) initiative. They describe some of MIT's background motives, how it has solved copyright issues as well as some of the technological challenges for spreading OER worldwide. Moore (2002) is among the first to make a distinction between open source development tools and open source courseware (the content). Looking at implications for higher educational institutions, she argues that not every institution needs to sponsor an open source project. Some may be better off participating as reviewers and occasional contributors. Quoting Werry (2001), she notes that the primary obstacles in developing an open source movement are organization, coordination, political will and funding, not lack of expertise or overall financial resources or skill. Keats (2003) builds on lessons learned from open source software development and describes a process model for collaborative development of content. Keats believes this model could be a way to unlock the potential for African universities. Siemens (2003) lists a number of reasons for educators to share learning resources for free, (a) it does not cost anything to share digital resources; (b) it gives educators alternatives and increases competition on the market; (c) it is democratic and a way to preserve public education among others.

These are examples of early articles describing the early stages of exchanging learning resources among educators, in the same way as programmers exchange software programmed, Materu (2004), is probably the first comprehensive report on what is later called OER. He concludes that open source courseware, as he calls it, has generated interest in all parts of the world with the United States in the lead. Although the concept has yet to have measurable effects on learning in institutions of higher education, there

are indications that open source courseware is viewed as a valuable. However, Materu reports that their participation is constrained by lack of the resources needed to develop and adapt courseware to suit their specific environments. In 2004 articles and papers on repositories of OER appeared. Hart and Albrecht (2004) examine the world of online repositories (websites hosting links to resources, but not the resources themselves) and explore their impact on faculty, students, support and institutional policies and procedures. They present examples of repository sites; demonstrate what these sites offer; discuss the potential impacts of resources on faculty and students; and consider the benefits, challenges and opportunities of these resources for institutions and information technology staff.

In (2005), the UNESCO International Institute for Educational Planning (IIEP) launched a discussion forum on OER and issued background notes such as Johnstone (2005) which provides an overview of the OER movement at that point in time, with examples of existing initiatives. Looking forward she says that the OER movement will require many creative people willing to contribute and to use the resources. It can be seen to represent a grand, but achievable undertaking to share intellectual capital. In a second background note, four major OER initiatives are described, together with lessons learned and challenges ahead. The projects are the MIT Open Courseware (OCW) project, Rice University's Connexions, Carnegie Mellon University's Open Learning Initiative, and the Center for Open and Sustainable Learning at Utah State University. A different source of information is evaluation reports from individual projects. Starting in March 2004 MIT has published annual comprehensive evaluation reports on the MIT, OCW website (Carson, 2004, 2005, 2006). These are the only such reports so far, and for the sake of

building a good knowledge base for the OER movement one can hope that other projects will publish similar studies. Of interest also are the conference proceedings from the Open Education resource. In the conference at Utah State University in 2005 and 2006 which provide the reader with a glance at a number of OER initiatives and the issues they are struggling with (USU, 2005, 2006).

Finally, in (March, 2006) UNESCO and IIEP started a wiki on useful OER with, among other things, background reading on OER, which is continuously updated with the help of the public. The open educational resource have recently evolved, and in many ways they challenge age-old educational traditions and conventions. The catalyst has been the pervasiveness of the internet and the ability to copy and distribute digital content. According to UNESCO,(2002) convened the forum on the Impact of Open Courseware for Higher Education and emergence of Open Educational Resources, providing free video materials for secondary school curriculum in 2006. University of Michigan Medical School in 2007 Department release describe a method to provide preclinical curricula materials as OER. Cape Town Open Education Resource Declaration calls on in 2008, stated that, governments and publishers around the world to release education materials on the internet for free. University of Michigan and four African universities in 2009 received a grant from the Hewlett Foundation to support free health education.

According to UNESCO (2002), the following are OER declarations, in Cape Town, and Paris which encouraged national governments to;

(a) Pass laws that made all educational content open.

(b) Release publicly funded educational content as open.

(c) Create a generic set of texts that all countries could share.

(d) Ban publishing for profit.

The educational institution that has been releasing nearly all its teaching and learning content since 2002 are: (a) Oxford University. (b) The Sorbonne. (c) Massachusetts Institute of Technology (MIT). (d) Tubingen University.

According to Organization for Economic Co-operation and Development OECD (2007), there are more than 3000 OER (open courseware) currently available from over 300 universities worldwide. These universities includes:

1. In the United States thousands courses have been made available by university-based projects, such as MIT Open Courseware, Rice University's Connexions project etc.

2. In China, 750 courses have been made available by 222 university members of the China Open Resources for Education (CORE) consortium.

3. In Japan, more than 400 courses have been made available by 19 member universities of the Japanese OCW Consortium from its 19 member universities.

4. In France, 800 educational resources from around 100 teaching units have been made available by 11 member universities of the Paris Tech open courseware project.

2.1.6 Open Educational Resource in Nigeria Educational Setting

The use of Open Educational Resources for teaching and learning in order to innovate the learning process in Nigeria educational settings. This includes the creation, use and repurposing of OER and their adaptation to the contextual setting. OER can also include

the open sharing of teaching practices and aims to raise the quality of education and training and innovate educational practices on an institutional, professional and individual level. McLaren (2018), provide an up-to-date authoritative account of the different definitions of OER. They state that conceptualizations of OERs vary widely, ranging from those centered primarily on the creation and use of OER to broader definitions of OER, inclusive of but not necessarily focused on OER.

One of the suggested ways of improving available teaching and learning resources at institutions of higher education in Nigeria, and for providing access to education in a truly scalable manner, is the use of OER (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2002; Atkins, Brown, & Hammond, 2007; The Organization for Economic Cooperation and Development [The OECD], 2007). The OECD (2007) declares that OER "could be a way to unlock the potential for Africa universities" by enabling free and open access to electronic learning resources for educators and learners. Similarly, OER Africa, an OER development initiative in Nigeria, indicates that OER could be used to support learners in several ways including the reduction of the cost of access to educational materials. Even though the use of OER to support teaching and learning has its own set of challenges, the support for OER in education has morphed into a global (UNESCO, 2002; The OECD, 2007).

