LECTURERS PERCEPTIONS, SELF EFFICACY AND ATTITUDE TOWARDS UTILIZATION OF OPEN EDUCATIONAL RESOURCES FOR KNOWLEDGE SHARING AMONG COLLEGE OF EDUCATION LECTURERS IN MINNA, NIGER STATE

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2015/1/57895BT

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A PROJECT SUBMITTED TO THE DEPARTMENT OF EDUCATIONAL TECHNOLOGY, SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION, FEDERAL UNIVERSITY OF TECHNOLOGY MINNA IN PARTIAL FULFILMENT OF THE REQUIREMENTSFOR THE AWARD OF BACHELOR OF SCIENCE DEGREE (B.Tech) IN EDUCATIONAL TECHNOLOGY

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CHAPTER ONE

1.0 INTRODUCTION

1. Background to the Study

Information and communication technologies (ICT) have driven information sharing to greater heights, the internet has provided an unlimited source of knowledge and has become a tool for human development and technological advancement in developing and developed countries (U.N, 2017). The role and importance of education as an instrument of development and growth in our society cannot be overlooked as it affects national development. Investment in the education sector can be regarded as a business with greatest profits. In this twenty-first century, there have been a lot of interests on how computers and the internet as part of technological advancement can be integrated fully into the educational sector to improve the efficacy of education at all levels, especially in higher institutions in developing countries like Nigeria (Jaganath et al., 2013).

This era of information and communication technology is characterised by the rapid growth of spreading information with the use of technological tools. This technological age does not depend on agriculture as of the primitive people but depends much on information which has dramatically reshaped our society to a greater extent. Roztocki (2019) is of the view that information has brought challenging issues between developed, developing and under-developed countries, thereby producing a society driven by information technology. Information and Communication Technology can be used as a great tool for sustainable development and empowering people for global competitiveness so also is the use of ICT and its tools, which have experienced tremendous growth in the recent past in various disciplines due to its vast effect on all facets of human

endeavours (ITU, 2018). The high demand placed on education by our society can be effectively responded to through the use of technological tools in all educational sectors in Nigeria. With the advancement in technology, digital resources such as; prints, audio, video and software among others can be used, re-used, adapted, copied and can be shared for free, since they are freely provided (Mulder, 2008). The advancement of Information and Communication Technology (ICT) and the Internet has been the driving force behind a new mode of teaching and learning which has transformed the entire academic setting and altered the educational equation in a fundamental way (Aduwa-Ogiegbaen, 2013). The price of textbooks and rising value of training at many institutions locally and internationally makes many lecturers not have interest or the funds to shop for more textbooks. Lecturers could not put together proper lecture materials due to unavailability, inaccessibility and unaffordability of present day academic sources such as textbooks, software programs, images, videos and open educational resources among others.

Open Educational Resources (OER) are approaches to cater for this problem and increase educational right of entry and fairness for teachers and students across the globe. It could lessen the cost of colleges and higher institutions, and the quality of methodology by way of ensuring that OER, which includes open textbooks, are freely obtainable for postsecondary courses and that OER-based degree pathways are broadly reachable in local and international higher institution (Atkin, Brown & Hammond, 2007). OECD explained OER as preferring digitised materials offered freely and openly for educators, students and self-learners to use and re-use for teaching, learning and research (OECD, 2007). OER is defined as "teaching learning, as research resources that reside in the public domain or have been released under an intellectual property licence that permits their free use and re-purposing by others (The William and Flora Hewlitt Foundation n.d).

Commonwealth of learning has adopted the widest definition of OER as materials offered freely and openly to use and adapt for teaching learning development and research (Muniyandi, 2022). Open Educational Resources (OER) are online academic materials which might be unfastened and freely to lay hands on, they are appropriate not only for higher institutions only but also for all levels consisting of primary and secondary education. Acker et al. (2014) defined OER as "…materials used to support education that may be freely accessed, reused, modified and shared by anyone" (Downes, 2013). OER may include full courses, course materials, modules, textbooks, videos, tests, software, and any other tools, materials or techniques used to support access to different kinds of knowledge. The complexity of the OER may vary from very simple (e.g., a single video clip or a single illustration) to rather complex (e.g., comprising a series of lessons).OER may be reused and repurposed to accommodate different desires and may be available in any medium, print, audio, video, digital. One key distinction between OER and other forms of educational resources is that OER has an open licence, which permits edition and reuse while not having to request the copyright holder (UNESCO). One of the main aims and objectives of UNESCO is to create awareness of OER, so that lecturers from different disciplines may know the importance of OER in the teaching and learning process.

As economies are now referred to as knowledge based, knowledge is regarded as one of the most important strategic resources in various facets of our day-to- day life. Organisations (commercial and academic) now base their capabilities on the distinct competencies in sharing and integrating information and knowledge. Majority of researchers and practitioners consider sharing knowledge positively related with the performance of the organisation by increasing the organisation's resources and reducing the time wasted in trial and error (Aamir et al, 2009). Knowledge sharing is an activity of sharing experiences and individual information in an

organisation (Mohajan, 2019). It takes. place as social interaction that involves the exchange of employee knowledge, experiences, and skills. throughout an organization by some form of communication. Sharing of knowledge is considered as one of the cardinal points of knowledge management; and to this end, it is a well discussed component of knowledge management. Sohail and Daud (2009) posited that knowledge sharing is a very important unit of the knowledge management system in any organisation. The vast availability of knowledge, especially through the use of information and communication technologies (ICTs), is increasing peoples' value for knowledge and by extension is contributing to the increasing importance of knowledge sharing. It has been identified in the literature that knowledge sharing is an important component of the knowledge management paradigm (Sohail and Daud, 2009). The knowledge-based nature of institutions of higher learning makes knowledge sharing very essential as most players (students, lecturers and administrators) in institutions of higher learning are knowledge workers and knowledge inclined. In the context of universities as a centre of knowledge, knowledge sharing among knowledge holders may help in improving knowledge status within the university environment, hence the need for this research.

In order for OER to become successful in education, we believe a sufficient amount of OER needs to be available and thus a sufficiently large community needs to be mobilised to share DLMs. OER should be available for different school types and on all possible subjects. Unfortunately, some scholars posit that practitioners have not deposited their OER in the quantity that would achieve critical mass for uptake (Davis et al., 2010). Sharing OER holds that no financial compensation is provided for the knowledge that is added to a repository. Stimulation of teachers to share their OER must thus be achieved by other means.

Perception utilizes sensory and cognitive processes to appreciate the world around us (McDonald, 2012). It is a unique way of understanding phenomena by interpreting sensory information. information based on experience, processing information, and forming mental models. Marin et al (2022) investigated the perception of faculty towards open educational resources; their findings revealed that the impact on individual OER adoption with regard to the individual control of diverse factors by faculty members; of institutional policies and quality measures on the externally determined factors (by the institution); and of institutional professional development and provision of incentives in more internally determined factors (by the faculty members themselves).

Self-efficacy refers to an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments (APA, 2009). Self-efficacy reflects confidence in the ability to exert control over one's own motivation, behavior, and social environment. These cognitive self-evaluations influence all manner of human experience, including the goals for which people strive, the amount of energy expended toward goal achievement, and likelihood of attaining particular levels of behavioral performance. Hilton (2016) revealed that the use of open educational resources such as textbooks, helped to improve the teaching and learning process by motivating students to perform better.

Attitude toward behaviour reflects one's favourable/ unfavourable feelings of performing a behaviour. Pawar (2017) defined attitude as the dynamic set of assumptions and values which are collectively shared in a social and personal scenario at a particular time. AQR (2013) described attitude as a set of beliefs or views held about something. Subjective norm reflects one's perception of relevant others' opinions on whether or not he or she should perform a particular behaviour. Perceived behavioural control reflects one's perceptions of the availability of resources or opportunities necessary for performing a behaviour (Ajzen and Madden, 1986). Attitude has long

been shown to be significant predictors of organisational behavioural intentions, and this relationship has received substantial empirical support. Bock, Zmud, Kim and Lee, (2005) conducted a survey with thirty organisations to test a knowledge sharing model, and the results suggested that attitude toward knowledge sharing positively and significantly influences behavioural intention. Also, based on the theory of reasoned action, Kwok and Gao (2005), investigated the attitude of individuals towards knowledge sharing by examining three variables, namely extrinsic motivation, absorptive capacity and channel richness as influential factors affecting people's attitude towards knowledge sharing. A structural survey was conducted to test the relationships between attitude and the three variables. The results showed that extrinsic motivation imposed no impact on an individual's attitude towards knowledge sharing while the other two factors played a significant part.

Utilization of open educational resources (OER) is becoming a global trend. The advent of new technology has made the world become a global village in information dissemination. The developed world has taken the lead in bringing information to the doorsteps of people. This age of technology is witnessing tremendous opportunities to access learning materials online. Teaching and learning sessions can now be accessed through online videos. Educational system is taking advantage of technology to assess learning resources. The developing world and Nigeria in particular is taking a great advantage of technology to access learning materials. Learning materials published as OER are widely available. Open educational resources (OER) could be described as the availability of learning resources to students, self - learners and educators, online. OER could further be explained as free access to learning materials without any hindrance, at no cost and with opportunities to compare and contrast educational programmes and course contents.

OER are teaching and learning materials that are freely available online for everyone to use, whether an instructor, student or self-learner. Examples of OER include: full courses, course modules, syllabi, lectures, home- work, assignments, quizzes, lab and classroom activities, pedagogical materials, games, simulations, and others (JISC OER n.d).

The momentum for developing more OER has never been greater. It is believed that the use and access alone are insufficient, because there is the need to focus on quality and the costs of producing more OER that are of good quality. Education is taking a great turn as far as accessibility to learning resources is concerned. Open courseware (OCW) websites could be accessed online, which has provided adequate opportunities to access learning materials, compare educational programmes and course contents. OER has tremendously enhanced the sharing of knowledge. Open Educational Resources (OER) movement originated from development in open and distance learning (ODL), and the wider context of a culture of open knowledge, free sharing and peer collaboration which emerged in the late 20th century (Willey 1998). The MIT OCW project is credited for having sparked a global OER movement after announcing in 2001 that it was going to put MIT'S entire course catalogue online and launching this project in 2002 (Willey 2006). Massachusetts Institute of technology (MIT) open courseware (OCW) is a web-based publication of virtually all MIT course contents. OCW is open and available to the world through OCW, educators improve courses and curricula, making their schools more effective; students find additional resources to help them succeed; and independent learners enrich their lives and use the content to tackle some of our world's most difficult challenges, including sustainable development, climate change, and cancer eradication (MIT Open Course ware n.d). The use of MIT OCW site and materials is subject to creative commons and other terms of use. In essence, in sharing the learning resources, it can be copied, distributed and transmitted. Furthermore in remixing the

resource, it can be adapted. Observations have shown that despite the level of understanding of usage of OER in developed nations the developing countries are still not putting into expected use, these online learning resources. It seems students are still not aware of the availability of OER, the level of accessing OER is minimal, and that there are a series of challenges facing the usage of OER. The purpose of this study was to examine lecturers' perceptions, self efficacy and attitude towards utilisation of open educational resources for knowledge sharing among college of education lecturers in Minna, Niger State.

1.2 Statement of the Research Problem

The world has experienced a shift towards a digital and dynamic age of internet and online web powered tools and materials as an infinite number of educational resources can now be obtained online with just the snap of a finger (World Bank, 2010). The Open Educational Resources which has allowed for the easy access and sharing of educational knowledge and information to lecturers to enhance and build upon existing knowledge which has concurrently led to self-improvement and updating of skills and knowledge. Open educational resources have been characterised to be online academic materials which might be unfastened and freely to lay hands on such as lecture notes, materials, videos, audio, research articles, journals, encyclopaedias, dictionaries etc. These Open education resources are capable of improving and enhancing the level of education hence directly enhancing the teaching and learning process. Falode (2018) noted that developing countries such as Nigeria are not utilizing open educational resources. Prasad and Usagawa (2014), revealed that lecturers are not aware of the existence of open educational resources. Hence, the need has risen to investigate lecturers' perception, self-efficacy and attitude towards utilization of open educational resources for knowledge sharing among college of education lecturers in Minna, Niger State.

1.3 Aim and Objectives of the Study

The aim of this study is to investigate lecturers' perception, self-efficacy and attitude towards utilization of open educational resources for knowledge sharing among college of education lecturers in Minna, Niger State. Specifically, the study will achieve the following objectives: To;

i. Examine the perception of lecturers towards the utilization of Open Educational Resources in college of education in Minna, Niger State
ii. Investigate the self-efficacy of lecturers towards the utilization of Open Educational Resources in college of education in Minna, Niger State
iii. Examine the attitude of lecturers towards the utilization of Open Educational Resources in college of education in Minna, Niger State
iv. Investigate the gender difference of lecturers in the utilization of Open Educational Resources in college of education in Minna, Niger State

1.4 Research Questions

The following research question were raised to guide this study:

1. What is the perception of lecturers towards the utilization of Open Educational Resources in college of education in Minna, Niger State?
2. What is the level of self-efficacy of lecturers towards the utilization of Open Educational Resources in college of education in Minna, Niger State?
3. What is the attitude of lecturers towards the utilization of Open Educational Resources in college of education in Minna, Niger State?

1.5 Research Hypothesis

The following null hypotheses were formulated and tested at 0.05 level of significance

$H0_1$: There is no significant difference of male and female lecturer's perception towards the utilization of Open Education Resources in colleges of Education in Minna, Niger State.

