

## Adoption and Use of Open Educational Resources (OER) in Distance Learning Centres of Two Nigerian Universities

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### Abstract

*The Open Educational Resources (OER) movement has enormous potential to yield much wider access to global education, but only if a critical mass of educational institutions and communities embrace openness. This study investigated the adoption and use of Open Educational Resources (OERs) in Distance learning centres. Specifically, the study was carried out in LAUTECH and UNIBADAN. Four objectives were set for the study, Viz: to ascertain student's awareness level of OER; find types of OER used by students; examine the accessibility of OERs by students and identify the challenges that students encounter while accessing OER in LAUTECH and UNIBADAN. The study adopted Social Survey Design. A total of 370 Distance learners participated in the research through google Form. The findings from the study reveal that distance learners in LAUTECH and UNIBADAN are moderately aware of the existence and benefits of OERs. Also, the Students utilize OERs to a moderate extent. In addition, it was found that they prefer to subscribe for OERs online than to access it through their institution Library. It was recommended that lecturers should encourage their students to use Open Educational Resources (OERs) and the institution libraries should provide the kind of materials the Students desire to study.*

**Keywords:** *Open Educational Resources, Distance learning, Information Materials*

### Introduction

The essence of education to national development cannot be over-emphasized as it plays an important role in the technological development and scientific orientation of any nation. It is believed that no country can develop beyond the educational attainment of its citizenry. It is in the realization of this fundamental role of education that, the Nigerian government has been making a concerted effort at harnessing the potentials inherent in education for optimal social

and economic development. However, despite various laudable educational policies initiated to promote quality education system, lack of willpower to properly fund education has been observed as one of the banes of progress in the educational sector. While the world is presently leveraging on the influence of technology to education in general, in the case of Nigeria, much remains to be done in terms of access, infrastructure and most especially, quality of the educational system (Otonko, 2012).

Today, radical changes are being witnessed in the educational sector as a result of the evolutionary impact of Information and Communication Technology (ICT) which has transformed teaching and learning beyond the traditional model of physical face to face teaching and learning. Oulmaati, Ezzahri, and Samadi, (2017) assert that educational systems are invited to adopt an ICT integration strategy to improve pedagogical practices. The advent of ICTs in higher education and the remarkable development of their uses have completely revolutionized the relationship between knowledge and pedagogical practices.

Application of ICT in educator sector has enhanced and bridged the information gap between the developed and developing nations. It has opened up opportunity for distance learning and use of open educational resources (OER). The outbreak of COVID-19 has further increased the demand for distance learning and use of open educational resources in the face of partial and total lockdown of educational institutions across the globe in the wake of the COVID-19 pandemic.

The relevance and importance of OER was further demonstrated during the period of total lockdown as access to OER opened up unlimited opportunity to both students and researchers as they continue their research activities during lockdown and other restrictions. Dorothy Gordon, Chair of Intergovernmental Council for UNESCO's Information for All Programme, proven how the COVID-19 has created the need for open and free access to knowledge dissemination and utilization (Gordon, 2020).

The open Educational Resources (OER) movement originated from the developments in Open and Distance Learning (OER) and in the wider context of a culture of open knowledge, open-source, free sharing, and peer collaboration, which emerged in the late 20th century (Akpereka & Okudare, 2018).

The OER movement has enormous potential to yield much wider access to global education, but only if a critical mass of educational institutions and communities embrace openness. There are many critical issues surrounding access, quality and costs of information and knowledge over the internet as well as on the provision of content and learning materials (Hylén, 2008). This calls for further research.

### **Objectives of the study**

The main objective of this study is to assess adoption and use of open educational resources in two Nigerian universities' distance learning centres

. The specific objectives are to:

- i. Determine the level of awareness of OER by students in LAUTECH and University of Ibadan;

- ii. Examine the pattern of use of OER that can be accessed by students in these institutions
- iii. Identify the challenges that students encounter while accessing OER in these institutions.