2.1.7 Lecturers' Awareness of Open Educational Resource in Nigeria

According to Grodecka and Sliwowski, (2014) OERs face numerous limitations despite the many advantages. This is because OERs are still in the early adoption stage (McKerlich, Ives & McGreal, 2013), which calls for a research on factors slowing the

spread of their usage. Research has shown that a wider acceptance of OERs requires development of awareness and reaching an understanding of all their dimensions, increase of recognizable of the OER repositories and development of online collaborative communities (Torres, 2013). According to Huang, Jessica, Yan and Hu (2015) OERs as an innovation has been very influential in China and it is expected to bring changes to higher education. They further point that there is very limited literature on OER usage especially from students in higher institutions of learning in developing countries.

Awareness is a great factor that influences the utilization of resources. Without the idea on existence of the OERs, many students might not be able to trace them and even use them for the academic work. Increased broadband availability and low cost of internet connectivity is very important especially accessibility of materials in an affordable manner. The aspect of preparedness comes in after the students become aware of the existence of OERs. The user is expected to be trained on different skills about accessibility, choice of good quality OERs and different sites to find OERs. Students' readiness also touches on the availability of the computers, skills acquisition, availability of broadband and resources (Mays, 2014).

2.1.8 Lecturers' Readiness and Utilization of Open Educational Resource in Nigeria

The Commonwealth of Learning (2013) published the guidelines for supporting lecturers' effective use of OER. The publication covers the role of governments, institutions, and teachers in ensuring the effective integration of OER in the classroom. Governments' role in supporting teachers and institutions in the use of OER include contributing to the raising of awareness about OER among teachers, creating policies that encourage the use

and creation of OER in higher education, setting up an overarching national policy on licensing frameworks, promoting the adoption of appropriate open standards to ensure full access to and sharing of open resources in higher education, promoting national ICT and connectivity strategy given the significance of ICT to accessing and sharing of OER, and providing support for national initiatives to develop local content as well as global efforts to develop OER repositories.

As with governments, according to the Commonwealth of Learning (2013), institutions of higher education have a critical role to play in providing a conducive environment for teaching staff to access, use, and create OER. There is a need for ongoing professional development for teachers and other users of OER on how to find and use the resources. Institutions can develop institutional strategies for integrating OER into a range of pedagogical activities. According to the report, institutions can also provide incentives to support investment in the development, acquisition, and adaptation of OER. As further stated in the report, other possible institutional roles in supporting the use of OER by educators include promoting the publication of educational materials as OER within institutional protocols, promoting research on using, reusing, and repurposing OER, encouraging collaboration both within and beyond the institution in developing open materials, and developing institutional policies and practices to store and access OER.

The Commonwealth of Learning (2013) report also indicates that not only governments and institutions have roles to play in supporting teachers' use of OER; teachers themselves must take certain actions to ensure their effective use of the resources. Such actions include developing skills for the evaluation of OER. In cases where there is a deficiency in the use of OER, teachers should seek institutional support for the

development of relevant skills. Teachers should also leverage OER networks and communities of practice. As Petrides et al. (2014) suggest, teaching staff can benefit tremendously from using networks and communities of practice collaboratively to develop, adapt, and share OER. Last, according to the report, it is also recommended for lecturers to endeavor to develop skills to adapt and contextualize existing OER to respond to diverse learning needs of students as well as support a variety of learning styles.

2.1.9 Benefits of Open Educational Resources OER

The potential benefits of OER for users already identified in literature (Das, 2013) are:

1. Independent discussion forum and news forum for programs;
2. Materials can both be studied online and downloaded if necessary;
3. Old examination questions are posted online so that students can learn the patterns of questions that are asked;
4. There is online self-assessment tests, which a student can use to test himself or herself on a particular topic or issue;
5. There are provisions for uploading special writings by teachers and experts;
6. It has facility where students can view the list of online participants reviewing a particular topic so that they can communicate with each other through chatting. This can be achieved by building on the OER success stories of the African Virtual University.

In addition to earlier identified benefits, Wright and Reju (2013) opined that OER

1. It have the potential to increase accessibility to quality educational materials at a lower cost to the user, thereby allowing governments and institutions to divert funds to other critical areas such as learner support, faculty professional development, research, and teacher recruitment and retention;
2. It enable individuals to freely access information they can use to make decisions that affect their lives and ultimately the progress of societies; and
3. It have the potential to allow for flexible, quality education through distance learning, and to assist most African countries to meet the increased demand for secondary and higher education.

The Benefits of Open Educational Resource to Lecturers and their Students in Nigeria

The following are some of the benefits of OER to educators according to Organization for Economic Co-operation and Development (OECD, 2015)

1. It provides resources to be used in full confidence of the copyright terms attached to them ‘Something that’s available to be taken, reused, repurposed and repackaged and put together in a way that suits the person who’s reusing the educational resource. So there’s no copyright issues, there’s no worries; it’s freely available’.

2. It address learners’ specific needs through providing opportunities for supplementary learning outside the classroom (‘I’m always on the look-out for extra learning opportunities, for reinforcement and preparation’) and for the alternative presentation of content to address students’ interests and preferences; for example: Engineers are very visually driven and they’re very kinematic learners so I need something for them to hang

a concept off. So a lot of the OER, I grab off the web is to allow me to explain things in a visual or in an interactive way so that they can interact with things.

3. Saving lecturers effort, through enabling them to offer their students learning materials where they lack the skills, the means or the time to create these themselves: ‘if I can pick up three visualizations for one I’ve created it means potentially I’m reaching the students in a deeper way’.

4. Benchmarking their own practice in terms of content, approach and general quality when designing new programmes or modules: ‘when you’re starting off you look at more what level is appropriate. So I’d be looking to find learning outcomes to make sure that I was creating something that looked equivalent or better’.

5. It enable them to teach topics that lie outside their current expertise: ‘I was doing some lectures on nutrition and obesity, and I wanted to cover the genetics, but that’s not my area, so I went on and found a module on genetics of obesity that was completely adequate’.

6. Stimulating networking and collaboration among lecturers, based on a ‘give and take’ (or, more accurately, ‘take and give’) principle: appropriating resources authored by others in order to fill a gap in one’s own repertoire and, conversely, identifying a specific gap in the resources available to support a particular subject domain; contributing materials to fill that gap; and obtaining feedback on the quality of those materials: ‘it’s something where practitioners and support staff can put materials to be shared and distributed and put forward in a way that then allows feedback to come, so it’s a two way process; you can then look to improve it.