$H0_2$: There is no significant difference of male and female lecturers' self-efficacy towards the utilization of Open Education Resources in colleges of Education in Minna, Niger State.

$H0_3$: There is no significant difference of male and female lecturer's attitude towards the utilization of Open Education Resources in colleges of Education in Minna, Niger State.

1.6 Significance of the Study

The result of this research will be of immense importance or benefit to lecturers, students, parents, government and the society at large in the following ways:

The result of this research work will help improve lecturers' perception, self-efficacy and attitude towards the usage of open educational resources for knowledge sharing to enhance the teaching and learning process. Lecturers will likely consult this study to enhance their level of understanding on the utilization of open educational resources.

The findings of this study will help enhance the learning of students by offering the merits of the use of open educational resources for knowledge sharing. The use of open educational resources during lectures and academic sessions will help enhance the teaching and learning process.

The result of this research will be of immense benefit to parents and the society at large since parents will realize the importance of open educational resources and develop the needed interest to support the utilisation of open educational resources. Parents will also realize the importance of open educational resources and how it directly stimulates their wards and provide efficiency during

learning and also to the society since it will improve literacy level and build adequate comprehension and understanding skills.

Furthermore, this research work will serve as a reference source to the government when formulating and implementing policies that will improve teacher's competency with a view of making learning easier and enhancing national growth.

1.7 Scope of The Study

This study will focus on the lecturers perception, self-efficacy and attitude towards utilization of open educational resources for knowledge sharing among college of education lecturers in Minna, Niger State. It involves gathering reliable data from lecturers on their perceptions, self-efficacy and attitudes towards the utilization of open educational resources for knowledge sharing from the College of Education, Minna, Niger State. This study will cover all the lecturers from the College of Education, Minna, Niger State and will last for a period of four (4) weeks.

1.8 Operational Definition of Terms

Open educational Resources: are defined as "teaching learning, as research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others.

Self-efficacy: refers to an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments

Attitude: can be defined as the dynamic set of assumptions and values which are collectively shared in a social and personal scenario at a particular time.

Perception: it utilises sensory and cognitive processes to appreciate the world around us

Knowledge sharing: It is an activity of sharing experiences and individual information in an organization.

Utilization: taking advantage of technology to assess learning resources

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Conceptual Framework

2.1.1 Nature and Scope of Educational Technology

Educational technology is a broad field, therefore one can find many definitions; Educational technology can be considered either as a design science or as a collection of different research interests addressing fundamental issues of learning, teaching and social organization (Setiyawan, 2016). The Association for Educational Communications and Technology (AECT), defines Educational technology as the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources Hlynka and Jacobsen (2010). As a field, educational technology emphasizes communication skills and approaches to teaching and learning through the judicious use and integration of diverse media. Scholars in the field examine the uses of innovative media and technologies for education, examining all aspects from direct student learning to management and impacts on institutions. As in all forms of applied technology, the field studies how theoretical knowledge and scientific principles can be applied to problems that arise in a social context (OECD, 2016). Practitioners in educational technology seek new and effective ways of organizing the teaching and learning process through the best possible application of technological developments. These activities rely upon a body of knowledge for successful and ethical implementation, rather than routine tasks or isolated technical skills.

UNESCO () noted that the Modern age is the age of science and technology, the world of today is very dynamic. The life of man in the primitive age was altogether different from his life in this sputnik age. There have been tremendous changes in the lifestyle of human beings which may be attributed to the contribution of science and technology, science has extended the frontiers of our knowledge in various ways and directions. Science is considered to be a blessing to mankind. Nothing better has happened than the advent of science in man's life. The contribution of science and technology has been experienced in almost all the spheres of human life including education. Before understanding the meaning of educational technology it is essential to know the meaning of technology. The word 'technology' has been taken from the Greek word (techniques) which means an art and which is related with skill and dexterity. The term 'technology' implies the application of science to art. The concept of technology has developed during the last few years. It is a new area in the discipline of education. Educational technology consists of two words: education and technology. When we apply the science of learning and communication to teaching we evolve a technology (Lathan, n.d). There are three major factors that emphasize the linking of education with technology.

(i) Explosion of population.

(ii) Explosion of new knowledge.

(iii) Explosion of scientific and technological development.

Educational Technology is concerned with the development, application, and evaluation of systems, techniques and aids to improve the process of human learning (Kurt, 2017). It could be conceived as a science of techniques, methods and media by which educational goals could be realised. Generally the term "Technology" denotes the systematic application of the knowledge of

science to practical tasks in industry. Hence, “Educational Technology” may be roughly defined as the systematic application of the knowledge of sciences to practical tasks in Education (Maheshwari, 2016). It is not primarily concerned with the task of prescribing the goal although it does help in specifying the goals and translating them in behavioral terms. It is a communication process resulting from the adaptation of the scientific method to the behavioral science of teaching/learning. Educational Technology is widely accepted as the application of system approach in the systematic design of a learning system to bring about improvement in teaching-learning evaluation process (Buabeng-Andoh, 2012).

It is not an end in itself but a means to accomplish some educational and instructional objectives already determined and clearly defined. It tries to make the whole teaching-learning process more and more meaningful for both the teachers and the learners (OECD, 2016). It modifies the teacher's method of teaching and the learner's behaviour for their own betterment and for the betterment of mankind. It is not the same thing as instruction or education or learning but an aggressive invention which includes in itself everything that helps in shaping personality. Earlier the Concept of Educational Technology was used as a synonym to audio-visual aids like pictures, charts, maps, and models meant for direct teaching-learning. With the advent of physical science and electronic revolution there came an era of hardware and software like projectors, tape- recorders, radio and T.V. etc (Oscarjr, 2019). Then came the age of mass media which led to massive communication revolution for instructional purposes with the advent of programmed instruction and programmed learning, a new dimension of educational technology came into existence it has individualized the process of education and introduced a system of self-learning in the form of self- instructional material and teaching machine. The concept of programmed learning added another dimension to

the meaning of educational technology with some new devices and approaches such as Micro-teaching (BlitzLondon, 2012).

The basis of educational technology is science, it studies the effect of science and technology on education. In other words, science and technology are used under educational technology. Hence, it is the practical aspect of science (Raja & Nagasubramani, 2018). Educational Technology is a continuous dynamic, progressive and effect-producing method, new conceptions are possible only due to educational technology such as programmed learning, micro-teaching, simulated teaching, interaction analysis, video-tape, tape-recorder, projector and computer, etc. Educational Technology accepts schools as a system. In this system, the school-building, furniture and teachers act as input while various methods, techniques, strategies and the teaching and examination with the help of audio-visual aids function in the form of a process (University of Sargodha, n.d). Nwadiokwu (2018) noted the following 4 M's are the major components of Educational Technology:-

(i) Methods, (ii) Materials, (iii) Media, (iv) Manpower.

(i) Methods: It is concerned with the devices such as Programmed Learning Team Teaching, Micro Teaching, Personalized System of Instruction in Teaching Learning situations.

(ii) Materials: Instructional materials such as Programmed Text books the material of this type may be handwritten or printed.

(iii) Media: The media used here are audio, or visual or audiovisual. A few examples are radio, tape recorder, charts, films, educational television etc.

(iv) Man Power: Man power controls educational technology in every way. Educational Technology without man is zero.

Educational technology is a process- oriented technique. Educational technology is not limited to teaching and learning process and theories still teaching-learning process is influenced much more by educational technology (Stosic, 2015). Theories have been shifted from learning to teaching only due to educational technology. If the educational technology is limited to audio-visual aids, mechanical and electronic gadgets the scope of educational technology becomes limited, but educational technology is not limited to all these things rather, it pervades all over. Educational Technology is as wide as Education itself. Educational Technology implies the use of all educational resources – Men, Materials, Methods and Techniques, Means and Media in an integrated and systematic manner for optimized learning.

2.1.2 The Nature of Information and Communication Technology (ICT)

ICT stands for "Information and communication Technology. It means the technologies that provide access to information through telecommunications. And also can be defined as a diverse set of technological tools and resources used to communicate, create, disseminate, store, and manage information." (Reddick, 2009) It is similar to Information Technology (IT) but focuses primarily on Communication Technologies. These technologies include the internet, computers, wireless networks, cell phones, and other communication mediums. Information and Communication Technology have provided society with a vast array of new communication capabilities. For example, people can communicate in real-time with others in different countries using technologies such as instant messaging, voice over and video conferencing. Social networking websites like facebook allow users from all over the world to remain in contact and communicate on a regular basis. (TechTerms, 2010)

Modern Information and Communication Technologies have created a “global village,” in which people can communicate with others across the world as if they were living next door. For these reasons, ICT is often studied in the context of how modern communication technologies affect society (Khan et al., 2015). In recent years, there has been an increase in happiness for the people over their interest in how computers and the internet can best be used to improve the efficiency and effectiveness of Communication and education at all levels and both formal and non formal settings. But ICTs are more than just these technologies; older technologies such as the telephone, radio and television, although now given less attention, have a longer and richer history as instructional tools. For instance, radio and television have for over forty years been used for open and distance learning, although print remains the cheapest, most accessible and therefore most dominant delivery mechanism in both developed and developing countries (Merkezi, n.d). The use of computers and the internet is still in its infancy in developing countries.

The nature and scope of ICT capability is not fixed, but is responsive to ongoing technological developments. This is evident in the emergence of advanced internet technology over the past few years and the resulting changes in the ways that students construct with others. Students develop capability in using ICT for tasks associated with information access and management, information creation and presentation, problem solving, decision making, communication, creative expression, and empirical reasoning (AustralianCurriculum, n.d). This includes conducting research, creating multimedia information products, analyzing data, designing solutions to problems, controlling processes and devices, and supporting computation while working independently and in collaboration with others. Students develop knowledge, skills and dispositions around ICT and its use, and the ability to transfer these across environments and applications. They learn to use ICT with confidence, care and consideration, understanding its possibilities, limitations and impact on

individuals, groups and communities. Information and Communication Technology is often used as an extended synonym or as an umbrella term for Information Technology (IT), but it is a most specific term that stresses the role unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information (Markauskaite, 2006). The term ICT is also used to refer to the convergence of audio-visual and telephone networks with computer networks through a single cabling or link system. To some scholars, ICT has no universal definition, as "the concepts, methods and applications involved in ICT are constantly evolving on an almost daily basis." (Alverman & Mallozzi, 2010). The broadness of ICT covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form, e.g. personal computers, digital television, email, robots;" (Marialynn, 2015) therefore, one can say that ICT is concerned with the storage, retrieval, manipulation, or receipt of digital data." ICT delineates how these various forms of digital mediums interact with one another.

Information and Communication Technology can contribute to universal access to education, equity in education, the delivery of quality learning and teaching, teacher's professional development and more efficient education management, governance and administration. (UNESCO, n.d) UNESCO helps a lot in promoting ICT in education. In modern societies, ICT is ever-present, with over three billion people having access to the internet. With approximately 8 out of 10 internet users owning a smartphone, information and data are increasing by leap and bounds. This rapid growth, especially in developing countries, has led ICT to become a keystone of everyday life, in which life without some facet of technology renders most clerical work and routine tasks dysfunctional.

Ogbomo (2012) observed that there are 4 broad issues which must be addressed when considering the overall impact of the use of ICT in education, they are: - Effectiveness, Cost, Equity and Sustainability.

i. Effectiveness: effectiveness of ICT depends on how they are used and for what purpose. ICTs do not work for everyone, everywhere in the same way. It also helps to enhance access to basic education since most of the interventions for this purpose have been small-scale and under-reported. Assessments of the use of computers, the internet and related technologies for distance learning have been equivocal (Hewson & Charlton, 2019). A research claim that there is "no significant difference" between the test scores of learners taking ICT-based distance learning courses and those receiving face-to-face instruction (Paul, 2019). Others claim that such generalizations are inconclusive; pointing out that the large number of articles on ICT-based distance learning does not include original experimental research or case studies. Other critics argue that dropout rate is much higher when instruction is delivered at a distance via ICTs.