## Literature Review

### Concept of Distance Learning

Distance education also known as distance learning has existed for ages. It involves the acquisition of information from methods other than the traditional way of gaining knowledge—attending institutions. Jegede, (2003) defined distance education as education provided by a mode other than the conventional face-to-face method whose goals are similar to and just as noble and practical as those of on-campus full time face-to-face education. In other words, distance education is a planned learning experience or method of instruction characterized by quasipermanent separation of the instructor and learner(s) (Burns, 2011). Unlike conventional educational delivery methods, there are no structured face-to-face contacts between students and teachers. Instead, high-quality, self-directed, learner-centered instructional materials are made available to students, while instructional facilitation is carried out when necessary, typically after arrangements have been made by the university based on agreement between the students and the course facilitators. All these arrangements are important for the effectiveness of the instructional process in distance education.

The evolution of information and communication technology (ICT) has enhanced the development of distance education. Technology has now made it possible for both the teacher and student to interact almost immediately. ICT therefore provides both learners and instructors with more educational affordances and possibilities (Fu, 2013). Educational materials can be delivered instantly through computers, satellites, the internet, cable television, interactive video, etc for example, the internet has become an essential tool in the global educational dispensation and has eliminated geographical distance as the barrier to access information.

The use of the internet connects millions of users of hundreds of nationalities through the interconnectivity of thousands of networks. The overload of information on the internet in a variety of formats with relative ease of access are among the reasons that brought the technology academic patronage, especially on Open Educational Resources (OER) sites (Issa, Ibrahim, Onojah, & Onojah, 2020).

### Perceptions of Open Educational Resources (OER)

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. OER reflects those resources that attract no fees, subscriptions, tuitions, registrations, obligations, and so on, to the consumer or user of the said resources. While there are obvious cost savings that accrue from use of learning resources that are “free”, there are aspects of OER-based course development that could entail significant costs, such as the time

spent on locating, evaluating and adapting OER, and the technical infrastructure required for production and dissemination of OER-based courses (Annand, 2015).

OER is not the same as open courseware but a mix of three components: content, tools, and capacity; all of which are aimed at ensuring resource usability, durability, accessibility, and effectiveness. Thus, OER should be measured against the four quality factors of usability, accessibility, durability, and effectiveness (Stephen, 2019). OER contents can be retained, reused, revised, remixed and repurposed without restrictions which signifies the 5Rs of OER. (Grodecka&Sliwowski, 2014). The primary purpose for using OER is to facilitate access to education, and to enable collaborative and participatory innovative teaching and learning. OER are assumed to broaden access to education, to reduce the costs of materials, and to improve the overall quality of teaching (Otto, D. (2019).

In terms of usage of OER, Akomolafe and Olajire (2014) noted that there is moderate use of OER among undergraduates as a large number of students make use of the internet to access learning resources in various forms such as video, audio and texts to support learning activities. Students' perceptions of OER suggest that they like using open textbooks compared to traditional textbooks (Lindshield& Koushik, 2013). However, there is seems to be a low percentage of the level of usage of Open Educational Resources as revealed in the study of KomineasandTassopoulou, (2016). Similarly, Nwana, Egbe, andUgwuda, (2017) revealed that even though there seems to be high awareness of educational resources among undergraduates, there is very low utilization of these resources for learning. They further explained that it may have occurred due to students' attitudes toward e-resources.

### **Open Educational Resources and Distance Learning In Nigeria**

The concept of Open Educational Resources is not new in the Nigeria education system but the concept is evolving increasingly especially in this 21<sup>st</sup> century. OER as an educational method and a philosophic construct has been identified as the most potent instrument for combating the educational problems assailing a nation like Nigeria. Moore and Tait (2012) further asserted that "in developing countries, human knowledge resource development through initial and continuing education is not only seen as crucial for growth and competitiveness, but also has far-reaching social impact, for example in influencing birth rate, increasing the independence of women, and improving standards of health and rural environment"

This affirms the crucial role that education can play in developing countries like Nigeria. Education is an important ally in the role of social and economic development. Walter Perry the first vice-chancellor of the Open University of United Kingdom, noted the "scepticism garnished with ridicule and hostility" of distance education universities. According to empirical evidence, however, there is no significant difference between learning outcomes that can be attained at traditional institutions versus distance learning (Verduin& Clark 1991).