2.2.0 Barriers on Utilization of OER in Nigeria Higher Institutions

There are several barriers raised by Organization for Economic Co-operation and Development (OECD, 2015) for awareness and utilization of open educational resources as follow:

1. Practical difficulties for obtaining rights, such as whether a license is applicable or not, sometimes requires sophisticated legal analysis; it is not always easy to locate the appropriate license holder, which can be very expensive for the OER initiative. The difficulties and costs related to rights clearance for use of third-party content are considerable, in some cases almost half of the cost of the whole initiative.

2. The issue of unintended incompatibility between materials or tools licensed under different licenses, or different versions of the same licenses, is becoming a key issue. Like technical interoperability, increased legal interoperability is of fundamental importance for the growth of the OER movement.

3. Robust Internet connectivity and good ICT availability are essential to access and adapt OER.

4. Schools and universities seldom incentivize lesson creation

5. Low awareness among teachers and researchers producing learning resources of permit controlled sharing, with some rights reserved to the author. Although many academics are willing to share their work, they often hesitate to do so in this new environment for fear of losing their rights to their work. The opposite of retaining copyright is to release work

into the public domain, in which case the author retains no rights and anyone can use the material in any way and for any purpose.

To help address issues such as this and many more, the creative commons has launched a new division which focuses specifically on education. The mission of learning commons is to break down the legal, technical, and cultural barriers to a global educational commons. Learning Commons will provide advice and expertise to the OER community to overcome technical and cultural obstacles and identify lessons learned.

2.2.1 Types of Open Educational Resource (OER)

OER include learning objects such as lecture materials, references, readings, simulations, Experiment, and demonstrations, as well as syllabi, curricula, and teachers' guides (UNESCO, 2013). These are resources that can be used to support instructional activities as well as for the purpose of learning.

According to Wiley (2017) categorizes OER into two broad types: (a) OER designed for teaching and (b) OER designed for studying. Examples of OER designed for teaching include a set of presentation slides, syllabi, skeletal lecture notes, etc. These resources are designed on the assumption that they will be used by people with considerable knowledge in the content area. OER designed for studying include such materials as video lectures, interactive quizzes, and instructional simulations. These materials are usually heavy in content and are specifically designed to support learning.

OER are available in different formats. The most common format is the textual format. Textual OER take a variety of forms (Wiley, 2017), including HTML, XML, and PDF format. Audio OER contents are mostly in MP3 format while video contents are in MP4.

OER are also available in many different languages. The majority of OER are created in the English language and must be adapted to other languages for use by non-English speakers.

Although OER are mostly seen as digital materials (The OECD, 2017), print materials can be considered OER if such materials are open to modification, reuse, and dissemination. In the literature, OER often is used interchangeably with open courseware (OCW) (UNESCO, 2013; the OECD, 2017). However, while all OCW materials can be regarded as OER, not all OER are OCW materials. A subset of OER, OCW are teaching and learning materials made publicly available by higher educational institutions through the use of open licenses. As the use of OCW and other types of OER continues to grow, it is important to continually learn more about the resources and how they are being used by different groups across the globe.

The following types of OER include lessons, modules, full courses/programmers, guides, e-texts, articles, audio tracks, videos, multimedia, and any other learning materials (UNESCO & Commonwealth of Learning, 2013; Hylen, 2017). One of the main purposes for OER is to support education; they are heightened accessibility and they have the potential to reduce barriers to learning through enhanced attention, motivation, and engagement of students (Sclater, 2016)

2.2.2. Utilization of Open Educational Resources (OER) Initiatives in Higher Institution

The Organization for Economic Co-operation Development (OECD, 2017) conducted case studies in Nigeria institutions with OER projects and a number of reasons for using and producing OER were presented. These are summarized as follows:

1. The altruistic argument that sharing knowledge is in line with academic traditions and a good thing to do.

2. Educational institutions should leverage taxpayers' money by allowing free sharing and reuse of resources.

3. Quality can be improved and the cost of content development reduced by sharing and reusing.

4. It is good for the institution's public relations to have an OER project as a showcase for attracting new students.

5. There is a need to look for new cost recovery models as institutions experience growing competition.

6. Open sharing will speed up the development of new learning resources, stimulate internal improvement, innovation and reuse and help the institution to keep good records of materials and their internal and external use. From a more individual standpoint, open sharing is claimed to increase publicity, reputation and the pleasure of sharing with peers.

According to OECD's study (OECD, 2017), the usage for individuals to become engaged in OER can grouped into four:

1. The altruistic motivation of sharing (as for institutions), which again is supported by traditional academic values.

2. Personal non-monetary gain, such as publicity, reputation within the open community.

3. Free sharing can be good for economic or commercial reasons, as a way of getting publicity, reaching the market more quickly, gaining the first-mover advantage, etc.

4. Sometimes it is not worth the effort to keep the resource closed. If it can be of value to other people one might just as well share it for free.

Findings from the OECD research suggest that, the most commonly reported usage for lecturers was to gain access to the best possible resources and to have more flexible materials. It should also be emphasized that a combination of several of the motives listed here are likely to be in play simultaneously, both altruistic motives and economic incentives.

2.2.3 Theoretical Framework

According to Kimmons (2020) Technology integration in education refers to the meaningful use of technology to achieve learning goals. This seeks to answer the question: what is effective technology integration?

Learning Theories

Ever since there have been educators trying to teach students, there have been theories that guide how those educators view the learning process. These learning theories encompass our beliefs about the nature of knowledge and how a person learns.

Debates surrounding learning theories have existed for millennia, and even in the modern world, there is great diversity in how scientists, psychologists, and educators view learning. Some of the major learning theories that shape modern conversations surrounding technology integration include behaviorism, cognitivism, constructivism,

constructionism, and connectivism. Each of these theories has been studied and written about at length, and it is impossible to devote sufficient time and attention to each theory in the limited space provided in this chapter. Rather, all educators should study competing learning theories and develop their own understanding of how people learn. In this study, it will merely provide an extremely high level overview of each of these theories, briefly explaining what each entails and what each might mean for teaching and learning with technology.

Behaviorism

Behaviorism was popularized in the mid-20th century as psychologists studied behavior patterns and response systems in humans and other animals. Behaviorism treats learning as a response to stimulus. That is, humans and other animals are trained to respond in certain ways to certain stimuli, such as salivating when a dinner bell rings or repeating a memorized fact to receive some external reward. Teaching and learning, then, is a process of conditioning students to properly react to stimuli, and technology can help facilitate this training by providing incentives to learning, such as games or other rewards, or by providing systems to efficiently develop stimulus-response conditioning, such as drill-and-kill practices.