There have also been many studies that seem to support the claim that the use of computers enhances and amplifies existing curricula, as measured through standardized testing (Johnson, 2016). With the use of ICTs, students learn more quickly, demonstrate greater retention, and are better motivated to learn when they work with computers. Research likewise suggests that the use of computers, the internet, and related technologies, given adequate teacher training and support, can indeed facilitate the transformation of the learning environment into a learner-centered one (Ghavifekr, 2015). But these studies are criticized for being mostly exploratory and descriptive in nature and lacking in empirical rigor. There is as yet no strong evidence that this new learning environment fosters improved learning outcomes (Barett, 2019). What does exist are qualitative data based on observations and analysis of student and teacher perceptions that suggest a positive

impact on learning. One of the most critical problems in trying to assess the effectiveness of computers and the internet as transformational tools is that standardized tests cannot capture the kinds of benefits that are expected to be gained in a learner centered environment (Fu, 2013). Moreover, since technology use is fully integrated into the larger learning system, it is very difficult to isolate the technology variable and determine whether any observed gains are due to technology use or to some other factor or combination of factors

ii. Cost: Broadly speaking, television broadcasts and computer-based and online learning are more expensive than radio broadcasts. There is a disagreement whether television broadcasts are cheaper than computer-based and online learning. Categorically, assessments of cost-effectiveness are difficult to make because of lack of data, differences in programs, problems of generalization, and problems of quantification of educational outcomes and opportunity costs (Magaji, 2012). A common mistake in estimating the cost of a particular ICT educational qualification is to focus too much on initial fixed costs, purchase of equipment, construction, initial materials production, and the like. But studies of the use of computers in the classroom shows that installation of hardware and retrofitting of physical facilities account for between 40% to 60% of the full cost of using the computers over their lifetime, Or its total cost of ownership (Ssempebwa , 2013). At times, it may seem that the initial purchase of hardware and software is the costliest part of the process. Another dimension of cost is location, or who will pay for what. In projects that involve computers connected to the internet, either student bears the variable cost related to operations such as maintenance, internet service charges. And telephone in line charges. With radio programming the learner has to pay only for a radio and a set of batteries.

iii. Equity: ideally, one wishes for equal opportunity to participate. But access for different actors-both as users and producers is weighted by their resources. Hence initial differences are often

reproduced. Reinforced, and even magnified a formidable challenge, therefore continue to face planners of international education: how to define a problem and provide assistance for development. Women have less access to ICTs and fewer opportunities for ICT-related training compared to men because of illiteracy and lack of education, lack of time, lack of mobility, and poverty (Wadi & Alexandra, 2002). Boys are more likely than girls to have access to computers everywhere. Boys tend to enjoy working with computers more than girls. As the American association university report, "girls have narrowed some significant gender gaps, but technology is now the new 'boys' club' in our nation's public schools. While boys program and problem solve with computers, girls use computers for work processing." (Blastedgist, 2016). Despite the effort to make the program gender neutral, gender inequalities in access persist in Uganda and Ghana. "High students -to- computer ratios and first come first serve policies do not favor girls, girls have earlier curfew hours and domestic chore responsibilities which limits their access time, and local patriarchal beliefs tend to allow boys to dominate the computer lab environment." (Blastedgist, 2016) Measures proposed to address this gender bias include encouraging schools to develop "fair use" policies in computer labs. Girls also need to have female role models to inspire them to participate in technology related activities.

iv. Sustainable: Ogbomo (2011) argued that one aspect of development that is often neglected is sustainability. The long history of development aid has shown that too many project and program start with a bang but all too soon fade out with a whimper, to be quickly forgotten.in many instances, these project are initiated by third party donors such as international aid agencies or corporations and not enough attention is paid to establishing a mechanism by which educational institution or community involved can pursue the project on its own or in partnership with other stakeholders after the initiating donor exits. But cost and financing are not the only barriers to

sustainability. According to Cisler, the sustainability of ICT has four components: social, political, technological and economic.

2.1.3 What are open educational resources

Open Educational Resources (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 (UNESCO, n.d). OER forms part of 'Open Solutions', alongside Free and Open Source software (FOSS), Open Access (OA), Open Data (OD) and crowdsourcing platforms. The idea of open educational resources (OER) has numerous working definitions, the term was first coined at UNESCO's 2002 Forum on Open Courseware and designates "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" (UNESCO, 2019)

Often cited is the William and Flora Hewlett Foundation (2022) which defined OER as 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 and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge. The Hewlett Foundation updated its definition to "Open Educational Resources 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" (UNESCO, 2021). The new definition explicitly states that OER can include both digital and non-digital resources. Also, it lists several types of use that OER permits, inspired by 5R activities of OER.

5R activities/permissions were proposed by David Wiley (Nova SouthEastern University, 2021), which include:

- Retain – the right to make, own, and control copies of the content (e.g., download, duplicate, store, and manage)
- Reuse – the right to use the content in a wide range of ways (e.g., in a class, in a study group, on a website, in a video)
- Revise – the right to adapt, adjust, modify, or alter the content itself (e.g., translate the content into another language)
- Remix – the right to combine the original or revised content with other material to create something new (e.g., incorporate the content into a mashup)
- Redistribute – the right to share copies of the original content, your revisions, or your remixes with others (e.g., give a copy of the content to a friend)

Users of OER are allowed to engage in any of these 5R activities, permitted by the use of an open license.

The Organisation for Economic Co-operation and Development (OECD) defines OER as: "digitised 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 licences". (OECD, 2007) By way of comparison, the Commonwealth of Learning "has adopted the widest definition of Open Educational Resources (OER) as 'materials offered freely and openly to use and adapt for

teaching, learning, development and research'". The WikiEducator project suggests that OER refers "to educational resources (lesson plans, quizzes, syllabi, instructional modules, simulations, etc.) that are freely available for use, reuse, adaptation, and sharing'.

UNESCO (n.d) noted that the above definitions expose some of the tensions that exist with OER:

- Nature of the resource: Several of the definitions above limit the definition of OER to digital resources, while others consider that any educational resource can be included in the definition.
- Source of the resource: While some of the definitions require a resource to be produced with an explicit educational aim in mind, others broaden this to include any resource which may potentially be used for learning.
- Level of openness: Most definitions require that a resource be placed in the public domain or under a fully open license. Others require only that free use to be granted for educational purposes, possibly excluding commercial uses.

These definitions also have common elements, namely they all:

- cover use and reuse, repurposing, and modification of the resources;
- include free use for educational purposes by teachers and learners
- encompass all types of digital media.

Given the diversity of users, creators and sponsors of open educational resources, it is not surprising to find a variety of use cases and requirements. For this reason, it may be as helpful to consider the differences between descriptions of open educational resources as it is to consider the descriptions themselves (OECD, 2007). One of several tensions in reaching a consensus description of OER (as found in the above definitions) is whether there should be explicit emphasis placed on specific technologies. For example, a video can be openly licensed and freely used

without being a *streaming* video. A book can be openly licensed and freely used without being an *electronic* document. There is also a tension between entities which find value in quantifying usage of OER and those which see such metrics as themselves being irrelevant to free and open resources (Orr et al., 2015). Those requiring metrics associated with OER are often those with economic investment in the technologies needed to access or provide electronic OER, those with economic interests potentially threatened by OER, or those requiring justification for the costs of implementing and maintaining the infrastructure or access to the freely available OER. While a semantic distinction can be made delineating the technologies used to access and host learning content from the content itself, these technologies are generally accepted as part of the collective of open educational resources (Neil et al., 2015).

Since OER are intended to be available for a variety of educational purposes, *most* organizations using OER neither award degrees nor provide academic or administrative support to students seeking college credits towards a diploma from a degree granting accredited institution. In open education, there is an emerging effort by some accredited institutions to offer free certifications, or achievement badges, to document and acknowledge the accomplishments of participants (OECD, 2012). In order for educational resources to be OER, they must have an open license. Many educational resources made available on the Internet are geared to allowing online access to digitised educational content, but the materials themselves are restrictively licensed. Thus, they are not OER. Often, this is not intentional. Most educators are not familiar with copyright law in their own jurisdictions, never mind internationally. International law and national laws of nearly all nations, and certainly of those who have signed onto the World Intellectual Property Organization (WIPO), restrict all content under strict copyright (unless the copyright owner

specifically releases it under an open license). The Creative Commons license is the most widely used licensing framework internationally used for OER.

Advantages of using OER include:

- Expanded access to learning – can be accessed anywhere at any time
- Ability to modify course materials – can be narrowed down to topics that are relevant to course
- Enhancement of course material – texts, images and videos can be used to support different approaches to learning
- Rapid dissemination of information – textbooks can be put forward quicker online than publishing a textbook
- Cost saving for students – all readings are available online, which saves students hundreds of dollars

Disadvantages of using OER include:

- Quality/reliability concerns – some online material can be edited by anyone at anytime, which results in irrelevant or inaccurate information
- Limitation of copyright property protection – OER licenses change "All rights reserved." into "Some rights reserved.",[42] so that content creators must be careful about what materials they make available
- Technology issues – some students may have difficulty accessing online resources because of slow internet connection, or may not have access to the software required to use the materials

McGreal et al. (2013) argued that Open educational resources often involve issues relating to intellectual property rights. Traditional educational materials, such as textbooks, are protected

under conventional copyright terms. However, alternative and more flexible licensing options have become available as a result of the work of Creative Commons, a non-profit organization that provides ready-made licensing agreements that are less restrictive than the "all rights reserved" terms of standard international copyright. These new options have become a "critical infrastructure service for the OER movement." Another license, typically used by developers of OER software, is the GNU General Public License from the free and open-source software (FOSS) community. Open licensing allows uses of the materials that would not be easily permitted under copyright alone (North, 2017).

Types of open educational resources include full courses, course materials, modules, learning objects, open textbooks, openly licensed (often streamed) videos, tests, software, and other tools, materials, or techniques used to support access to knowledge. OER may be freely and openly available static resources, dynamic resources which change over time in the course of having knowledge seekers interacting with and updating them or a course or module with a combination of these resources (Weller et al., 2016).

In response to COVID-19, the Principal Institute has partnered with Fieth Consulting, LLC, California State University's SkillsCommons and MERLOT to create this FREE online resource hub designed to help Administrators, Teachers, Students, and Families more effectively support teaching and learning online (Reimers, 2020).

- Resources for Leaders
- Resources for Teachers
- Learner Resources
- Resources for Families of Online Learners

Several universities of higher education, initiated OER : notable OER sites are Open Michigan, BCcampus Open Textbook collection, RMIT, Open access at Oxford University Press, Maryland Open Source Textbook (M.O.S.T.), OpenEd@UCL, OER initiative by the University of Edinburgh, etc. There were several initiatives taken by faculties of higher education, such as Affordability Counts by faculties across Florida state universities and colleges and Affordable Learning Georgia which is across public Georgian institutions (Publishers, 2020). The North Dakota University System was appropriated funding from the North Dakota state legislature to train instructors to adopt OER and has a repository of OER.

With the advent of growing international awareness and implementation of open educational resources, a global OER logo was adopted for use in multiple languages by UNESCO. The design of the Global OER logo creates a common global visual idea, representing "subtle and explicit representations of the subjects and goals of OER". Its full explanation and recommendation of use is available from UNESCO (Saleem, 2012).

2.1.4 Knowledge Sharing at Tertiary Institutions

Knowledge is widely considered to be an essential commodity to organizations, resulting in competitive advantage (Kukko, 2013; Bello & Oyekunle, 2014). Knowledge sharing provides a means to align organizational goals with knowledge, leading to growth and further competitive advantages (Amayah, 2013; Howell and Annansingh, 2013). Knowledge sharing has been widely typically discussed in relation to for-profit organizations, but it is important to consider that knowledge plays a vital role to higher education institutions (tertiary institutions), and thus they could benefit from established knowledge sharing procedures. Universities are in the business of generating and disseminating knowledge (Cheng et al., 2009; Omerzel et al., 2011). With this in mind, it has become evident to such institutions that knowledge sharing is a valuable tool to meet

organizational goals (Loh et al., 2010). A primary knowledge sharing process that impacts the success of knowledge sharing programs is knowledge sharing (Amayah, 2013; Fullwood et al., 2013). However, some research suggests that knowledge sharing continues to be an area that is under-researched compared to the other knowledge sharing processes (Jain et al., 2007; Amayah, 2013; Fullwood et al., 2013). Knowledge-sharing culture, trust, and motivations are considered vital enablers for knowledge sharing within an organization (Ipe, 2003). Therefore, creating the appropriate environment and culture to share knowledge freely among workers is vital to the success of organizations (Suhaimee et al., 2006). This also is true for tertiary institutions. Whilst one might assume that due to the nature of tertiary institutions, knowledge sharing would be intrinsic to the institutional culture, some research suggests that this is not necessarily so, and that knowledge sharing may be complicated due to several factors (Alotaibi et al., 2014). While there has been a large number of studies focused on inhibitors to knowledge sharing among employees that have addressed knowledge sharing and some of its determinants (McAdam et al., 2012; MagnierWatanabe and Senoo, 2010), little has been focused on understanding this within the tertiary institutions context. In this respect, faculty members in tertiary institutions play a key role in producing and reusing their knowledge and intellectual property through research and teaching (Kim and Ju, 2008). Consequently, sharing knowledge, expertise, and resources among academics has long been vital to the success of universities (Ramayah et al., 2013). Despite this, there is limited research on knowledge sharing in the context of knowledge-intensive organizations such as tertiary institutions, especially those that consider relevant cultural factors in developing nations (Fullwood et al., 2013; Goh and Sandhu, 2013; Howell and Annansingh, 2013; Kim and Ju, 2008; Wang and Noe, 2010). This is a central concern, as cultural factors can have a tremendous impact on institutional culture and on how factors such as knowledge sharing are perceived (Arntzen and

Worasinchai, 2012; Kukko, 2013; Riege, 2005; Santos et al., 2012; Sharma et al., 2012). With the above in mind, the aim of this paper is to examine cultural and other associated institutional factors through reviewing existing research on knowledge-sharing culture determinants among academics within tertiary institutions. Given the paucity of research on this issue, identifying opportunities for additional research on this subject is a key goal of this paper. In doing so, through using a profiling approach, the paper will attempt to highlight the most frequently researched determinants of knowledge-sharing culture in the business and higher learning institution sectors.

