Survey of Open Educational Resources among Undergraduates in a State University in Nigeria

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Abstract

The purpose of this study is to find out how well Ambrose Alli University, Ekpoma, undergraduates are aware of and utilise free educational materials. Consequently, four (4) study objectives were developed to address the amount of awareness, level of use, purpose, and challenges connected with students' use of OERs. The study adopted a descriptive survey design for a target population of 8,501 undergraduates across three faculties (Arts, Education and Physical Sciences) in the university enrolled for the 2018/2019 academic session. The study employed Yamane (1967) sample size determination and stratified random sampling technique to arrive at a sample size of 250 undergraduates which was allocated proportionally across the three faculties. A structured questionnaire was used to elicit responses which were analysed using descriptive statistics of frequency, percentage, arithmetic mean and standard deviation. The result of the analysis revealed a low level of OERs awareness among the undergraduates. Also, the study showed a low level of use of OERs among the undergraduates. Majority of those who used OERs affirmed their purpose for use to be acquiring free and quality information resources and increase their knowledge in their area of study. Findings from the analysis also revealed that lack of awareness and lack of knowledge on how to use OERs were major challenges confronting the use of OERs among the undergraduates. The study conclusively noted that embracing the full potential of OERs pushes universities to critically reconsider their policies and strategies especially in the areas of awareness and use by undergraduates who are the key beneficiary of the open access initiative

Keywords: Ambrose Alli University, Open Educational Resources (OERs), Awareness of OERs, Use of OERs, Undergraduates.

Introduction

University's quest to achieve their objectives and rightly position themselves as a knowledge hub is to a great measure enabled by the availability and use of educational resources which exist in various formants inclusive of digital, in line with current trends and adoption of information technologies. These resources serve as facilitating conditions for the smooth educational experience and effective learning outcome of university students. However, Komineas and Tassopoulou (2016) noted that the accessibility to quality educational resources is limited for students and educators. This challenge is more severe among students in developing countries like Nigeria where there is a high prevalence of poverty. This is in consonance with the report of the National Bureau of Statistics (2019), that 40.1% (over 82.9million) of Nigerians are considered poor by national standards. This reinforces the need for students to freely access information and knowledge-based resources in their pursuit of higher education, for which Open Educational Resources (OER) has come to the rescue.

Open Educational Resources (OERs) were adopted by universities around 2001, according to Poposki (2010), to make the most of the course materials available on the Web for free to anybody, anywhere. The author went on to say that this resulted in a "bandwagon effect," with other world-renowned colleges following suit, which made OERs popular both within and outside the academic community.

In 2002, the United Nations Educational, Scientific, and Cultural Organisation (UNESCO) defined OERs as educational resources aided by technology for its access, utilisation, and adaptation by a user group for non-profit ventures, and this definition has been updated several times thereafter. Beyond UNESCO's definition, Groom (2013) stated that OERs cut across information resources aimed at educational (teaching and learning) and research purposes that are freely available. OERs, according to Harsasi (2015), comprise software and tools that support the creation, use, modification, and exchange of teaching/learning educational materials, learning management systems (like Moodle), tools for building a community of learners, and implementation resources such as open licences.

In higher education today, the use of OERs is becoming a global trend due to the shift from ownership to access to information resources, and the unexpected influx of new and innovative technology which has transformed the globe into a global village in terms of information generation, distribution, and consumption. While availability is the fundamental principle enshrined within the ideology of OERs, availability alone does not mean that a resource is being utilized; rather, awareness precedes use. Consequently, while a wide range of OERs are available (moderately or highly) on the Internet (Olufunke & Adegun, 2014; Navarrete, Luján-Mora & Peñafiel, 2016), awareness seems to be low even among undergraduates (Sexias, et al., 2014; Christoforidou & Georgiadou, 2022). While the availability, awareness and use of OERs seem to vary from one clime to another as predicted by individual, environmental, social and technological factors; it is germane to assess these concepts from regions and institutions where empirical pieces of evidence are lacking or at best, scarce.

After conducting a thorough assessment of the current literature, it was discovered that there is a paucity of research in the field of student awareness and usage of OERs in developing countries. Furthermore, no research was discovered to have been conducted with a specific focus on undergraduates at Ambrose Alli University, Ekpoma. As a result of this knowledge gap, the current investigation was deemed appropriate.

Objectives of the Study

The study aims at exploring the OERs' awareness and use by undergraduates of Ambrose Alli University, Ekpoma. The specific objectives are to:

i. find out the level of OERs' awareness among undergraduates of Ambrose Alli University, Ekpoma;

ii. ascertain the level of use of OERs by the undergraduates;

iii. ascertain the purposes for which the undergraduates use OERs; and

iv. identify the challenges the undergraduates encountered in their use OERs.