Cognitivism

Cognitivism arose as an alternative to behaviorism in part because behaviorism treated the processes of the brain as an imperceptible black box, wherein understanding how the brain worked was not considered important for helping people learn. Cognitivism, therefore, dealt with brain functions and how information is processed, stored, retrieved,

and applied. By treating humans as thinking machines, rather than as animals to be trained, research in cognitivism for teaching and learning focused on helping people develop efficient teaching and studying strategies that would allow their brains to make meaningful use of presented information. Through this lens, technology can help in providing information and study resources that assist the brain in efficiently storing and retrieving information, such as through the use of mnemonic devices or multiple modalities (e.g., video, audio).

The model consists of four key constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions. These four constructs are direct determinants of usage intention and behavior. Moreover, the variables gender, age, experience, and voluntariness of use moderate the key relationships in the model. This model has demonstrated the robustness and validity in predicting the acceptance of various new innovations which influenced the choice of the model for this study. Moreover, it was able to explain 70%of the variance in behavioral intention and about 50% in actual use, which was better than the other eight models (Venkatesh et al., 2003).

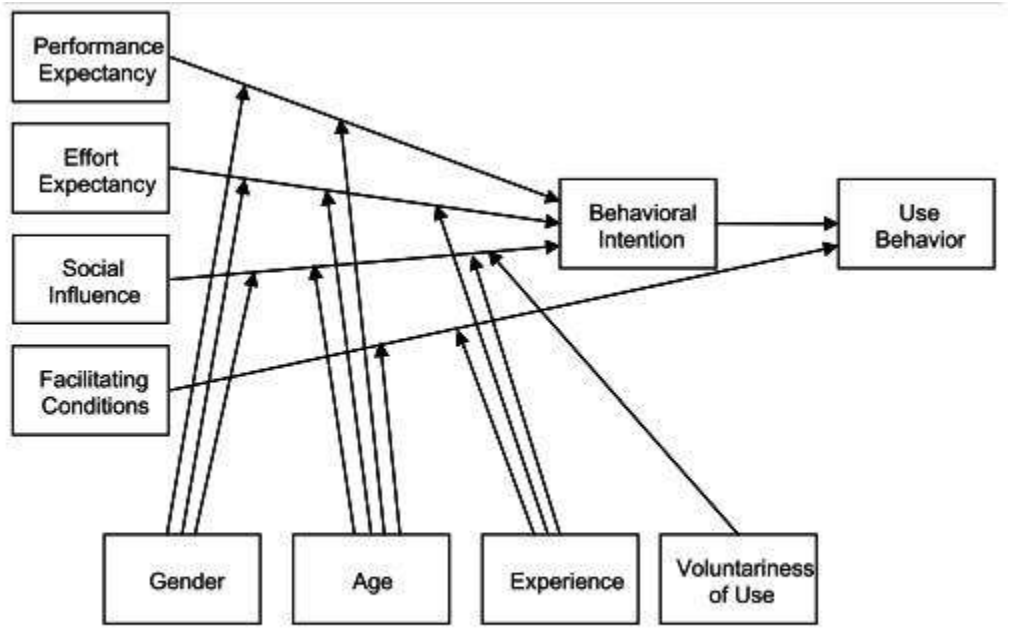

Figure 1. The UTAUT model (Source: Venkatesh et al., 2003, p. 447).

2.3.1 Empirical Studies

2.3.2 Outcomes of Using OER and Some Lessons Learned

Although there is little qualitative or quantitative research data available for OER initiatives at the moment, some positive outcomes and impacts from individual projects have been reported. For example, Massachasetts Institute of Technology (MIT) Open courseware's evaluation report (MIT Open courseware, 2016) indicates that (MIT) OCW has been visited more than 8.5 million in 2015, a 56% annual increase. MIT OCW use is centered on subjects which MIT is a recognized field leader. The data shows that 61% of OCW traffic is non-US, 49% of visitor identify themselves as self learners, 32% students and 16% educators. Educators come to the site primarily to develop a course (26%), prepare to teach a specific class (22%), and to enhance personal knowledge (19%). Student uses the website to complement a course (38%), enhance personal knowledge (34%) and plan course of study (16%); Self learner uses it to enhance personal

knowledge (56%), keep current in field (16%) and plan future study (14%). Similarly, Connexions is being used in traditional colleges, community colleges and primary and secondary school settings, in distance learning and by lifelong learners around the globe (UNESCO, 2013). Volunteers are translating modules and courses into a range of different languages, including Spanish, Japanese, Chinese and Thai.

In related studies Olufunke and Adigun (2014) studied utilization of OERs among undergraduates in Nigeria University. The researchers used a descriptive research design. The findings of the study were that the undergraduates were moderately aware of the existence of OERs. The researchers used qualitative analysis and a scale that ranged from zero to three. This study used multi stage and simple random sampling and the sample size was from all the faculties in the university sampled. This study could have yielded different findings had the researchers used undergraduate students from same faculties and from the same cohorts.

According to Wiley (2016), the sustainability of OER initiatives must be considered in two parts: The sustainable production of OER and the sustainable sharing of resources. The sustainability of any OER initiative is influenced by the size of the operation (small or large), the type of provider (institution or community) and the level of integration of users in the production process (co-production or producer-consumer model). There are many funding models in the different institutional contexts, however, every 16 initiative will have different goals so no single model will fit every project.

Atkins, Brown, & Hammond (2017) identified a number of approaches to sustainability which should be considered and need to be explored:

1. Encourage institutions, rather than just individual pioneer-faculty, to buy into the OER movement so that institutional resources will be committed to sustain it.

2. Situate OER collections not as distinct from the courseware environment for the formally enrolled students but as a low marginal cost derivative of the routinely used course preparation and management systems.

3. Encourage membership-based consortia to share cost and expertise.

4. Explore roles for students in creating, enhancing and adopting OER.

5. Consider a voluntary (or mix of voluntary and paid) wiki-like model, in which OER is the object of micro-contributions from many.

6. Examine ways that social software can be used to capture and structure user commentaries on the material.

According to Grodecka and Sliwowski, (2014) OERs face numerous limitations despite the many advantages. This is because OERs are still in the early adoption stage (McKerlich, Ives &McGreal, 2013), which calls for a research on factors slowing the spread of their usage. Research has shown that a wider acceptance of OERs requires development of awareness and reaching an understanding of all their dimensions, increase of recognizable of the OER repositories and development of online collaborative communities (Torres, 2013). According to Huang, Jessica, Yan and Hu (2015) OERs as an innovation has been very influential in China and it is expected to bring changes to higher education. They further point that there is very limited literature on OER usage especially from students in higher institutions of learning in developing countries.