Knowledge has become increasingly critical for organizations in terms of gaining a competitive advantage as they strive to compete in the knowledge-based era (Iqbal et al., 2011; Wei-Li et al., 2009; Nielsen and Cappelen, 2014)). To gain this edge, organizations elect to utilize available tools and strategies to systematically manage, store, and disseminate organizational knowledge (Begoña Lloria, 2008; Wang and Noe, 2010). As a result, interest in knowledge sharing has become a strategic agenda item for public and private sector leaders and managers (Ragab and Arisha, 2013). Nielsen and Cappelen (2014) noted that "knowledge creation is vital to organisations of all kinds". In order to gain the desired benefit from knowledge sharing programs, senior management must consistently aim to encourage knowledge-sharing behavior and institute the appropriate culture needed for such activity (McAdam et al., 2012). Despite several attempts to define knowledge sharing in the literature, it continues to be a much debated topic among academics and practitioners depending on the context and perspective it is used in (Cabrera and Cabrera, 2002; Wang and Noe, 2010; Nielsen and Cappelen, 2014). Knowledge sharing in the context of work is described as the exchange or dissemination of explicit or tacit data, ideas, experiences, or technology between individuals or groups of employees (Cabrera and Cabrera, 2002; Wang and Noe, 2010). Yi (2009) described knowledge sharing at work as a set of behaviors that involves the sharing of one

employee's work-related knowledge with another employee with the aim of achieving organizational goals. Amayah (2013) added that knowledge sharing focuses on the knowhow type of knowledge to help others and solve problems within the organization. Other terms such as "knowledge exchange" and "knowledge transfer" are used interchangeably.

Wang and Noe (2010) clarified that knowledge exchange involves two parties, the knowledge contributor and the knowledge searcher, while knowledge transfer refers only to the movement of knowledge across an organization and not between individuals (Szulanski et al., 2004, as cited in Wang and Noe, 2010). Determinants of knowledge sharing Establishing an actively cultivated knowledge-sharing environment is essential to effective knowledge sharing across an organization (Jolaee et al., 2014; Taylor, 2013; Zhenyuan et al., 2016). Wei-Li et al. (2009) commented that knowledge sharing "is one of the most important managerial concerns in organizations as it creates a competitive advantage in the knowledge economy". Furthermore, Smith and McKeen (2003) described knowledge sharing as one in which ideas are freely challenged, and knowledge learned and applied, and where willingness to share knowledge and teach others is the norm. Many previous studies examined knowledge sharing from technological, organizational, and individuals' behaviors perspectives. While much of the discussions have been closely tied on individuals' behaviors (Yi, 2009), the technological part has been focused on systems and tools to facilitate sharing. In addition, much of the discussions in these domains maintained some cultural perspectives (i.e. national, organizational, individual, team climate), motivations, incentives, trust, and individual identity. Therefore, individual, organizational, and associated behavioral elements need to be considered as much as relevant to the goals of knowledge sharing compared to the technological one.

Technological determinants Technology plays a major role in facilitating knowledge sharing (Riege, 2005). Terms such as “information technology” (IT), “information systems” (IS) and “knowledge sharing systems” are widely used in the literature when referring to knowledge sharing. These terms frequently appear in the literature because they are considered key enablers of knowledge sharing (Berlanga et al., 2008; Seba et al., 2012). However, a match between the technology and an employee’s need to promote all types of communication methods was underlined in the published work (Tsai et al., 2013). The promotion of knowledge sharing through IT was evident in several empirical studies (Ahmad and Daghfous, 2010; Kanaan and Gharibeh, 2013; Sharma et al., 2012; Siddique, 2012) Other studies examined the relationship between IT, trust, and culture in promoting organizational knowledge sharing (Golden and Raghuram, 2010; Siddique, 2012). These authors commonly concluded that IT support and infrastructure were secondary to trust and a good knowledge-sharing culture in knowledge sharing. In other words, IT or knowledge sharingS cannot alone achieve effective knowledge sharing in the absence of factors such as trust, culture, organizational climate, and leadership support. In fact, some studies found that systems and technology tools had a detrimental impact on knowledge sharing. Some factors contributing to this barrier included unrealistic expectations of technology, a lack of training on the system, and a poor usability and design of the system. Organizational management plays an important role in selecting the correct technology to fit the existing organizational culture (Seba et al., 2012; Tsai et al., 2013).

Factors related to people and organizations have dominated knowledge-sharing research, some more so than others have. The role of larger culture in shaping attitudes toward knowledge sharing and organizational culture is a prominent component of the research. In the next section, widely cited people and organization factors are highlighted. Organizational culture has been the focus of

several studies (Magnier-Watanabe and Senoo, 2010; Nguyen and Mohamed, 2011; Sanz-Valle et al., 2011; Tong et al., 2013). Authors established several dimensions that affect knowledge-sharing behavior including trust, national culture, leadership, organization structure, and organizational learning. Subcultures, organizational climate, team culture, and professional group culture were examined in relation to knowledge sharing (Chen et al., 2010; Jackson et al., 2012; McAdam et al., 2012; Magnier-Watanabe and Senoo, 2010). A significant number of these studies were conducted in Chinese culture, and found that different levels of culture have a direct influence on knowledge-sharing behavior. For example, McAdam et al. (2012) examined the role of culture in knowledge-sharing processes at different organizational levels in Chinese organizations by developing an integrated cultural framework. They showed that Chinese culture at the corporate, group, and individual level influences knowledge-sharing processes. Similarly, Ardichvili et al. (2006) examined the impact of national culture factors on knowledge-sharing strategies in online communities of practice (COP) in three different countries (Brazil, China and Russia). They outlined that knowledge sharing programs are influenced by the values and cultural preferences of workers.

Li et al. (2006) examined organizational culture and factors that impact on online knowledge sharing between American and Chinese participants in Fortune 100 companies. The authors established that sharing knowledge is influenced by national culture differences across organizations and Behavioral and motivational determinants In order to encourage knowledge-sharing behavior, many enablers and success factors in this behavior are discussed throughout the literature. For example, the interrelation between trust and a knowledge-sharing culture has been the subject of many studies (Alam et al., 2009; Aulawi et al., 2009; Casimir et al., 2012; Wang and Noe, 2010; Wickramasinghe and Widyaratne, 2012). Across research, rewards (extrinsic and

intrinsic), innovation, leadership, incentives, technology, commitment, demographic profiles, and job satisfaction were all found to influence knowledge sharing in the business sector (Alam et al., 2009; Arzi et al., 2013; Aulawi et al., 2009; Kanaan and Gharibeh, 2013; Kathiravelu et al., 2013; Tong et al., 2013; Von Krogh et al., 2012; Wang and Wang, 2012; Wickramasinghe and Widyaratne, 2012).

2.1.5 Lecturer's perception on the utilization of open education resources

Access to good quality educational materials has been a major problem for teachers and students in developing countries. Even in the developed world the cost of textbooks is prohibitive. In recent times, Open Educational Resources (OER) have emerged as one of the innovative teaching-learning practices. Educational institutions are taking note of this innovation, and trying to leverage its advantages. While teachers are major producers of educational materials in the form of class notes, handouts, presentations, articles, books, etc, many do not share these with others. This is primarily due to lack of understanding of copyright and open licensing issues. With the emergence of Creative Commons as an instrument for facilitating open sharing of educational material, more teaching and learning resources should be available as OER.

Most educational resources are prepared by teachers to help their students in specific contexts, and availability of these openly would foster knowledge generation. Thus, it is important to understand teachers' perceptions about OER to facilitate development of OER in diverse fields of knowledge. In a rapidly changing and globalising world, many initiatives to modernise education and to optimise student learning have been launched in schools around the world. Language teaching in general, and second-language teaching in particular, has been a fertile ground for such modernisation and optimisation initiatives. In English as a Second Language (ESL) contexts such as Sub-Saharan Africa (SSA) where language teaching occurs in multilingual contexts, with a

dearth of a clear nexus between existing language in education policy and actual classroom practice, the need to constantly innovate and (re)train language teachers on such innovations has always been felt. The general goal of such educational innovations is the creation of powerful learning environments capable of realising the main goals of modern education, namely the acquisition of high-quality knowledge, problem-solving skills, self-directed learning skills, and transferability of knowledge and skills (Konigs, Brand-Gruwel & van Merriënboer, 2007).

Because of the unique and pivotal position occupied by teachers in the teaching and learning process, investigating their perceptions on the potential of ORELT materials in improving the teaching of English provides useful insights into the extent to which the materials have been successfully adopted, implemented and used as teaching resources. Additionally, they can provide information about the current state of the implementation and its agreement with the original design, thereby providing useful feedback to the designers of the innovation (in this case, the Commonwealth of Learning) on the feasibility or otherwise of the innovation. This paper, therefore, reports on the perceptions of Kenyan Junior Secondary School (henceforth, JSS) teachers with regard to the feasibility or otherwise of ORELT materials in improving teaching of English in Kenyan schools. The Open Resources for English Language Teaching (ORELT) is a project by the Commonwealth of Learning, Canada, intended to support the classroom activities of teachers in JSSs. The aims of ORELT are to provide a bank of 'open content' multimedia resources in online, offline and traditional text formats that will support school-based education and training for JSS teachers; provide 'open content' support resources for teacher educators who train teachers for JSS; and to provide a forum for the exchange of ideas and experiences and sharing of ELT resources among teachers and teacher educators across the Commonwealth.

Scholars have also looked at teachers' perceptions of OER materials. Some studies have suggested that teachers may perceive OER as more useful than traditional, copyrighted materials. Kimmons (2015) asked K-12 teachers to judge the effectiveness of their traditional textbook, an open textbook, and an open textbook that they adapted themselves. The results indicated that open textbooks were rated 22% higher than copyrighted textbooks. Furthermore, the open/ adapted textbooks were rated 16% higher than the open textbooks and 38% higher than the copyright-restricted textbooks. Open textbooks were rated as superior, and adapting the OER materials was of even higher value. Kimmons (2015) argued that adapting the resources was key to the effectiveness of OER materials because K-12 teachers "are the only professionals qualified to recognize the needs of their students and the realities that they face in their classrooms." Another study by De los Arcos, Farrow, Pitt, Weller and McAndrew (2016) found that teachers rarely use an OER without personalizing it to suit their students' needs. This study seemed to highlight the agency of individual teachers in manipulating open educational resources to work effectively for the students in their classrooms, and, in that way, the study reinforced Kimmons' (2015) argument that teachers' understanding of their students' needs is intimately related to their adaptation of OER materials.

Serendipitously, there is a growing interest among colleges in lowering cost of attendance in order to address the growing expense of higher education (Ehrenberg, 2012; Webber, 2016). To combat the negative impact of course material costs, community colleges and other publically funded state colleges are using open education resources (OER) to reduce or eliminate the cost of course materials for students (de los Arcos, Farrow, Perryman, Pitt, & Weller, 2014; Wiley, Hilton III, Ellington, & Hall, 2012;). Because OER are free to acquire, instructors can design courses to use OER rather than traditional textbooks and eliminate the need for a student to determine if the cost

of the course materials are prohibitive of taking the course (Bliss, Robinson, Hilton, & Wiley, 2013). In addition, OER use also represents additional financial savings to the instructor or college by permitting reuse and alteration of the course materials without any licensing charges. Consequently, the cost savings from using OER are consistently cited as a prevailing benefit (Cannon & Brickman, 2015; Hatzipanagos & Gregson, 2015; Hilton III, Gaudet, Clark, Robinson, & Wiley, 2013; Okamoto, 2013).

If an educational resource is to be widely applicable to different learning contexts, then an instructor must be able to adapt it for specific learners and the educational setting (Judith & Bull, 2016).

2.1.6 Challenges to OER adoption

Recent research suggests that an individual's perception of cost can impact their motivation to learn (Flake, Barron, Hulleman, McCoach, & Welsh, 2015). Consumers of a product may use price as a measure of quality (Zeithaml, 1988), which could be detrimental to OER adoption given its zero price. In the absence of other measures (e.g., brand name awareness, sample chapters, authors), an instructor or student might rely on price as an indicator of whether the textbook is worth using. They might believe that a publisher could only charge a high price for a textbook if that textbook was essential to learning or 'worth it'. There is also the related, consumer belief that anything that is low cost or free is of inferior quality (Shampanier, Mazar, & Ariely, 2007). For example, many people may prefer an expensive cup of coffee compared to a free one. This could be especially true for durable goods, where an individual might expect that a cheaper or free textbook is meant to be disposable (e.g., only used for the learning opportunity) while a textbook with a high price has to be reused. An instructor or student investing in their education, might believe that a textbook

with a high price might be worth purchasing since it will have use after their course ends. It is important to note that beliefs about free goods may not be logical, despite leading to strong conclusions.

Instructors may also have a negative perception of OER because while OER have both no inherent price and a copyright that permits sharing, those same qualities may also cause instructors to believe that most OER are of inferior quality. Instructors often take part in sharing educational resources with each other (Maloney, Moss, Keating, Kotsanas, & Morgan, 2013; Seonghee & Boryung, 2008) but can have complex heuristics for determining whether they are reluctant to share resources because of a sense of ownership from purchasing (Belk, 2010). In many cases, instructors may only share resources that are free. But if instructors believe that course materials, even ones that are shared, can be judged based on price then they may automatically discount OER as a shareable but inferior resource. Again, this belief may not be logical, but could still exist among instructors. Of course, other factors may supersede price in determining OER use. The cost savings of OER could be a benefit appreciated by many students but it is not necessarily the most important quality when a student determines the value of course materials. Chulkov and Vanalstine (2013) discovered that students varied in their preference of print over digital, and preferred to have platform options when purchasing course materials. Rockinson-Szapkiw, Wendt, and Lunde (2013) surveyed students regarding textbook platform choice and discovered that students who chose print versions of course materials claimed that their familiarity with the format influenced their decision. This implies that some students would prefer a costly, print version over a free, digital version; the latter being the most common format of OER. There is also the possibility of consumer brand loyalty (Yang & Peterson, 2004) to education materials, and that students may avoid free alternatives because of this.