### **Relevance of Open Educational Resources to Nigerian Education**

According to Nwaocha and Iyiama (2008) the relevance of OER to Nigerian Education include the following:

### **1. Access**

It increases people's access to education. People who would have found it impossible to attend the conventional school system benefit from OER. Many stakeholders in the education sector are interested in open and distance learning because it allows greater access to educational opportunities. This is in keeping with the stated objectives of the National Policy on Education that 'maximum efforts shall be made to enable those who can benefit from higher education to be given access to it. Such access may be through universities or correspondence courses or open universities or part-time, e-learning and work-study programmes (FGN, 2004).

### **2. Social relation improvement**

Open and distance learning schemes hold some potential benefits for various stakeholders in the education and development process. To the learners, OER means more freedom of access as well as a wider range of opportunities for learning and qualifications, thereby improving their social status. It is often cheaper means of attending school for the student since some people may not be able to leave their places of work to go to school full time. Men of the armed forces and other security agencies are registered in large numbers for distance learning to enhance their social status.

### **3. Economic Growth**

OER is an avenue for institutions to improve their Internally Generated Revenue (IGR). It is also an avenue for many people to become learned and be better workers in any profession they choose or are currently engaged in. Students are allowed to read up to whatever level they want, hence contributing to the economical growth of the nation through better performance. For employers, OER offers the possibility of organising in-service training for their staff without necessarily releasing them for long periods of productive time. With a sufficient number of employees being trained, OER is often the most cost-effective means.

### **The problem Associated with the use of Open Educational Resources (OER)**

In spite of the benefits of open and distance education, overall problems that may hinder proper functioning are better understood and taken care of. These problems are discussed as follows. Poor funding: It is common knowledge that education is poorly funded in Nigeria. Lack of or low level of provision of the facilities for OER programmes in the country is one major fallout of poor funding (Umezulike, 2015). Investment in OER is therefore low because the soft and hard-wares required are costly. It is very expensive to get some of the soft wares because they are not developed locally, they are developed in Europe and other developed countries to suit their system and make their living. This is a major impediment because according to Yusuf (2006), success in any educational policy is contingent on the involvement of all stakeholders and the sponsorship of funding agencies.

Power supply: The problem of power instability in Nigeria is perennial and has been a major setback for our technological development. Most OER students that reside in cities and towns are faced with the problem of epileptic supply of power. Worse still, the majority of them live in rural areas that are not connected to the national grid (Abiodun-Oyebanji, 2018).Lack of skills in Designing Course-wares: Instructional delivery in OER is greatly affected by some facilitators' lack of knowledge and skills in designing and delivering courses in electronic format. This scenario is a fall out of the non-ICT-compliant status of the facilitators.

## METHODOLOGY

Research Design is a strategy that shapes the research. In line with the aforementioned definition, the research questions guide the careful crafting of this 'blueprint' of the study. The research design that was used for this study is Social Survey to examine the utilization of OER by Open Distance Learners in UNIBADAN and LAUTECH. Social survey design is considered appropriate in this study as it is a type of research design that can be used to measure people's opinions through.