Other studies done in Sub Saharan Africa targeting non Teacher Education in Sub-Saharan Africa (TESSA) participants, established that there was general lack of awareness. Two academic non TESSA members stated that they have never heard of OERs before as much as they were participating in other open access activities. This was an indication that even the academics lacked awareness and yet they are expected to make use of them and even recommend some for their students. The researchers further interviewed seven librarians from nine non- TESSA group, they also knew very little about OERs (Ngimwa & Wilson 2013). The data collection instruments used were interviews and observations only. It was purely qualitative and therefore arrival at conclusions and inferences might have not been very accurate. Therefore, the current study was done to address some of the weaknesses noted in data collection and data analysis.

According to Panda and Chen (2013) in a study titled needs for and utilization of OERs in distance education in China it was established that even the lecturers did not have a clear understanding of OERs and the other materials available online. The study brought out the misunderstanding that is there among faculty and that they mistake all the resources available for use online. This study reveals that even the lecturers who are the facilitators face awareness problem what about the learners who depend on the guidance from lecturers. This study was purely targeting the lecturer's awareness; the present study will target the part time mode. This study was also conducted using an online questionnaire, while this study used the face to face questionnaires and the researcher administered and collected the questionnaires by self.

Cagiltay, Koybasi and Islim (2016) in their study done in Nigeria titled 'Use of open educational resources: How, Why and why not?' The researchers found out that over 76% were aware of open educational resources and they said that they learn of OERs from the teaching assistants, instructors, flyers, peers and media. Another 23% of the participants were aware of the resources through searching online and surfing the open Courseware (OCW) portal. The respondents were students of general physics in the university regular system. However, the researcher did not establish the relationship that existed between lecturers' awareness and utilizations.

Li, Yuen and Wong (2015) in a study on readiness for open educational resources in Hong Kong established that the tertiary students showed a limited degree of awareness towards OERs. 29.6 %indicated they had no idea about OERs, 33.3% knew of it, 33.3 % knew how to use them. The study further found out that the awareness degree was limited due to the few OER respondents used. The study revealed that most of the tertiary students had high computer literacy on using open educational resources, however, their familiarity and experience in OERs was rather not limited.

2.3.3 Summary of Review of Literature

There is growing interest in community-based approaches to produce content and promote sharing and use of resources. To make OER initiatives work and keep them for the long run, it is important to first gain and maintain a critical mass of active, engaged users, increase usability and improve quality of the resources created. The "community" offers possibilities for rapid diffusion and a strong community influences user behavior and increases the likelihood that users will come back to the repository. OER should not only pay attention to the "product" but on understanding what its user community wants

and on improving the OER's value for various user communities. Intellectual Property and copyright issues intellectual property issues are at the heart of OER. It was suggested that the issue of copyright and ownership of material is "the root cause of slow development in this field," inhibiting some faculty members and institutions from making more educational content available to the online community. Before publishing educational resources that make use of third-party materials on the internet, the author, or the publisher, must ensure they have the right to use these materials.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Research Design

A descriptive survey research design was used in this study. This survey type was adopted because it capable of eliciting respondent opinion on the lecturer awareness, readiness, and utilization of Open Educational Resources for teaching and learning in college of Education, Minna, Niger State. Questionnaires were used to collect data from the respondents. This is the best for the research since the study involves getting some answers from respondents about their own opinions and views on the research topic.

3.2 Population of the study

The study population in this research consists of all lecturers in Niger State College of Education drawn from all schools, which are 477. The breakdown is shown in the Table 3.1.

This is shown in Table 3.1

S/N	SCHOOL	DEPARTMENT	No of Lecturers
1.	Education	(a)Primary education, (b) Early childhood education, (c) Special education.	45
2.	Vocational	(a)Agricultural science, (b) Fine-Art, (c) Business, (d) Home-Economics.	90
3.	Science	(a)P.H.E, (b) Physics, (c) Mathematics, (d) Integrated science, (e) Computer, (f) Chemistry, (g) Biology.	115
4.	Language	(a)English, (b)French, (c)Arabic, (d)Music	53
5.	Art and social-science	(a)History, (b)Geography, (c)Economics, (d)Social studies, (e)Islamic studies, (f)Christian Religion studies.	81
6.	Technical education	(a)Elect/Elect, (b) Wood work, (c) Metal work, (d) Automobile, (e) Building department.	93

Total	477

The table 3.1 shows the total population of the lecturers in Niger State College of Education, Minna, which are 477 in total.

3.3 Sample and Sampling Techniques

The sample for this study comprise of lecturer in the Niger State College of Education, Minna. Simple random sampling techniques was use in five selected schools in the institution. Also, simple random sampling techniques of 225 was use to select lecturers in randomly selected schools.

3.4 Research Instrument

The research instrument that was used in this study to collect the data was a questionnaire which was designed by the researcher. The questionnaire was titled "Lecturers' awareness and readiness toward the use of Open Educational Resources for teaching and learning Questionnaire''. The questionnaire was divided into four sections (Sections A, B, C, D); section A, was used to elicit responses on the demographic data of the respondents. Section B, consists of five items designed to elicit data on respondents' of open educational resources (OERQ).Section is a point5 LIKERT scale of Strongly Agee (SA), Agree (A), Undecided (U), Disagree (D) and Strongly Disagree (SD), and were coded 5, 4, 3, 2 and 1 point respectively.

3.5 Validation of the Research Instrument

The instrument was validated by two lecturers, all from the Department of Educational Technology, Federal University of Technology Minna, for face and content validity. The validators were requested to validate the items on suitability, clarity, logical arrangement of the items among others. Their suggestions and recommendations were taken into consideration in the production of the final draft of the instrument (see appendix B)

3.6 Reliability of the Instrument

The reliability of the instrument was determined using Spearman-Brown formula for the internal consistency of the items. A reliability index of 0.79, 0.71 and 0.65 were obtained for Lecturers awareness of Open Educational Resources for teaching and learning, Lecturers ready to utilize of Open Educational Resources for teaching and learning, and Lecturers utilization of Open Educational Resources for teaching and learning respectively. After modification of items in line with recommendation of the experts' criticism and comment, the instrument was administered to a sample of 225 Lecturers from Niger State College of Education, Minna. The lecturers were selected outside the sample of this study, and were adequately considered for the instruments.