The potential student preference for print materials presents a challenge to OER acceptance. OER are normally created and exist digitally to facilitate distribution and sharing. While there can be options available for providing printed copies of an OER, there would also be associated costs (e.g., paper, printing devices, delivery). A student may prefer a printed version of course materials over a digital OER, which then would increase the price of even a free but printed resource. The result might be the act of using a printed resource over a digital one conveys additional value.

2.1.7 Lecturer's self-efficacy and open educational resources

Self-efficacy refers to lecturers' competency in utilizing the IWB platform for teaching and learning purposes. Self-efficacy otherwise known as personal efficacy can also be referred to as confidence in one's own ability to achieve intended academic results when using IWB platform for teaching purposes. (Owolabi, et al., 2021) . Consequently, since self-efficacy affects every area of human endeavour, it implies that the belief lectures hold regarding their abilities to utilize open educational resources for teaching and learning in universities will strongly influence their competency to face open educational resources challenges as well as choices they make out of it. Findings indicated that lecturers have a positive attitude towards the use of open educational resources for teaching and learning. This finding is in line with the earlier findings of Adeyanju et al, (2017); Mohammed (2017); Singaravelu (2017); Krause et al, (2017); Noori (2018); and Anatürk and Ateşkan (2019), who found out that lecturers have a positive attitude to utilize open educational resources for teaching and learning. Also, finding of this study on lecturers' self-efficacy towards the utilization of open educational resources

for teaching indicated that lecturers have appropriate levels of self-efficacy towards the utilization of open educational resources for teaching and learning. This finding is in line with the earlier findings of Yinghui et al., (2018) and Kaya and Yazıcı (2018), who found out that lecturers have a high level of self-efficacy to utilize open educational resources for teaching and learning. Consequently, since self-efficacy affects every area of human endeavour, it implies that the belief lectures hold regarding their abilities to utilize IWB for teaching and learning in universit ies will strongly influence their competency to face IWB challenges as well as choices they make out of it (Owolabi & Falode, 2021). Efficacy beliefs are the beginning of the route that we wish to embark upon. What we decide to do, the persistence that we display in it and our decision to give up or to carry on depend to a large extent on the "beliefs in one's own capacities to organise and execute the courses of action required to produce certain results" (Bandura, 1997).

Depending on how we see the horizon, we will walk. But when we begin, we do not start out from a void: we have previous knowledge that modulates how we evaluate the route. Bandura (1997) called it sources of efficacy expectations, and postulated four: enactive mastery, vicarious experiences, verbal persuasion, and physiological and affective states. People with high self-efficacy perceive troubles as challenges, are highly committed to the activities they carry out, invest a lot of time and effort in their activities, think strategically to solve difficulties, recover easily from failure or difficulty, feel they are in control of a majority of stressors and, furthermore, feel they are less vulnerable to stress and depression (Bandura, 1997). Thus, self-efficacy is a key construct to understand how people feel and perform at work. According to Bandura (1997), self-efficacy is a good predictor of the activities that we decide to carry out, persistence in performance, motivation, and so forth. In the specific case of teaching, Prieto (2002), for instance, considered

self-efficacy as playing a pivotal role in the study of university faculty. But to date, teaching self-efficacy has been overlooked in higher education (Burton, Bamberry & Boundy, 2005). With regard to higher education, university faculty must carry out different kinds of tasks that can be summarised in a triple work profile: teaching, research and management. This triple work profile has already been considered by several authors (Buela-Casal & Sierra, 2007; Vera, Salanova & Martín Del Río, 2010). The study of teacher self-efficacy has always been closely linked with the desire to measure it. Tschannen-Moran, Woolfolk Hoy and Hoy (1998) identified two parallel lines of research in the study of perceived self-efficacy. First, the concept of teacher efficacy was initially used by RAND researchers (Armor et al., 1976). The RAND Corporation conceived teacher efficacy as the extent to which teachers believed they could control the reinforcement of their actions, grounded in Social Learning Theory (Rotter, 1966). The second line of research was based on Bandura's Social Cognitive Theory (SCT) and goes beyond the control of the reinforcement of their actions. As we have stated earlier, self-efficacy is the belief in one's own capacities to organise and execute the courses of action required to produce certain results (Bandura, 1997, p. 3). With this definition as his base, in 1997, Bandura created his own Teacher Self-Efficacy Scale. Continuing with the desire to measure teacher self efficacy, several proposals have recently appeared, such as the Teacher Interpersonal Self-Efficacy Scale by Brouwers and Tomic (2001), the Teachers' Sense of Efficacy Scale by Tschannen-Moran and Woolfolk (2001) which has showed evidence of reliability and measurement invariance across the five countries, i.e., Canada, Cyprus, Korea, Singapore, and the United States (Klassen, et al. 2009), and the Teacher Self- Self-efficacy among university faculty: how to develop an adjusted scale 801 anales de psicología, 2011, vol. 27, nº 3 (octubre) Efficacy Scale by Schwarzer, Schmitz and Daytner (1999). All these questionnaires focus on school teachers' self efficacy and therefore cannot be

used to measure self efficacy in university faculty. The Teacher self-efficacy of university faculty questionnaire, developed by Prieto (2005), is of special interest because it was created to measure teaching self-efficacy in the university context. Although it is a great questionnaire based on the SCT theory, it only focuses on one of the university faculty profiles (teaching) and avoids the research and management roles of this population. For us, in order to be able to measure self-efficacy in this population, it is very important to take into account all the work carried out by university faculty as part of their triple work profile. But we followed Bandura's (2006) advice of creating a specific scale for our domain under study. It is very important to note that self-efficacy is specific to the context that is being measured and not to another. Hence, we must not create a general scale because each domain is different and if general scales were used, our information could be biased. Bandura warns us of the need to conduct an exhaustive study of the domain so that each of the items on our self efficacy scale reflects the real value of self-efficacy. This author therefore criticised the use of general and non-specific self-efficacy scales, and argued that it is futile to measure self-efficacy with a general scale because the items in tests based on the general efficacy approach are of little or no relevance to the domain being studied. Furthermore, items in a global test are commonly designed in a global fashion and are too ambiguous to allow the researcher to know what is being measured with any degree of accuracy. Self-efficacy scales must be adapted to our particular domain of interest and must reflect a thorough study of our chosen domain. Bandura (2006) also explained how to develop an adjusted scale for any domain, but that is theory and what we do in this study is practice. Thus, the main objective of this study is to show the procedure carried out to develop an adjusted scale with which to measure specific self-efficacy in one particular domain, i.e. university faculty, following the method and recommendations from the SCT by Albert Bandura. In this case, we have created a scale to measure efficacy beliefs in

university faculty taking into account the triple work profile. So, although we know how to create a self efficacy scale (i.e. Bandura, 2006) and this process is similar for many kinds of self-efficacy scales, we show a clear example of how it must be done, explaining all the steps required to create the scale and also testing the results empirically in university faculty. Moreover, once the scale had been created (and thus the main objective obtained), it was analysed and two secondary objectives appeared. The first one was to test that the scale consisted of three dimensions corresponding to the triple work profile (teaching, research and management), as well as to analyse the psychometric characteristics of the self efficacy scale. And the second objective was to study whether there were significant differences in self-efficacy among university faculty with regard to certain variables that had shown significant differences in self-efficacy in other studies in the educational context (i.e. gender, work experience, occupational category, level of academic education, marital status and having children). With regard to gender, several research studies have shown that women score higher in self-efficacy than men at the different levels of education, and do so most specifically in elementary, special and higher education (Anderson, Greene & Loewen, 1988; Coladarci & Breton, 1997; Raudenbush, Rowen & Cheong, 1992). The relationship between the work experience variable and self-efficacy is unclear, and different studies offer contradictory results. Whereas, in secondary and higher education (Benz, Bradley, Alderman & Flowers, 1992) as well as in student teachers (Hoy & Woolfolk, 1990), indicate that teachers who present a higher degree of self-efficacy are those with little experience. In prekindergarten through 12th-grade teachers (Wolters & Daugherty, 2007) were shown modest effects of experience on self-efficacy. Finally, in elementary and high school teachers, Klassen and Chiu (2010) showed a nonlinear relationship with years of teaching experience; self-efficacy increased from 0 to about 23 years of experience and then declined as years of experience increased. With regard to occupational

category, although we did not find studies that took into account differences in self-efficacy in university faculty in relation to occupational category, we did take into account the recommendation by Cifre, Llorens and Salanova (2003), which considered the professional category of these populations at the time of the study. Thus, we bore in mind whether university faculty were state employees or not. As these authors stated, different professional categories (and therefore being a state employee or not) carry different obligations. In relation to levels of academic education, in elementary schools, teachers with a higher level of academic education usually showed greater self-efficacy (Hoy & Woolfolk, 1993). Finally, social support has been proved, in secondary-school teachers, to have an impact on teacher self efficacy (Brouwers, Evers & Tomic, 2001), which explains our interest in knowing whether marital status and having children influence self-efficacy. For further information about the sociodemographic variables, see Prieto (2002).

2.1.8 Lecturers attitudes towards open educational resources

Attitude in its broadest sense is the way in which the individual is standing up against t he objects or subjects that contain a psychological value (Gomleksiz, 2013). It has been proved by ma ny research findings that attitudes developed as a natural result of interaction, greatly affect the succe ss of the individual (Canakay, 2011). Attitude is a summary evaluation of a psychological object captured in such attribute dimensions as good-bad, harmful-beneficial, pleasant-unpleasant, and likeable-dislikeable (Ajzen, 2013). Lee et al, (2013) argue that understanding the usefulness of IWB has a direct influence on

teachers' attitude and satisfaction level. That is, a positive attitude towards the IWB platform will increase the utilization and quality of participation. Lecturers' attitude towards the use of this IWB platform constitutes a significant factor to this study; the researcher believes that it is important to identify and understand lecturers' attitude which also relates to their self-efficacy towards the use of IWB.

Anatürk and Ateşkan (2019), who found out that lecturers have a positive attitude to utilize interactive whiteboards for teaching and learning. Also, Owolabi and Falode (2021) revealed that lecturers have an appropriate level of self-efficacy towards the utilization of interactive whiteboards for teaching and learning. This finding is in line with the earlier findings of Yinghui et al., (2018) and Kaya and Yazıcı (2018), who found out that lecturers have a high level of self-efficacy to utilize interactive whiteboards for teaching and learning. This finding

is not in line with the earlier findings of Robert (2016), who found out that the total nu mber of eLearning tools used significantly improved student's self-efficacy but not instructor connectedness.

Jurado and Petterson argued that (2021) in order to utilize OER could be an economically feasible way for educational institutions to meet the challenges of modern technology and increasing demands for higher education [5]. But, the transition from a teacher-to-student, textbook based pedagogy, to a flexible learning environment must be supported by the educators and it means that most teachers will need encouragement and support to take the step from conventional textbook/classroom education. Rolfe (2012) revealed that lecturers' attitudes are changing in education globally to promote the open sharing of educational courses and resources, lecturers were familiar with open content repositories within the university but not externally. A culture of

borrowing and sharing of resources exists between close colleagues, but not further a field, and whilst staff would obtain resources from the Internet, they were reluctant to place materials there. Drivers for mobilising resources included a strong belief in open education, the ability of OER to enhance individual and institutional reputations and economic factors.

2.1.8 The need for open educational resources for knowledge sharing

UNESCO (2021) revealed that The global Covid-19 pandemic has disrupted learning and knowledge sharing worldwide, at its peak affecting 1.57 billion learners in 191 countries. In this unprecedented context, Open Educational Resources (OER) represent a crucial means to support the continuation of learning in both formal and informal settings. OER are learning, teaching and research materials in any format and medium that reside in the public domain or are under copyright that have been released under an open license1 , permitting no-cost access, re-use, re-purpose, adaptation and redistribution by others. OER provides a promising solution to access, create and share knowledge and support learning for learners of all grade levels, as well as for teachers, teacher trainers and educators, parents, educational policy makers and governmental bodies. Beyond this, they carry value for a wide range of constituencies, including cultural institutions (such as libraries, archives and museums) and their users, researchers, civil society organizations (including professional and student associations), publishers, the public and private sectors, intergovernmental organizations, copyright holders and authors, as well as media and broadcasting groups. They can help meet the needs of individual learners, including persons with disabilities and individuals coming from marginalized or disadvantaged groups, and effectively promote gender equality as well as incentivize innovative pedagogical, didactical and methodological approaches.