### Research question 1: Level of awareness of Open Educational Resources (OER)?

**Table 2: Distribution of Respondents by Level of awareness of (OER)**

S/N	Level of Awareness	NA	PA	MA	FA
1	I am aware of existence of Open Educational Resources (OER)	21 (5.7%)	59 (15.9%)	150 (40.5%)	140 (37.8%)
2	OER are in digital content	19 (5.1%)	26 (7.0%)	75 (20%)	250 (67.6%)
3	I am aware that OER are readily available for use, reuse and research.	29 (7.8%)	52 (14.1%)	104 (28.1%)	185 (50.0%)
4	I am aware that OER can be accessed from anywhere.	46 (12.4%)	89 (24.1%)	119 (32.2%)	116 (31.4%)
5	I am aware that OER can be freely shared	21 (5.7%)	46 (12.4%)	85 (23.0%)	218 (58.9%)
6	I am aware OER are easy to find online	22 (5.9%)	39 (10.5%)	84 (22.7%)	225 (60.8%)
7	I am aware OER are only research journal articles	30 (8.1%)	82 (22.2%)	88 (23.8%)	170 (45.9%)
8	I am aware OER are available in video and audio format.	62 (16.8%)	68 (18.4%)	91 (24.6%)	149 (40.3%)
9	I am aware OER could be used to compliment normal class teaching	65 (17.6%)	68 (18.4%)	43 (11.6%)	194 (52.4%)

**Key:**NA=Not Aware; PA=Partially Aware; MA=Moderately Aware; FA=Fully Aware

**(Source: Researcher's Field Work, 2021)**

Table 2 shows the level of awareness of Open educational resources by respondents. Nine (9) items were used to measure this objective. As depicted on the table, the majority of the respondents were aware of the existence of OER 150(40.5%) and 140(37.8%) of the respondents

indicated that they were moderately and fully aware of the OER respectively. In response to “Awareness if OER isin digital content” 19 (5.1%) were not aware, 26 (7.0%) were partially aware, 75 (20%) were moderately aware, 250 (67.6%) were fully aware. To “Awareness if OER isreadily available for use, reuse and research” 29 (7.8%) were not aware, 52 (14.1%) were partially aware, 104 (28.1%) were moderately aware, 185(50.0%) were fully aware. This implies that the majority of the respondents are aware of Open Educational Resources.

**Research question 2: Open Education Resource(s) Used by Students**

**Table 3: Distribution of Respondents by usage of OER**

S/N	Open Education Resources Used by Students	NU	FU	U	HU
1	Electronic Books	31 (8.4%)	161 (43.5%)	116 (31.4%)	62 (16.8%)
2	Institutional Repositories	94 (25.4%)	126 (34.1%)	133 (35.9%)	17 (4.6%)
3	Streaming videos	16 (4.3%)	33 (8.9%)	61 (16.5%)	260 (70.3%)
4	Open Library	62 (16.8%)	66 (17.8%)	90 (24.3%)	152 (41.1%)
5	Open Source Software	44 (11.9%)	133 (35.9%)	158 (42.7%)	35 (9.5%)
6	Electronic journal	34 (9.2%)	129 (34.9%)	149 (40.3%)	58 (15.7%)
7	College Open Textbook	62 (16.8%)	66 (17.8%)	90 (24.3%)	152 (41.1%)
8	Directory of OER	44 (11.9%)	132 (35.7%)	143 (38.6%)	51 (13.8%)
9	OER commons	60 (16.2%)	125 (33.8%)	150 (40.5%)	35 (9.5%)
10	Coursera	16 (4.3%)	19 (5.1%)	36 (9.7%)	299 (80.8%)
11	MIT Open Courseware	151 (40.8%)	31 (8.4%)	116 (31.4%)	72 (19.5%)
12	Saylor Academy	132 (35.7%)	108 (29.2%)	113 (30.5%)	17 (4.6%)
13	Skills Commons	62 (16.8%)	88 (23.8%)	90 (24.3%)	130 (35.1%)
14	Open Stax College	141 (38.1%)	136 (36.8%)	44 (11.9%)	49 (13.2%)
15	OER World Map	152 (41.1%)	66 (17.8%)	90 (24.3%)	62 (16.8%)
16	MERLOT	142 (38.4%)	94 (25.4%)	117 (31.6)	17 (4.6%)
17	Massive Open Online Course	62 (16.8%)	66 (17.8%)	90 (24.3%)	152 (41.1%)

**NU= Not Used, FU= Fairly Used, U= Used, HU= Highly Used**

**Source: Researcher’s Field Work, 2021**

Table 3 shows the level of usage of various Open Educational Resources (OER) by the respondents. As indicated in the table, the respondents used the identified OER in varied degrees thus; the level of use of Electronic Books shows that 31(8.4%) were not used, 161(43.5%) fairly used, 116 (31.4%) used, 62 (16.8%) highly used. Equally, on Institutional Repositories, 94 (25.4%) not used, 126 (34.1%) fairly used, 133 (35.9%) used, 17 (4.6%) highly used. In the same light streaming videos show that 16 (4.3%) Not used, 33 (8.9%) were fairly used, 61(16.5%) used, 260 (70.3%) were highly used. The inference to be derived from the above expression is that the respondents make use of the open educational resources moderately.