3.7 Method of Data Collection

Permission was obtained from the Management of the sampled higher institution to get approval in order to sample their lecturers. The participants were be briefed on the objectives of the study; researcher and the research assistants administer the questionnaire on the sampled lecturers. The sampled questionnaire was collected immediately after they have been filled. And that take approximately three weeks.

3.8 Method of Data Analysis

The data gathered in this study where analyzed using description statistics of mean and standard deviation. A mean decision rule of 3.0 was used in this study. An average mean above 3.0 will be regarded as aware, and ready to utilize. On the other hand, a value less than 3.0 will be regarded as not aware and not ready to utilize.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Research Question 1

Are lectures aware of open educational resources for teaching and learning in Niger State College of Education Minna?

Table 4.1: Mean and Standard deviation of Respondents on Lecturers Awareness of Open Educational Resources for Teaching and learning.

S/N	Statement	N	Mean	S.D	Remarks
1	I know much about OER.	225	3.38	.563	Agreed
2	I am aware that uses of OER are more convenient to use.	225	3.32	.807	Agreed
3	I have inadequate awareness of OER.	225	3.20	.896	Agreed
4	I am aware that using OER will increase the learning activities.	225	3.14	.959	Agreed
5	I am ready to use OER because there are sufficient internet accesses in my school.	225	2.29	1.707	Disagreed
	Grand mean: 3.02				

Table 4.1 shows the result of lecturers are awareness of open educational resources for teaching and learning, this is in respect to research question one. The respondents rated four of the five items agreed showing that lecturers are aware of using open educational resources with the grand mean score of 3.02 which is greater than the mean decision rule

of 3.0. This shows that the lecturers in Niger State College of Education Minna are aware of open educational resources.

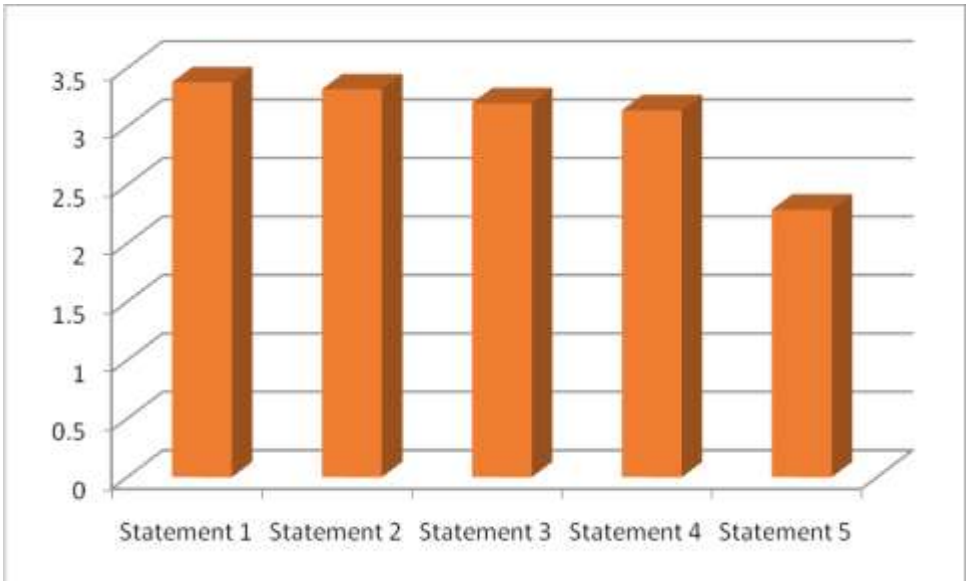

Figure 4.1: Bar chart showing the lecturers' awareness of using open educational resources

4.2 Research Question 2

To what extent are lecturers ready to utilize open educational resources for teaching and learning in Niger State College of Education, Minna?

Table 4.2: Mean and Standard deviation of lecturers readiness for using Open Educational Resources for Teaching and Learning.

S/N	Statement	N	Mean	S.D.	Remarks
1	My school lack training, conference, seminar, workshop, for lecturers in using OER which makes them not ready to use it.	225	3.36	.593	Agreed
2	I am ready to license my teaching materials so that they can be sheared as OER	225	3.40	.665	Agreed
3	I am ready to use OER even if it means paying extra money for access.	225	3.10	.832	Agreed
4	I am ready to use OER if the institutions integrate it for use.	225	3.20	1.234	Agreed
5	I am fully ready to use OER if necessary equipment supply to my school.	225	3.72	.988	Agreed
	Grand mean: 3.72				

Table 4.2 shows the result of lecturers readiness to utilize open educational resources for teaching and learning in line with research question two. The respondents rated items agreed showing that lecturer are ready to use open educational resources. The grand mean score of 3.72was obtained having considered 3.0 as the benchmark. Thus, it indicates that lecturers are ready to use open educational resources for teaching learning. This is presented in figure 4.2 bar chart.

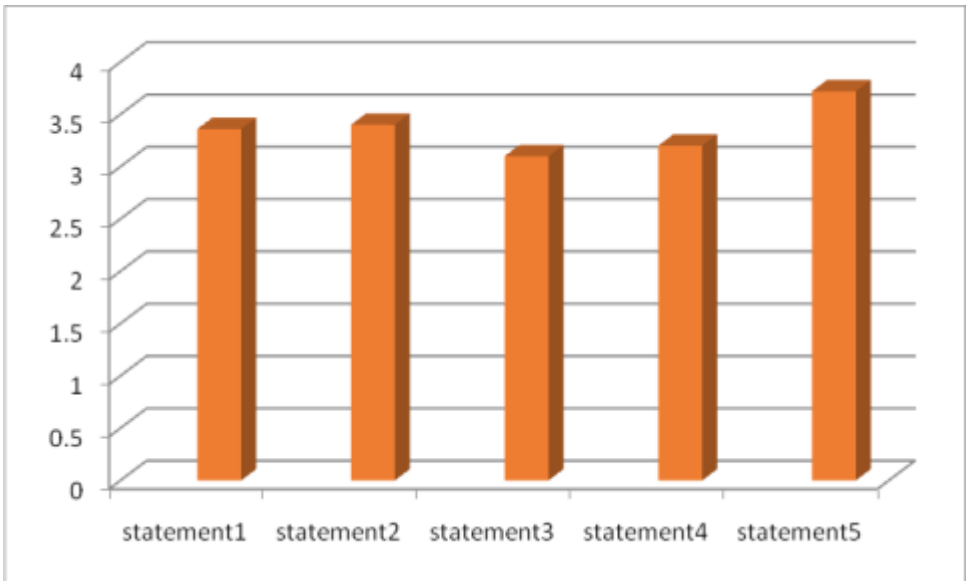

Figure4.2: Bar chart showing lecturers' readiness to utilize open educational resources.