In the framework of the OER Recommendation, adopted by its General Conference in November 2019, UNESCO's Member States committed to promote the use of OER for the open sharing of knowledge and learning, in the following areas: (i) Capacity building and use of OER: This includes developing the capacity of all key education stakeholders to create, access, re-use, re-purpose, adapt, and redistribute OER, as well as to use and apply open licenses in a manner consistent with national copyright legislation and international obligations; (ii) Developing supportive policy: governments, and education authorities and institutions should be encouraged to adopt regulatory frameworks to support open licensing of publicly funded educational and research materials, develop strategies to enable the use and adaptation of OER in support of high quality, inclusive education and lifelong learning for all, supported by relevant research in the area; 1 Open license refers to a license that respects the intellectual property rights of the copyright owner and provides permissions granting the public the rights to access, re-use, re-purpose, adapt and redistribute educational materials (iii) Effective, inclusive and equitable access to quality OER: supporting the adoption of strategies and programmes including through relevant technology solutions that ensure OER in any medium are shared in open formats and standards to maximize equitable access, co creation, curation, and searchability, including for those from vulnerable groups and persons with disabilities; (iv) Nurturing the creation of sustainability models for OER: supporting and encouraging the creation of sustainability models for OER at national, regional and institutional levels, and the planning and pilot testing of new sustainable forms of education and learning; (v) Fostering and facilitating international cooperation: supporting international cooperation between stakeholders to minimize unnecessary duplication in OER development investments and to develop a global pool of culturally diverse, locally relevant, gender sensitive, accessible, educational materials in multiple languages and formats We underscore the important

role of the Covid 19 Global Education Coalition launched by UNESCO to design and deploy inclusive distance learning solutions. Access to OER is fundamental for ensuring learning continuity. The Dynamic OER Coalition, a multi-stakeholder group of partners dedicated to sharing expertise for the implementation of this Recommendation, will facilitate and support joint actions. Today we are at a pivotal moment in history. The Covid-19 crisis has resulted in a paradigm shift on how learners of all ages, worldwide, can access learning. It is therefore more than ever essential that the global community comes together now to foster universal access to information and knowledge through OER. Our joint action aims at managing the challenges of this and future pandemic crises for learners, as well as laying the foundation for integrating systematic best practices to increase the sharing of knowledge for the post-Covid-19 future of learning. Therefore, in the spirit of a joint implementation of the OER Recommendation, UNESCO calls on the global community to support the use of OER for sharing learning and knowledge openly worldwide with a view to building more inclusive, sustainable and resilient Knowledge Societies.

The OECD (2007) revealed that the continuous development of information and communications technologies (ICT) is one of the drivers of the knowledge economy. Technology continues to gain ground in higher education and has already enhanced the on-campus student experience, through student portals, Internet access, digital libraries, and the availability of laptops, handhelds and other portable devices. OER projects can expand access to learning for everyone, but most of all for nontraditional groups of students, and thus widen participation in higher education. There can be an efficient way of promoting lifelong learning, both for individuals and for the government, and can bridge the gap between non-formal, informal and formal learning. Advocates of the open movement should consider actions for improving access to and usefulness of existing resources. The rapidly growing number of learning materials and repositories makes it important to find the

most relevant and highest quality resources (Ehlers, 2011). Metadata (descriptive information about the resources) may improve the function of search engines, but adding good quality metadata to resources is difficult and time consuming. Alternative approaches such as automatically generated metadata and folksonomies are being tested, but whether these are scalable solutions remains to be seen. Quality can be improved in many ways. There is a troublesome imbalance between the provision of OER and its utilisation (Morrison, 2008). The vast majority of OER is in English and based on Western culture, and this limits their relevance and risks consigning less developed countries to playing the role of consumers. However, a number of projects now exist in developing countries to develop OER based on their own languages and cultures. Since the concept of OER builds on the idea of reusing and repurposing materials, interoperability is a key issue. Learning resources need to be searchable across repositories and possible to download, integrate and adapt across platforms. Software applications developed at different points in time and by different developers should be able to operate together. Open standards make this possible. The development of new standards is a specialised task which requires financial support (Yuan et al., 2010).

Abba (2021) noted that open educational resources are a catalyst for achieving the sustainable development goals (SDGs) as prescribed by UNESCO and its partnering bodies; and ushering a new era of dynamic teaching and learning by providing adequate instructional resources to facilitate optimal communication in the classroom and beyond its four walls.

2. Theoretical Framework

The two theories that are in accordance with open educational resources for knowledge sharing amongst lecturers are the technology acceptance model (TAM) and constructivism learning theory. The theoretical framework will be critically analyzed with these theories and models in mind.

1. Technology Acceptance Model

The Technology Acceptance Model was propounded by Davis in 1986 (Lala, 2014). The Technology Acceptance Model (TAM) is seen as an information systems theory that models how users come to accept and make use of technology (Asunka, 2016). The model emphasizes the need for technological use by every single individual. It is to be noted that there must be a behavioural intention (BI) which is a factor that leads to people using technology. Davis in 1986 noted that behavioural intention (BI) is influenced by attitude (A) which is viewed as the general impression of technology.

The model suggests that when users are given new technology to use, a number of factors influence their decisions to use such technology. Some of which include:

- Perceived usefulness (PU): this is seen as the length at which a person believes using a particular technology would enhance his/her job performance. This implies that students who may likely use smartphones will consider how useful they are in carrying out a particular task.
- Perceived ease-of-use (PEOU)- this factor explains the ease or how less difficult it would be to use a certain piece of technology. If a technology is generally easy to use, then the users will express positive attitudes towards such technology. For instance, open educational resources users will frequently make use of educational resources or applications if they are easy to use and are not complicated in usage.

Other factors such as social influence, age and gender can influence the use of technology by individuals and their general perception of it. This model is relevant to this study as it explains how lecturers may perceive the use of open educational resources in knowledge sharing, according

to the model; the perceived usefulness and perceived ease of use in regards to open educational resources will affect the usage for knowledge sharing.

2.2.2 Constructivism Learning Theory

Constructivism is a theory of learning that suggests that people construct their own understanding and knowledge of the world through their experiences, interactions with others, and reflections on those experiences (Gogus, 2012). According to constructivism, individuals actively construct their own understanding of the world around them, rather than simply receiving and accepting information from an external source (Shah, 2019).

Constructivism emphasizes the importance of personal experience and interaction in the learning process, and suggests that learners are more likely to retain and understand new information when they are actively engaged in the process of constructing their own knowledge. This can involve activities such as problem-solving, experimenting, and reflecting on one's own experiences and observations.

In a constructivist learning environment, the role of the instructor is often to facilitate learning rather than simply transmit information. This might involve providing learners with a range of resources and materials, encouraging collaboration and discussion, and guiding learners as they explore and construct their own understanding of a topic.

Constructivism learning theory emphasises the importance of learners developing their comprehension and skills from their own experiences. Constructivists conclude that information from the world interacts with ideas from the person, resulting in internalised constructs formed by learners. Constructivists have identified the assimilation and accommodation mechanisms that are critical in this relationship as people construct new insights from their interactions. They assume that as people assimilate new content, it becomes part of an already established body of information

or expertise. Constructivism seeks to understand how learners learn by drawing on prior experiences and constructing their own knowledge from those experiences. This suggests that constructivism promotes constructive learning, in which students regularly participate in the classroom and contribute to the teaching and learning process. Aside from learning by doing (active learning), constructivism promotes social interactions and peer interactions among learners. This learning philosophy supports various ways of communication and engagement. Social constructivism not only respects the learner's individuality and ambiguity, it also promotes, employs, and rewards it as an important part of the learning experience. (Akpan *et al.*,, 2020).

The constructivism theory is relevant to this study as a theory of learning that suggests that people construct their own understanding and knowledge of the world through their experiences, interactions with others, and reflections on those experiences. In the context of using open educational resources (OERs) for knowledge sharing, constructivism suggests that individuals are more likely to learn and retain information when they are actively involved in the process of constructing their own knowledge, rather than simply receiving information passively.

One way that OERs can support constructivist learning is by providing learners with a wide range of resources and materials that they can use to explore a topic and construct their own understanding of it. OERs can also facilitate learning through collaboration, allowing learners to discuss and share their ideas and experiences with one another as they work through the material. Overall, the use of OERs in a constructivist learning environment can be an effective way to promote knowledge sharing and encourage learners to take an active role in the learning process. It allows learners to engage with the material in a way that is meaningful to them and helps them to construct their own understanding of the topic, rather than simply receiving information from an instructor or other external source.

3. Empirical studies

Bello and Oyekunle (2014) examined the attitude, perceptions and motivation towards knowledge sharing among faculty members in the universities in Kwara State, Nigeria comprising two government and two private owned universities. Another objective is to emphasise the significant role attitude, intention and intrinsic motivation play in knowledge sharing. A survey collection method comprising a 21-item questionnaire was used. The findings revealed that attitude is significantly associated with intention to share knowledge; intention is significantly associated with knowledge-sharing behaviour; and intrinsic motivation is significantly associated with knowledge-sharing behaviour. The findings of the study provide insights into faculty members' attitude, intention and motivations towards knowledge sharing and strategies for enhancing knowledge sharing in institutions.

Acker et al., (2014) regarding teachers' sharing behavior regarding their Open Educational Resources (OER) in the Netherlands. Little is known about how many teachers actually share their learning materials and, therefore, an attempt was made to estimate the number of Dutch teachers and the types of OER they share. Second, we tried to find out whether knowledge sharing self-efficacy facilitated, and evaluation apprehension and trust inhibited teachers to share OER in two different contexts of sharing behavior; sharing with colleagues at their school (interpersonal sharing) and sharing with the public through Internet (Internet sharing). A survey among 1568 teachers from primary to higher education was undertaken to test the relative importance of knowledge sharing self-efficacy, evaluation apprehension and trust in determining Dutch teachers' intention to share. The results showed that a large proportion of the Dutch teachers shared their OER, but that this sharing was limited to learning materials with low complexity (e.g., texts or images). Moreover, sharing occurred twice as much interpersonally than via websites. Our

hypothesis that evaluation apprehension is significantly related to sharing behavior as well as the intention to share was not confirmed. Self-efficacy to share knowledge did, however, explain some of the differences in sharing behavior and in the intention to share of Dutch teachers, although the variables under study accounted only for a small amount of variance. Our findings should thus be replicated in further studies and other variables should be considered that could effectively predict OER sharing behavior of teachers.

Olufunke and Adegun (2014) examined the utilization of open educational resources (OER) among undergraduates in universities in Nigeria. It further investigated the extent to which the use of OER could ensure quality in education. A descriptive research design was used for the study. Five Research questions were raised and answered. All the research questions were subjected to descriptive analysis. The findings showed that: the level of awareness of undergraduates on the availability and usage of OER was moderate. The undergraduates were faced with a series of challenges on the utilization of OER, such as erratic electricity supply, lack of familiarity with OER websites, university not internet connected, and ignorance of OER availability. It was revealed that usage of OER enhanced sharing of common knowledge, course structure, access to quality learning materials and use of real instructional materials online. It was however revealed that there were lots of benefits of OER to undergraduates that include sharing world learning resources and students capacity building. It was recommended that universities as a matter of policy and urgency to have expressed connection to the internet, give orientation to students on the use of OER, encourage students on the use of OER by attaching their learning to online resources.

Gautam (2020) investigated the impact of self-efficacy and need for achievement on management students' perception regarding Web Based Learning Resources. Our study results confirmed a

significant impact of self-efficacy on WBLR. However, we did not find evidence of a significant impact on the need for achievement on WBLR. The sample consisted of 150 respondents. Our findings imply that students' experience of seeking help from informal online channels is significant when they actively participate in a course that uses WBLR.

Hilton (2020) carried out a study on Open educational resources, student efficacy, and user perceptions: a synthesis of research published between 2015 and 2018 and synthesized results from sixteen efficacy and twenty perceptions studies involving 121,168 students or faculty that examine either (1) OER and student efficacy in higher education settings or (2) the perceptions of college students and/or instructors who have used OER. Results across these studies suggest students achieve the same or better learning outcomes when using OER while saving significant amounts of money. The results also indicate that the majority of faculty and students who have used OER had a positive experience and would do so again.

Marín, V.I., Zawacki-Richter, O., Aydin, C.H. *et al.* (2022) explores faculty's perspectives and use of open educational resources (OER) and their repositories across different countries by conducting a multiple case study to find similarities and differences between academics' awareness, perceptions and use of OER, as well as examining related aspects of institutional policy and quality that may influence individual views. Data were collected through nine expert reports on each country studied (Australia, Canada, China, Germany, Japan, South Africa, South Korea, Spain and Turkey) and were analysed through qualitative content analysis using thematic coding. Findings show the impact on individual OER adoption with regard to the individual control of diverse factors by faculty members; of institutional policies and quality measures on the externally determined factors (by the institution); and of institutional professional development and provision of incentives in more internally determined factors (by the faculty members themselves). These

findings carry implications for higher education institutions around the world in their attempt to boost OER adoption by faculty members.

Anthony, Ebi-Bio and Vikoo (2018) carried out a study aimed at investigating the 'Lecturers Perception of on Open Educational Resources (OERs) for Academic Purposes. Three (3) research questions and three (3) hypotheses guided the study. All lecturers' in the Faculty of Education, University of Port Harcourt made up the population for this study, with a total of 150 as sample size. A 4-point Likert scale instrument for data collection was administered, titled Perception of lecturers on the use of Open Educational Resources (LPOERs). It contained three sections measuring several variables such as graduate students' awareness level, the extent of usage of OERs and challenges they experience with the use of OERs. The face and content validity of the instrument was established, and the test-retest method was used to determine the reliability of the instrument, with a reliability coefficient of 0.77 obtained. The researcher and three research assistants collected data. Mean and the standard deviation was used to answer the research questions, while the hypotheses were analysed using Z-test. Some of the findings revealed that the level of awareness among lecturers on OERs and their skill for evaluating web-based information is very low. However, it was recommended that an awareness should be developed for lecturers on how to access OERs and evaluate any information derived from the internet, and necessary facilities should be put in place.