**Research question 3: Accessibility of Open Education Resources OER)**

**Table 4: Distribution of Respondents by the Accessibility of Educational Resource(s)**

<b>S/N</b>	<b>Accessibility of OER</b>	<b>SD</b>	<b>D</b>	<b>A</b>	<b>SA</b>
1	My institution library provides access to OER	57 (15.4%)	60 (16.2%)	160 (43.2%)	93 (25.1%)
2	I subscribe for OER on my own	46 (12.4%)	83 (22.4%)	146 (39.5%)	95 (25.7%)
3	I visit other libraries to access OER.	61 (16.5%)	134 (36.2%)	92 (24.9%)	83 (22.4%)
4	My institution library subscribe to various OER platforms	141 (38.1%)	103 (27.8%)	80 (21.6%)	46 (12.4%)
5	I access OER through my institution library	39 (10.5%)	143 (38.6%)	95 (25.7%)	93 (25.1%)

**Key: SD=Strongly Disagree; D=Disagree; A=Agree; SA=Strongly Agree**

**Source: Researcher’s Field Work, 2021**

Table 4 shows the distribution of Respondents by the Accessibility of OER. Five (5) items were used to measure this objective on a four-point Likert scale. In response to “My institution library provides access to OER” 57 (15.4%) Strongly Disagree, 60 (16.2%) disagreed, 160 (43.2%) agreed, 93 (25.1) strongly agreed. In the same vein, the response to “I subscribe for OER on my own”, shows that 46 (12.4%) strongly disagreed, 83(22.4%) disagreed, 146 (39.5%) agreed, 95 (25.7%) strongly agreed. While the response to “I visit other libraries to access OER” indicated that 61 (16.5%), strongly disagreed, 134 (36.2%) disagreed, 92 (24.9%) agreed, 83 (22.4%) Strongly Agreed. This implies that the majority of the respondent's access OER through their institution’s libraries and they also subscribe to some OERs on their own.



**Research question 4: Challenges faced in the use of Open Educational Resources**

**Table 5: Challenges faced in the use of OERs**

S/N	Challenges Faced in the Use of OERs	SD	D	A	SA
1	Low level of digital literacy by OER users	72 (19.5%)	122 (33.0%)	110 (29.7%)	66 (17.8%)
2	Limited internet connectivity can be a challenge.	52 (14.1%)	63 (17.0%)	77 (20.8%)	178 (48.1%)
3	Inadequate ICT infrastructure is in the institution is challenging	31 (8.4%)	63 (17.0%)	63 (17.0%)	213 (57.6%)
4	Low level of awareness of copyright issues	136 (36.8%)	99 (26.8%)	85 (23.0%)	50 (13.5%)
5	OER is not well recognized in Nigeria	130 (35.1%)	88 (23.8%)	96 (25.9)	56 (15.1%)
6	Irrelevance of some OER to curricula	37 (10.0%)	81 (21.9%)	127 (34.3%)	125 (33.8%)
7	Lack of awareness on existing OER	39 (10.5%)	66 (17.8%)	96 (25.9%)	169 (45.7%)

**Key:** SD=Strongly Disagree; D=Disagree; A=Agree; SA=Strongly Agree

**Source:** Researcher's Field Work, 2021

Table 5 reveals the challenges faced by the respondents in the use of OERs. Data gathered from the findings indicated that:irrelevance of some OER,limited internet connectivity, lack of awareness on existing OERandinadequate ICT infrastructure are the major challenges with 68.1%, 68.9%, 71.6 and 74.6% of respondents agreed and strongly agreed to these respectively. This implies that, limited internet connectivity, inadequate ICT infrastructure, irrelevance of some OER to curricula, lack of awareness on existing OER were the major challenges face by the respondents in accessing OERs.