4.3 Research question 3

To what extent are lecturers utilizing OER for teaching and learning in Niger State College of Education Minna?

Table 4.3: Mean and Standard deviation of Lecturers utilization of Open Educational Resources for Teaching and Learning.

S/N	Statement	N	Mean	S.D.	Remarks
1	I use OER because it is available free of charge.	225	3.44	.886	Agreed
2	OER are use to substitute to hand books and manual/ modules from the class.	225	3.18	.655	Agreed
3	I think implementing and using OER as a part of teaching and learning process, will make the educational process easier and more enjoyable.	225	3.62	**.**526	Agreed
4	I think using OER will add value to teaching and learning process.	225	3.22	.577	Agreed
5	I lack sufficient skills for using OER	225	2.42	. 9 3 8	D i s a g r e e d
	Grand mean: 3.20				

Table 4.3 shows the result of lecturers utilization of open educational resources for teaching and learning, this is in respect to research question three. The respondents rated four out of the five items agreed showing that lecturers are utilizing open educational resources for teaching and learning with the grand mean score of 3.20 which is greater than the decision mean of 3.0. The information in the table is presented in the figure 4.3, bar chart.

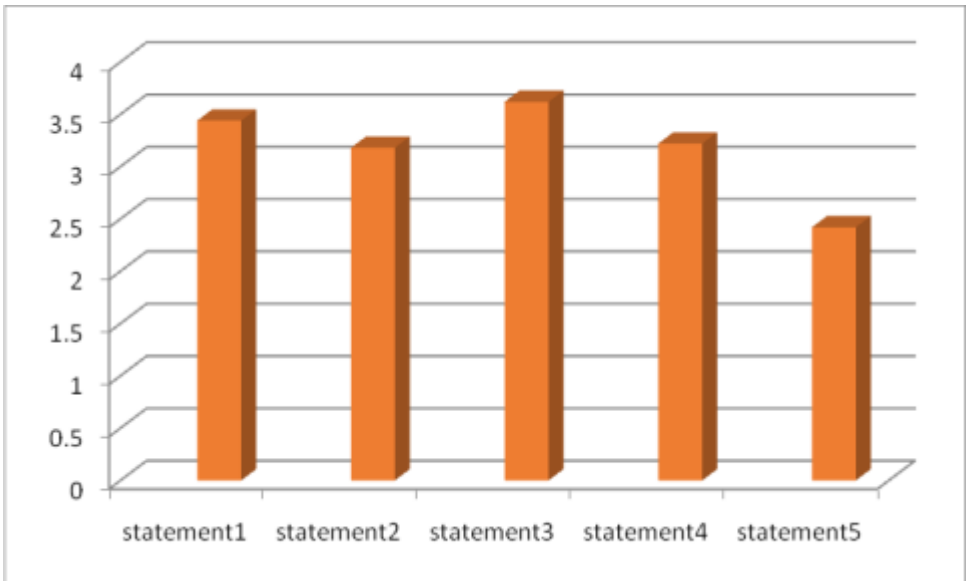

Figure4.3 Bar chart showing lecturers utilization of open educational resources

4.4 Discussion of findings

4.4.1 Research Question 1: Are lectures aware of open educational resources for teaching and learning in Niger State College of Education Minna?

Findings: This shows that the lecturers in Niger State College of Education Minna are aware of open educational resources.

Discussion: The findings reveal that lecturers are aware of open educational resources for teaching and learning ratings above the cut-off point of 3.02 on the five point Liker scale, while findings proved that there are insufficient internet access for utilize open educational resources and they are all aware that using OERs in teaching and learning activities will enrich learning objective. The finding agree with the finding of Cagiltay, Koybasi and Islim (2016), in their study done in Turkey titled ‘Awareness and use of open educational resources: How, Why and why not?’ The researchers found out that over 76% were aware of open educational resources and they said that they learn of

OERs from the teaching assistants, instructors, flyers, peers and media. Another 23% of the participants were aware of the resources through searching online and surfing the open Courseware (OCW) portal. The respondents were students of general physics in the university regular system. However, the researcher did not establish the relationship that existed between student awareness and utilization. In related other finding by Ngimwa and Wilson, (2013) other studies done in Sub Saharan Africa targeting non Teacher Education in Sub-Saharan Africa (TESSA) participants, established that there was general lack of awareness. Two academic non TESSA members stated that they have never heard of OERs before as much as they were participating in other open access activities. This was an indication that even the academics lacked awareness and yet they are expected to make use of them and even recommend some for their students. The researchers further interviewed seven librarians from nine non- TESSA group, they also knew very little about OERs (Ngimwa & Wilson, 2013). The data collection instruments used were interviews and observations only. It was purely qualitative and therefore arrival at conclusions and inferences might have not been very accurate. Therefore, the current study was done to address some of the weaknesses noted in data collection and data analysis. The finding is corroboration with (Ngimwa and Wilson, 2013).

4.4.2 Research Question 2: To what extent are lecturers ready to utilize open educational resources for teaching and learning in Niger State College of Education Minna?

Finding: The lecturers are ready to use open educational resources for teaching and learning.

Discussion: The finding from table 4.2 revealed that lecturers are ready to use open educational resources for teaching and learning in all ramification, but what is meant delaying the school is that they lack training, conference, seminar, workshop, for lecturers in using open educational resources. Li, Yuen and Wong (2015) in a study on readiness for open educational resources in Hong Kong established that the tertiary students showed a limited degree of awareness towards OERs. 29.6 %indicated they had no idea about OERs, 33.3% knew of it, 33.3 % knew how to use them. The study further found out that the awareness degree was limited due to the few OER respondents used.

The study revealed that most of the tertiary students had high computer literacy on using online tools and resources, however, their familiarity and experience in OERs was rather limited. The finding is corroboration with Li, Yuen and Wong (2015). Is only school management and government that are not gives the provision for lecturers in College of Education Minna, Niger State because the finding make it clear that they lack training, conference, seminar, workshop, for utilize open educational resources.