Madiba (2018) gathered the perceptions and experiences of some lecturers from the University of the Free State (UFS) with regard to the integration of OERs in teaching and learning. The study is informed by an interpretivist paradigm that falls within discursive qualitative research. It is also centred on the Knowledge Management (KM) processes model that consists of knowledge discovery, knowledge capture, knowledge sharing and knowledge application (Becerra-Fernandez

& Sabherwal 2010:56). The investigation consisted of semi-structured interviews conducted with eighteen selected lecturers who met the specified criteria. The findings from this case study indicate that there is still a lack of awareness among lecturers on what OERs are or how they can be integrated into teaching and learning. There is also evidence of the sporadic usage of OER principles by lecturers in their daily teaching and learning activities. Many of the lecturers who responded showed a willingness to participate in initiatives that would lead to the development, promotion and implementation of OERs in teaching and learning at the UFS. The KM processes model has also revealed that, although not inadvertently, lecturers acknowledge and can identify, at various levels, with the 5Rs principles of OERs. The poor presence of the KM processes is an indication that OERs need to be properly introduced to solidify their usage and integration in teaching and learning at the UFS.

Jurrado and Petterson (2015) investigated the use of Open Educational Resources (OER) by a number of Latin American lecturers and their students. The respondents were divided in four groups, one each in Cuba, Guatemala, Peru and Brazil. They all participated in a course given by the first author of this paper about the use of learning management systems in the year 2010-12. In that course only OER were used and the participants were strongly encouraged to utilise OER in their work. Two weeks into the course the participants responded to a questionnaire with a number of statements about the use and sharing of free material on the internet. In this study the lecturers´ opinions about the use of OER at that time are compared with the use of OER by the lecturers and their students about one year after the course was finished. In all four groups the answers to the first questionnaire showed that, even though the idea to utilise free course material in higher education was new to most of them, the lecturers were positive to the idea of utilizing OER and most of them were prepared to make material of their own available to others. The results

from the first and the second occasion are strongly correlated; the conclusion is that the attitude of the lecturers is of critical importance for the acceptance of OER. The results are consistent with the assumption that many lecturers can find plenty of useful free course material once they are made aware of OER and have methods to disseminate it to their students. The authors adhere to the opinion that OER would increase the quality of education and contribute to the availability of education worldwide. In order to stimulate the production and dissemination of OER the authors recommend that institutions of education worldwide encourage lecturers to take part in the free sharing of material on the internet.

Bello, Nsofor, Falode and Adamu (2021) assessed the Determinants of Lecturers' Utilisation and Attitude Towards Open Educational Resources (OER) for Knowledge Sharing in Universities of North-East Nigeria. The population of the study was 632 lecturers drawn from Federal Universities of Northeast Nigeria. The sample of the study comprised of 338 lecturers purposively selected from three Federal Universities distributed within the three states (Adamawa, Bauchi and Borno State). The study adopted concurrent embedded mixed method research design in which four Quantitative and one qualitative (QUAN + qual) research questions guided the study. The instruments used for data collection are closed ended questionnaire and focus group interview protocol. The instruments were validated by experts and subjected to reliability test using Cronbach's alpha. Mean (x) and standard deviation (SD) was used to answer research question one to four for quantitative variables. Thematic analysis was used to answer research question five for qualitative variables using Atlas ti. Version 9.1. The findings of the study revealed that Performance expectancy, effort expectancy, social influence and facilitating conditions variables collectively influence lecturers' use of shared OER. The study recommended among others that

the University management should build on the provisions of the construct by strengthening the culture of knowledge sharing on OER repository among faculties.

Acker. Vermeulen, Kreijns, Lutgerink and Buuren (2022) reported on a study regarding teachers' sharing behavior regarding their Open Educational Resources (OER) in the Netherlands. Little is known about how many teachers actually share their learning materials and, therefore, an attempt was made to estimate the number of Dutch teachers and the types of OER they share. Second, we tried to find out whether knowledge sharing self-efficacy facilitated, and evaluation apprehension and trust inhibited teachers to share OER in two different contexts of sharing behavior; sharing with colleagues at their school (interpersonal sharing) and sharing with the public through Internet (Internet sharing). A survey among 1,568 teachers from primary to higher education was undertaken to test the relative importance of knowledge sharing self-efficacy, evaluation apprehension and trust in determining Dutch teachers' intention to share The results showed that a large proportion of the Dutch teachers shared their OER, but that this sharing was limited to learning materials with low complexity (e.g., texts or images). Moreover, sharing occurred twice as much interpersonally than via websites. Our hypothesis that evaluation apprehension is significantly related to sharing behavior as well as the intention to share was not confirmed. Self-efficacy to share knowledge did, however, explain some of the differences in sharing behavior and in the intention to share of Dutch teachers, although the variables under study accounted only for a small amount of variance. Our findings should thus be replicated in further studies and other variables should be considered that could effectively predict OER sharing behavior of teachers.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals on the research methods employed in the study which are as follows: Research type, population of the study, sample and sampling techniques, instrumentation, validation and reliability of the instrument, method of data collection and method of data analysis.

3.2 Research Design

This study adopted the descriptive survey research design. Tahmina (n.d) noted that "survey research design are the procedures in quantitative research in which investigators administer a survey to a sample or to the entire population of people to describe the attitudes, opinions, behaviours, or characteristics of the population". The descriptive survey design is suitable to use survey type of research design because it is used to describe the distinctiveness of an individual or group, the relationship that exists between two variables and describing them. This design was because the study sought to investigate lecturers' perceptions, self efficacy and attitude towards utilization of open educational resources for knowledge sharing among college of education lecturers in Minna, Niger, State.

3.3 Population of the study

The population of this study consists of all the lecturers in Niger State College of Education, Minna, Niger State. The target population of the study consists of all the full time lecturers from the six schools (School of Arts and social sciences, School of education, school of languages, school of sciences, school of technical education and the school of vocational education) at the Niger State College of Education, Minna, Niger State.

3.4 Sample and sampling Techniques

The sample size for the study consists of one hundred and twenty-three (123) lecturers that were randomly sampled from the six schools as outlined in table 3.1. The adoption of the simple random sampling technique was to ensure unbiased representation of the sample and to ensure that all the lecturers from all the schools were sampled to reduce the chances of sampling error from occurring.

Table 3.1 Demographic Distribution of the Sample

S/N	Schools	Population
1	School of Arts and social sciences	27
3	School of education	23
4	School of languages	10
5	School of sciences	21
6	School of technical education	22
7	School of vocational education	20
	Total	123

The sample consists of a total number of one hundred twenty three (123) lecturers which were randomly selected.

3.5 Research Instrument

The data collection instrument designed for this study was a questionnaire developed by the researcher titled 'Lecturers perceptions, self efficacy and attitude Questionnaire (LPSAQ)' The questionnaire was divided into four sections. Section A is the preliminary section which deals with basic information of the respondents (Biodata), Section B handles the perception of Lecturers towards utilization of open educational resources for knowledge sharing. Section C elicits response on the self-efficacy of Lecturers towards utilization of open educational resources for knowledge

sharing and section D collects responses on the attitude of Lecturers towards utilization of open educational resources for knowledge sharing.

3.6 Validation of research instruments

The face and content validity were the type of validity used by the researchers to validate the research instrument. Content validity assesses whether a test is representative of all aspects of the construct. To produce valid results, the content of a test, survey or measurement method must cover all relevant parts of the subject it aims to measure (Middleton, 2019). Therefore, the research instrument underwent an editorial process by two educational technologist experts from the School of Science and Technology Education (SSTE), Federal University of Technology Minna; these experts made some corrections to the content by discarding and adding some items.

3.7 Reliability of the instrument

The test-retest reliability method is one of the simplest ways of testing the stability and reliability of an instrument over time. Test-retest approach was adopted by the researcher in establishing the reliability of the instrument. In doing these 20 copies of the questionnaire were administered on twenty randomly selected respondents. The response of the subjects was scored after the first and second administration of the test. The scores obtained were then computed using Pearson's Product Moment Correlation Coefficient (PPMC) which gave a reliability index score of $r=0.78$.

3.8 Method of data collection

The researcher obtained permission from the head of department (HOD), Educational Technology, School of Science and Technology Education (SSTE), the researcher obtained the letter of permission and then visited the Niger State College of Education Minna, the researcher visited the various HOD's of each department and introduced herself with assistance of the letter. After

permission was granted, the researcher adequately explained to the respondents before collecting their responses through the administration of the questionnaire. Copies of the questionnaire were administered by the researcher on the respondents. All the respondents were expected to give maximum co-operation, as the information on the questionnaire are all on the things that revolve around their study. Hence, enough time was taken to explain how to tick or indicate opinion on the items stated on the research questionnaire. The questionnaire was immediately retrieved after the respondents provided their responses to the items.

3.9 Method of data analysis

Data Collected from the study were analyzed using descriptive statistics of frequency counts and Simple Percentage while the hypothesis testing was done using the t-test. The Statistical Package for Social Sciences (SPSS) was used to analyze the data collected.

CHAPTER FOUR

4.0 RESULT AND DISCUSSION

4.1 Introduction

This chapter presents the analysis and results obtained from the data based on research questions and research hypotheses stated in chapter one. The results are preceded by the demographic information of the respondents.

4.1 Demographical Information

Table 4.1 Gender distribution of the respondents

Gender	Frequency	Percent
Male	68	55.3
Female	55	44.7
Total	123	100.0

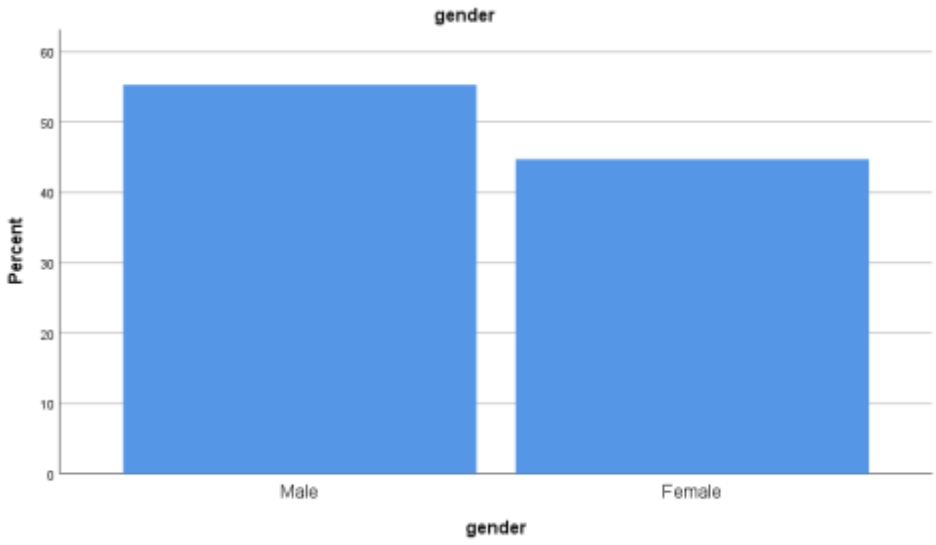

Figure 4.1 Gender of the respondents

4.1 Result

This part presents the result of the analyses on lecturers' perception, self-efficacy, and attitude towards open educational resources.

Research Question 1: What is the perception of lecturers towards the utilization of Open Educational Resources in college of education in Minna, Niger State?

Table 4.2: Perception of lecturers on the utilization of open educational resources

S/N	Items	N	Mean	Std
1	Do you think Open Educational Resources have improved your teaching effectiveness	123	3.39	0.80
2	There are changes in student engagement and learning outcomes since incorporating Open Educational Resources in lectures	123	3.39	0.80
3	I find it easy to locate and utilize Open Educational Resources in teaching?	123	3.35	0.76
4	I have faced while using Open Educational Resources in lectures	123	3.30	0.90
5	I believe that Open Educational Resources have the potential to revolutionize the traditional teaching methods	123	3.44	0.73
	Grand mean		3.37	

The study evaluated the perception of lecturers towards open educational resources by analysing their responses to a set of questions, as presented in Table 4.1. The table displays the mean and standard deviation of the responses provided by the participants, reflecting their perceptions of open educational resources. The findings suggest that the lecturers have a generally positive perception towards open educational resources. Each of the five items in Table 1 received a mean score above the grand mean value of 2.50, indicating a positive perception towards open educational resources. Furthermore, the overall mean score of 3.37 (which is greater than 2.50) reinforces the notion that the lecturers have a favourable attitude towards open educational

resources. Based on the responses collected from the sample, the study concludes that lecturers possess a positive perception towards open educational resources.

Research Question 2: What is the level of self-efficacy of lecturers towards the utilization of Open Educational Resources in college of education in Minna, Niger State?