Review of Related Literature

The Open Educational Resources (OER) movement has flourished in recent years, originating in advancements in Open and Distance Learning (ODL) and in the larger context of a culture of open knowledge, unrestricted distribution, and peer collaboration that emerged in the late twentieth century (Willey in Akomolafe & Olajire, 2014). OERs are defined as materials for teaching and learning that are freely available on the internet for anybody to use, regardless of their educational background (Michael, 2015). According to Commonwealth of Learning (2011), OERs are licenced openly and exist in the public domain which makes it possible to use or reuse them without financial hindrances to the end-users. Their formats can include text (either print or digital), audio, video, multimedia, and hypermedia; or a combination of these formats in various permutations. Depending on the situation, they can be based on one learning point or several learning points (module), a full course, or even an entire program of study. The concept of OERs has spawned a number of initiatives. Massive Open Online Courses (MOOCs) are an example of OERs which allows thousands of people across the globe to participate in a single online course simultaneously (Chamberlin & Parish, 2011). Given its relevance to students' learning and acquisition of knowledge, it becomes relevant to survey undergraduates' awareness of the concept.

Knowledge gained via the interaction between an agent and its surroundings is known as "awareness," or simply "knowing what's going on" (Gutwin & Greenberg, 2012). Babson's Survey Research Group released an analysis showing that OERs have gained a lot of traction in the last year. Babson's fourth annual Faculty Survey measures an essential set of benchmarks for which faculty behavior and attitudes toward OERs and traditional course materials are based. New measures suggest that OERs are continuing to grow and accelerate, and there are crucial signals that faculty are looking for materials that are more economical and more flexible to alter and remix. The study by Babson Survey Research Group (2019) revealed that students'

and lecturers' awareness of OERs increased every year; 46% of faculty members are aware of OERs, up from 34% percent three years ago.

Similarly, a survey of higher institutions revealed that one-third of faculty members in the United States had awareness of OERs and desires to utilise them due to their recognition that these resources have the same quality as the traditional educational materials (Allen & Seaman, 2014). An Indian study of higher education faculty found that 41.7% were familiar with OERs and that 24% had generated or used OERs (Kumar & Singh, 2017). Over the past few years, OERs have gained widespread recognition as a priceless tool for teachers, students, and institutions across the globe.

Information is used in the conduct of educational activities (like teaching and learning), which is a component of information behavior, and is synonymous with the usage of OERs. Information use behaviour refers to any conduct that is associated with the application or use of information (Wilson in Onaifo, 2016). The author defines a person's information use behavior as a combination of physical and mental behaviors taken to assimilate new information into an individual's existing knowledge base. Hu, Li, Li and Huang (2015) investigated the use of OER by Chinese college students, as well as perceived hurdles to the dissemination of OER. The authors discovered that a number of factors influence students' use of OERs, including their prior experience, the nature of the materials themselves, and the technology platforms available for accessing the resources.

Beyond the monetary value, OERs give different options for teaching and learning innovation (Wiley & Green, 2012). Giving faculty the power to select individual resources, adapt them, and assemble them in new ways promises a larger range of learning environments (EDUCAUSE, 2010). Moreover, OERs enable undergraduates to gain access to a greater choice of learning materials, both on their core subject and in related areas. Undergraduates can share information resources with their peers through the use of OERs. They can also boost their own academic excellence by accessing high-quality, ready-made teaching materials created by scholars in their own field. Undergraduates that utilise OERs have the option of selecting the specific resource(s) they want to use, as well as editing and combining those resources in special ways, yielding a greater diversification of learning opportunities for everyone (Katsusuke, et al., 2017).

Open educational resources offer a wide range of advantages which include the opportunity to collaborate with others. OERs according to Diallo, Thuo and Wright (2012), make it possible to reach students all over the world because of the ease of access it provides. They go on to say that OERs make quality education more accessible and lower the overall cost of education. Besides the reduction of learning and education costs, OERs also provide low-cost methods for distributing knowledge. Some researchers credit OERs' ability to distribute digital content to various users in multiple locations to their non-rival nature (Gakindi, 2010; Wright & Reju, 2012; Ngimwa & Wilson, 2012).

The usage of OERs and the development and implementation of sustainable OERs initiatives face a number of problems, both at the individual and institutional levels (Walsh, 2011). Lack of resources and difficulty in locating OERs are the two biggest deterrents to faculty adoption (Allen & Seaman, 2014). Asian OERs utilization and re-use have been delayed because of the many disconnected and diverse repositories, according to a regional survey (Abeywardena, Gajaraj & Chan, 2012). A number of academics have also expressed worry about connectivity concerns, such as limited bandwidth and Internet access, which may be problematic for many potential OERs users (Dhanarajan & Porter, 2013).