4.4.3 Research Question 3: To what extent are lecturers utilizing OER for teaching and learning in Niger State College of Education Minna?

Finding: The lecturers are utilizing open educational resources for teaching learning

Discussion: The finding from table 4.3 revealed that lecturers are utilizing open educational resources for teaching and learning in Niger State College of Education, Minna and they also proved to researcher that the learning now is computing base so far you have data and smart phone everything is more easy and enjoyable. According to Panda and Chen (2013) in a study titled needs for and utilization of OERs in distance education in China it was established that even the lecturers did not have a clear

understanding of OERs and the other materials available online. The study brought out the misunderstanding that is there among faculty and that they mistake all the resources available for use online. This study reveals that even the lecturers who are the facilitators face awareness problem what about the learners who depend on the guidance from lecturers. This study was purely targeting the lecturer's awareness; the present study will target the part time mode. This study was also conducted using an online questionnaire, while this study used the face to face questionnaires and the researcher administered and collected the questionnaires by self.

In related studies Olufunke and Adigun (2014) studied utilization of OERs among undergraduates in Nigeria University. The researchers used a descriptive research design. The findings of the study were that the undergraduates were moderately aware of the existence of OERs. The researchers used qualitative analysis and a scale that ranged from zero to three. This study used multi stage and simple random sampling and the sample size was from all the faculties in the university sampled. This study could have yielded different findings had the researchers used undergraduate students from same faculties and from the same cohorts.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

This findings where summarized of the major of the research

1. There was a statistically finding, proved that lecturers in Niger State College of Education aware of using open educational resources for teaching and learning in Minna.
2. Lecturers in Niger State College of Education ready to utilize open educational resources for teaching and learning in Minna.
3. Lecturers are utilizing open educational resources for teaching and learning.

5.2 Conclusions

Base on the findings of this study, the following conclusions are made:

1. Lecturers in Niger State College of Education, Minna are aware of open educational resources for teaching and learning.
2. Lecturers in Niger State College of Education, Minna are ready to utilize open educational resources for teaching and learning.
3. Lecturers in Niger State College of Education, Minna are utilizing open educational resources for teaching and learning.

From the findings of this study, I here by concluded that lecturers are aware and ready to utilize open educational resources for teaching and learning in Niger State College of Education Niger.

5.3 Recommendations

Based on the findings that emanated from this study, the following recommendations were made:

1. Stakeholders in higher institutions should provide necessary ICT equipment and educational technology tools as well as sufficient internet that can accommodate open educational resources for the teaching and learning in Niger State College of Education, Minna.
2. Government and school management should provide periodic seminar, training, conference, workshop and orientation on the use of open educational resources for the teaching and learning in college of education, Minna.
3. Lecturers should enabling policy on the utilization of open educational resources, especially with pedagogical application in the teaching and learning.

5.4 Contribution to the Body of Knowledge

The study has added to the body of knowledge in the following ways:

1. The study has succeeded in reposition in Niger State College of Education's lecturers toward the use of open educational resources in teaching and learning.

2. It was also confirmed from the study that open educational resources are used in instructional delivery it will change perception of lecturers positively toward it.

3. The study contributed to the existing literature on open educational resources

5.5 Suggestions for Further Studies

Therefore, the following suggestions are made for further research by subsequent studies**.**

(i) Availability and effective use of open educational resources in college of education among the lecturers in other state, this is to give a general picture to the concerned authority so as to generate a solution to instructional delivery problems in schools.

(ii) Additional variables such as exposing student to Google classroom by giving everyone edit access to Google slide deck or some other than the ones used in this study could be explored further; this is to find out the various issues surrounding the effect of applying open educational resources. New of such areas are the, mobile learning, and many other related medium.

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APPENDIX

QUESTIONNAIRE

FEDERAL UNIVERSITY OF TECHNOLOGY MINNA, SCHOOL OF SCINCE AND TECNOLOGY EDUCATION, DEPARMENT OF SCIENCE EDUCATION

Dear Respondent,

I am a final year student of the Department of Science Education, Federal University of Technology, Minna Niger State, currently undertaking a project on the topic,“ lecturers’ awareness, readiness and utilization of Open Educational Resources for teaching and learning in Niger State College of Education”. This questionnaire is designed to collect data and the information gotten here will be strictly used for academic purpose.

I humbly implore you to honestly respond to the items and I assure you that your response will help to give me an insight into this area of study and facilitate the outcome of the research.

Thanks for your understanding and co-operations

SECTION A

PERSONAL DATA

Tick (√) in the box for the option that represents your view.

1. Gender: Male [ ], Female [ ]

2. Academic staff [ ], Instructors [ ], and others

[ ].

3 Department: …….

SECTION B = Questionnaire on Awareness of Open Educational Resource

Tick the one that is more appropriate SA-strongly Agree, A-Agree, U-Undecided, D-Disagree, SD-strongly Disagree.

Table 1

S/N	ITEMS	SA	A	U	D	SD
1	I know much about OER.					
2	My school lack opportunity of training, conference, seminar, workshop for instructors/lecturers in using OER.					
3	I am aware that using OER will enhance learning activities.					
4	I am aware that OER are more convenient to use in the teaching and learning activities.					
5	I have inadequate awareness of OER opportunities.					

SECTION C Questionnaire on readiness of lecturers on utilization of Open Educational Resource (OER).

Tick the one that is more appropriate SA-strongly Agree, A-Agree, U-Undecided, D-Disagree, SD-strongly Disagree.

Table 2

S/N	ITEMS	SA	A	U	D	SD
1	My school lack opportunity of training, conference, seminar, workshop, for lecturers in using OER which makes them not ready to use it.					
2	I am ready to license my teaching materials so that they can be sheared as OER					
3	I am ready to use OER even if it means paying extra money for access.					
4	I am ready to use OER if the institutions integrate it for use.					
5	I am fully ready to use OER if necessary equipments are supplied to my school.					

SECTION D = Questionnaire on utilization of Open Educational Resources (OER)
Tick the one that is more appropriate SA-strongly Agree, A-Agree, U-Undecided, D-Disagree, SD-strongly Disagree.

Table 3

S/N	ITEMS	SA	A	U	D	SD
1	I use OER because it is available free of charge.					
2	OER are use to substitute handbook, manual/module from the class.					
3	Implementing and using OER as a part of teaching and learning process, and will make the educational process easier and more enjoyable.					
4	Using OER will add value to teaching and learning process.					
5	I lack sufficient skill for using OER.					