Table 4.3: Self-efficacy of lecturers on the utilization of open educational resources

S/N	Items	N	Mean	Std
1	I feel confident in using Open Educational Resources while teaching	123	3.24	0.88
2	I often use Open Educational Resources for my lectures	123	3.40	0.82
3	I have received training and support in using Open Educational Resources	123	3.31	0.88
4	I find it important to incorporate Open Educational Resources in my teaching	123	3.40	0.80
5	I experienced challenges in using Open Educational Resources in teaching	123	3.34	0.79
	Grand mean		**3.33**	

In order to determine the self-efficacy of lecturers on the utilization of open educational resources technology, the researchers conducted an assessment based on specific items listed in Table 4.3. The table provides the mean and standard deviation for each item, which allowed the researchers to analyse the lecturers' perceptions of open educational resources. Upon analyzing the data, it was found that the lecturers showed a high level of self-efficacy towards open educational resources, with each item scoring above the minimum criterion mean of 2.50. This means that the lecturers were self-efficient in their ability to use open educational resources technology effectively. Moreover, the grand mean of 3.33 (which is above the minimum criterion mean) indicates that the lecturers have a positive perception of open educational resources technology as a whole. This means that they view open educational resources as a valuable tool for enhancing the teaching and

learning experience. Overall, the findings suggest that lecturers have a self-efficacy towards open educational resources technology and are confident in their ability to use it effectively, which can have a significant impact on the integration of open educational resources into educational settings.

Research Question 3: What is the attitude of lecturers towards the utilization of Open Educational Resources in college of education in Minna, Niger State?

Table 4.4: Attitude of lecturers on the utilization of open educational resources

S/N	Items	N	Mean	Std
1	I believe that incorporating Open Educational Resources (OERs) into my teaching is beneficial to my students	123	3.28	0.95
2	I often use OERs in my lectures as part of course materials	123	3.34	0.81
3	I have noticed changes in student engagement and learning outcomes since I started using OERs	123	3.46	0.77
4	I believe that using OERs requires more effort on my part compared to using traditional educational resources?	123	3.38	0.76
5	I believe that OERs should be more widely adopted	123	3.28	0.85
	Grand mean		**3.34**	

The assessment of lecturers' attitude towards open educational resources was based on the items presented in Table 4.4, which displays the mean and standard deviation of their responses. The results indicate that lecturers demonstrated favourable attitude towards the utilization of open educational resources, as the mean scores for each item (1-5) were above the criterion mean of 2.50. Moreover, the grand mean of 3.34 (x>2.50) suggests that lecturers had a favourable perception of open educational resources. In summary, the findings suggest that lecturers showed

favourable attitude towards the potential use of open educational resources in their teaching or learning practices.

4.3 Hypothesis Testing

H_{01}: There is no significant difference of male and female lecturer's perception towards the utilization of Open Education Resources in colleges of Education in Minna, Niger State.

Table 4.5 T-test for male and female lecturer's perception towards the utilization of Open Education Resources

Gender	N	df	$\bar{x}$	SD	t-value	p-value
Male	68		17.08	3.29		
		121			0.65	0.51
Female	55		16.63	4.30		

Significant at $p < 0.05$

Table 4.5 shows the t-test analysis of male and female lecturer's perception towards the utilization of Open Education Resources. The result revealed that t-value is 0.65 and p-value of $0.51 > 0.05$. Therefore, the null hypothesis was accepted, this indicated that there is a no significant difference of male and female lecturer's perception towards the utilization of Open Education Resources in colleges of Education in Minna, Niger State.

$H0_2$: There is no significant difference of male and female lecturer's self-efficacy towards the utilization of Open Education Resources in colleges of Education in Minna, Niger State.

Table 4.6 T-test for male and female lecturers towards the utilization of Open Education Resources

Gender	N	df	$\bar{x}$	SD	t-value	p-value
Male	68		16.85	3.25		
		121			0.41	0.67
Female	55		16.56	4.43		

Significant at $p < 0.05$

Table 4.6 shows the t-test analysis of male and female lecturer's self-efficacy towards the utilization of Open Education Resources. The result revealed that t-value is 0.41 and p-value of $0.67 > 0.05$. Therefore, the null hypothesis was accepted, this indicated that there is a no significant difference of male and female lecturer's self-efficacy towards the utilization of Open Education Resources in colleges of Education in Minna, Niger State.

$H0_3$: There is no significant difference of male and female lecturer's attitude towards the utilization of Open Education Resources in colleges of Education in Minna, Niger State.

Table 4.7 T-test for male and female lecturer's attitude towards the utilization of Open Education Resources

Gender	N	df	$\bar{x}$	SD	t-value	p-value
Male	66		16.94	3.26		
		121			0.56	0.57
Female	55		16.54	4.45		

Significant at $p < 0.05$

Table 4.7 shows the t-test analysis of male and female lecturer's attitude towards the utilization of Open Education Resources. The result revealed that t-value is 0.56 and p-value of 0.57 > 0.05. Therefore, the null hypothesis was accepted, this indicated that there is a no significant difference of male and female lecturer's attitude towards the utilization of Open Education Resources in colleges of Education in Minna, Niger State.

4.2 Discussion of Findings

The study investigated lecturers' perception, self-efficacy, and attitude towards the use of open educational resources in their teaching. The analysis of the data revealed three key findings.

The findings revealed that lecturers held a positive perception towards open educational resources. This means that lecturers viewed open educational resources as a useful tool in teaching and learning and were likely to incorporate it into their teaching practices. The grand mean score of 3.37, which was above the established decision mean of 2.50, indicates a high level of agreement among the lecturers on the usefulness of open educational resources. This finding is in line with the findings of Bello and Oyekunle (2014) who revealed that The findings revealed that attitude is significantly associated with intention to share knowledge; intention is significantly associated with knowledge-sharing behaviour; and intrinsic motivation is significantly associated with knowledge-sharing behaviour.

The results of the t-test analysis that was conducted to investigate whether there is a significant difference in the perceptions of male and female lecturers towards the use of Open Education Resources (OER). The analysis was conducted in colleges of Education in Minna, Niger State. The t-value for the analysis was found to be 0.65 and the corresponding p-value was 0.51. The p-value of 0.51 is greater than the significance level of 0.05, indicating that the null hypothesis should be

accepted. This means that there is no significant difference in the perceptions of male and female lecturers towards the use of OER in the colleges of Education in Minna, Niger State. In other words, the results suggest that both male and female lecturers in these colleges have similar perceptions towards the utilization of OER. The findings of this study may have important implications for the development and implementation of OER programs in colleges of Education in Minna, Niger State, and possibly in other similar educational institutions.

The findings revealed that lecturers were self-efficient towards the use of open educational resources. This means that lecturers felt confident in their ability to use open educational resources in their teaching practices. The grand mean score of 3.33, which was also above the decision mean of 2.50, suggests that the lecturers were self- efficient in their ability to use open educational resources, despite any challenges or barriers that may arise. This in line with the findings of Gautam (2020); Hilton (2020) who revealed that open educational resources increase teacher's self-efficacy.

The results of a t-test analysis carried out to determine if there is any significant difference between male and female lecturers in terms of their self-efficacy towards utilizing Open Education Resources (OER). The analysis revealed that the t-value is 0.41 and the p-value is 0.67 which is greater than the significance level of 0.05. Based on this, the null hypothesis was accepted, indicating that there is no significant difference between male and female lecturer's self-efficacy towards the utilization of OER in colleges of Education in Minna, Niger State. In other words, the findings suggest that male and female lecturers have similar levels of self-efficacy towards using OER.

The findings revealed that lecturers showed favourable attitude towards the use of open educational resources. This means that lecturers were willing and eager to explore the use of open educational resources in their teaching practices. The grand mean score of 3.34 indicates a high level of attitude among the lecturers towards open educational resources. This finding is in line with the findings of Bello, Nsofor, Falode and Adamu (2021); Bello and Oyekunle (2014) who revealed that teachers displayed attitude and readiness towards the utilization of open educational resources.

The results of the t-test analysis that was conducted to compare the attitudes of male and female lecturers towards the use of Open Education Resources. The analysis yielded a t-value of 0.56 and a p-value of 0.57, which indicates that the difference between the attitudes of male and female lecturers towards the utilization of Open Education Resources is not statistically significant. As a result, the null hypothesis was accepted, indicating that there is no significant difference between the attitudes of male and female lecturers towards the use of Open Education Resources in the colleges of Education in Minna, Niger State. In simpler terms, the study did not find any significant difference between the attitudes of male and female lecturers towards Open Education Resources in the colleges of Education in Minna, Niger State.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

In this chapter, the summary on lecturers' perception, self-efficacy and attitude towards utilization of open educational resources for knowledge sharing among college of education lecturers in Minna, Niger State was presented. Among others, the chapter includes the conclusion and recommendations based on the findings.

5.2 Conclusion

Based on the findings of this study, it was concluded that:

Lecturers showed favourable perception towards the use of open educational resources, their perception towards open educational resources will further boost the utilization and maximize efficiency in teaching and learning, the self-efficacy level towards open educational resources was high and indicated that lecturers were willingly to use open educational resources to accomplish tasks relating to teaching and learning. The attitude showed by lecturers towards open educational resources will definitely translate to the utilization of open educational resources.

5.3 Recommendations

Based on the findings in this study, it was recommended that:

1. The Federal ministry of education should provide open educational resources technologies in all the Federal Universities in Nigeria.
2. The already existing infrastructure should be maintained and properly stored after usage to safeguard and prevent them from damaging.
3. Inspectors and supervisors should ensure regular supervision to enhance the effective use of open educational resources and resources in the teaching and learning.

4. The government and relevant stakeholders in education should make funds available for buying needed open educational resources for teaching and learning.

5.4 Major Findings of the Study

The following findings have been made from the research work

1. Lecturers held positive perception towards the utilization of open educational resources for knowledge sharing among college of education lecturers in Minna, Niger State.

2. Lecturers has self-efficacy towards the utilization of open educational resources for knowledge sharing among college of education lecturers in Minna, Niger State.

3. Lecturers has favourable attitude towards the utilization of open educational resources for knowledge sharing among college of education lecturers in Minna, Niger State.

4. There was no significant difference in the perception, self-efficacy and attitude of male and female lecturers based on the utilization of open educational resources for knowledge sharing among college of education lecturers in Minna, Niger State.

5.5 Contribution to Knowledge

Based on the findings of the study, the following are the contribution to knowledge:

1. The perception of lecturers towards open educational resources will further boost the utilization of open educational resources in tertiary institutions in Nigeria. This study will contribute to the body of existing literature on the perception of lecturers towards open educational resources.

2. Lecturers were self-efficient towards the utilization of open educational resources; this explains the importance of self-efficacy towards the utilization of open educational

resources for knowledge sharing among college of education lecturers in Minna, Niger State.

3. The study revealed that lecturers held favourable attitude towards the utilization of open educational resources for knowledge sharing among college of education lecturers in Minna, Niger State.

5.6 Implications of the Findings

The study revealed that lecturers have a positive perception towards open educational resources in utilizing it in the teaching and learning process. Moreover, the study has also revealed that lecturers have a strong belief in their own abilities to use open educational resources, which is known as self-efficacy. This finding is significant as it suggests that lecturers have the favourable attitude towards open educational resources. Given the positive results of the study, it is recommended that lecturers be encouraged to explore and use open educational resources technology in their teaching. They should be further enlightened about OER's potential benefits and given the necessary training to integrate it into their teaching practices. In addition, the technology should be made readily available for use in the classroom. Using open educational resources can enhance the teaching and learning process by providing access to content and unlimited resources for lecturers. Overall, the study's findings suggest that the use of open educational resources has the potential to improve the quality of teaching and learning. Therefore, it is essential to encourage and support lecturers in adopting and integrating OER's into their teaching practices to realize its full potential.

5.7 Recommendations for Further Research

1. Further research should be carried out to examine the availability and utilization of open educational resources in tertiary institutions in North-Central Nigeria.

2. Studies should be carried out on effect of open educational resources on the academic achievement, retention, and attitude of Mathematics students in tertiary education.

3. A similar research study could be carried out in South-western universities.

4. A study on the economic factors affecting the selection of open educational resources for teaching and learning in North-central Nigeria.

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LECTURERS PERCEPTIONS, SELF EFFICACY AND ATTITUDE QUESTIONNAIRE (LPSAQ)

Instructions: Tick (✔) the appropriate option that suits your response

Key: Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD)

SECTION A: Gender: M ( ) F ( )

SECTION B: What is the perception of lecturers towards the utilization of Open Educational Resources in college of education in Minna, Niger State?

S/N	Items	SA	A	D	SD
1	Do you think Open Educational Resources have improved your teaching effectiveness				
2	There are changes in student engagement and learning outcomes since incorporating Open Educational Resources in lectures				
3	I find it easy to locate and utilize Open Educational Resources in teaching?				
4	I have faced while using Open Educational Resources in lectures				
5	I believe that Open Educational Resources have the potential to revolutionize the traditional teaching methods				

SECTION C: What is the level of self-efficacy of lecturers towards the utilization of Open Educational Resources in college of education in Minna, Niger State?

S/N	Items	SA	A	D	SD
1	I feel confident in using Open Educational Resources while teaching				
2	I often use Open Educational Resources for my lectures				
3	I have received training and support in using Open Educational Resources				

4	I find it important to incorporate Open Educational Resources in my teaching				
5	I experienced challenges in using Open Educational Resources in teaching				

SECTION D: What is the attitude of lecturers towards the utilization of Open Educational Resources in college of education in Minna, Niger State?

S/N	Items	SA	A	D	SD
1	I believe that incorporating Open Educational Resources (OERs) into my teaching is beneficial to my students				
2	I often use OERs in my lectures as part of course materials				
3	I have noticed changes in student engagement and learning outcomes since I started using OERs				
4	I believe that using OERs requires more effort on my part compared to using traditional educational resources?				
5	I believe that OERs should be more widely adopted				