**Discussion of Findings**

**Research Objective One: Ascertain Students' awareness level of OER**

Findings from this study reveal that the majority of the respondent isaware of the existence of OER. It was also revealed that they are aware of the characteristic features and attributes of Open educational resources such as OER are in digital content, OER isreadily available for use, reuse, and research. Moreso, the Majority of the respondents claimed they are not fully aware of the fact that OER can be accessible anywhere and anytime. More so, the study further revealed that

among the respondents some have full awareness of the effect of OER. Ostensibly, they claimed to be aware that OER can be freely shared, easy to find online, and available in video and audio format. This contradicts the findings of Chen and Panda (2013) in a study titled needs for and utilization of OERs in distance education and found that Distance learning students have a low level of awareness of OER.

#### **Research Objective Two: Find Types of OERs used by Students**

Findings from this study revealed that overall, students of LAUTECH and the University of Ibadan make use of OERs moderately. Specifically, the students highly use OER such as Open Library, Course era, Massive Open Online Course, and the results. However, they use others such as Electronic Books, Institutional Repositories, Open Source Software, Electronic journals, College Open Textbook, OER World Map moderately. This affirms the findings of Ajayi, Shorunke, and Aboyade,(2014) who indicate that students of tertiary institutions' attitudes to information are gradually shifting from printed documents to electronic resources.

#### **Research Objective Three: Examine how OER is accessed by Students**

Another perspective that this study looked into is the accessibility of the students towards Open Educational Resources (OER). OER might be available yet the students might not be able to access it. Findings from this study reveal that the majority of the students access OERs from their subscription for OERs online. It was found that the two selected institutions (LAUTECH and UNIBADAN) libraries provide access to OER for the students. This is consistent with the findings of Hilton, (2016). However, the majority of the students don't visit the institution library to access OERs.

#### **Research Question Four: Identify the Challenges faced by students in Accessing OERs**

The study also revealed the challenges facing the use of Open Educational Resources. These challenges as found out were so severe that it discourages the students from accessing OERs in their respective institution libraries. Some of these challenges include limited internet connectivity, and inadequate ICT infrastructure, the irrelevance of some OER to curricula, and lack of awareness on existing OER. This finding is similar to that of Mtebe and Raisamo (2014) who conducted a study on challenges to adoption and use of Open Educational Resources in Higher Education in Tanzania.

#### **Conclusion**

The adoption of OER among the Distance Learning center students has been of great advantage to their educational development in this age of technology, not even only them but to the whole population at large. The usage of OER has highly enhanced the quality of the institution education in Nigeria. Previous studies reveal that utmost use of OER is yet to be attained because despite the level of understanding of the usage of OER in developed nations. In this study, it was found that Distance learning students of LAUTECH and UNIBADAN adopt and utilize Open educational resources (OERs) to a moderate extent. In addition, the two institutions (UNIBADAN and LAUTECH) provide access to OERs for the students but the majority of the students prefer to subscribe to OERs online by themselves. Although the use of OERs was found to be faced

with diverse challenges, there is no doubt that OERs have a positive impact on the quality of higher education and its adoption is gradually on the increase.

### **Recommendations**

Based on the findings and identified gaps, the following recommendations were proffered

4. Students should be encouraged by their lecturers to use Open Educational Resources because of the numerous benefits it possesses towards learning and research purposes.
5. Adequate provision of ICT infrastructure that can promote and aid easy accessibility to OER should be made available for the benefit of distance learners
6. The centers should endeavor to expose their students to paid Open Resources Sites through faculties or departments to improve its level of Utilization
7. The centers could also create their repository where conducted researches within the institution can be uploaded by various departments. Students and other users would benefit from it.

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