One of the primary problems in implementing OERs efforts, according to Okonkwo (2012), is the lack of necessary skills among educators to use OERs. Moreover, not having adequate knowledge about OERs and the copyright issues surrounding them, absence of institutional support and inadequate technological infrastructures are some of the hindrances to the effective accessibility and utilisation of OERs (Lesko, 2013). This corroborates a European report (OPAL the Open Educational Quality Initiative) which asserted that lack of institutional support, technical means for sharing and customising materials, users' skills and time, OER quality, and personal factors such as mistrust were recognised as important hurdles to adopting OERs (Andrade et al., 2011). As a way ahead, Hart and Oosthuizen (2012) advocated for the adoption of policies that will enable the development of OERs programs. The author further opined that educational institutions are expected to consciously and strategically develop OERs programmes in a bid to ensure the successful implementation of OERs projects.

Research Methodology

The descriptive survey design was used in this study, which is a method of collecting data or information about people's ideas, attitudes, feelings, and behaviors in a systematic and comprehensive manner. The population for this study consists of 22,962 undergraduate students of Ambrose Alli University. A stratified random sampling technique was employed in dividing the population into smaller groups (Faculties). Thereafter, three (3) faculties in the university were randomly selected which constituted 8,501 undergraduates enrolled for the 2018/2019 academic session. Based on the Yamane (1967) Table for calculating sample size, with a population (N) of 8,501 and ±7% precision level, the sample size (n) was estimated at 250. Sample proportionate to size was used to spread the 250 across the three participating Faculties, as seen in Table 1.

The study employed a structured questionnaire as the instrument for data elicitation. The questionnaire contained five sections, the first section elicited data on the respondents' demographics, while the other sections elicited data based on the study's objectives, to assess the awareness, use, purpose and challenges, accordingly. Items within the questionnaire were generated in line with existing literature on the subject matter and validated by two experts in library practice. Thereafter, the instruments were administered to the respondents and the retrieved data were subjected to descriptive statistics of frequency, percentage, arithmetic mean (with a criterion mean of 2.5 where applicable) and standard deviation. A mean decision was reached based on a four-point Likert scale ranging from Very High Level = 4 to Very Low Level = 1. This gives a criterion mean of 2.5 as such a calculated mean below 2.5 is considered low while a calculated mean above 2.5 is considered high.

Presentation of Results

Out of the 250 copies of the questionnaire administered to the respondents, 231 copies were

Table 1. Population and Sample Size across the Selected Faculties

S/N	Faculty	Total Number of Students	Sample Size
1.	Arts	2,552	75
2.	Education	3,824	112
3.	Physical Sciences	2,125	63
Total		**8,501**	**250**

Table 2. Demographics of respondents

S/N	Characteristics	Frequency	Percentage (%)
	Gender		
1.	Males	107	46.3
2.	Females	124	53.7
Total		**231**	**100%**
	Age Range		
1.	20 years and below	56	24.2
2.	21-30 years	162	70.2
3.	Above 30 years	13	5.6
	Total	**231**	**100%**
	Level of Study		
1.	100 Level	61	26.4
2.	200 Level	55	23.8
3.	300 Level	57	24.7
4.	400 Level	58	25.1
	Total	**231**	**100%**

Table 3. Level of Awareness of OERs by the Undergraduates

S/N	Open Educational Resources	Very High Level	High Level	Low Level	Very Low Level	Mean	Standard Deviation
1.	Academic Earths	6	13	90	114	1.60	0.32
2.	Cousera	111	57	12	45	3.04	0.44
3.	EdX Courses	16	20	75	112	1.73	0.46
4.	Khan Academy	112	56	12	45	3.04	0.44
5.	MIT Open Courseware	91	59	33	41	2.89	0.44
6.	Open Educational Consortium	16	19	71	116	1.71	0.47
7.	Open Michigan	3	12	113	99	1.64	0.25
8.	Open2Study	49	119	24	29	2.85	0.29
9.	OERu	-	3	152	72	1.70	0.14
10.	OER Commons	14	23	112	75	1.89	0.36
11.	Wikibooks	-	13	129	77	1.71	0.19
12.	Open Tapestry	16	19	71	116	1.71	0.47
13.	OpenLearning Initiative	12	64	79	76	2.05	0.40
14.	Ambrose Alli University OER	12	63	72	76	2.04	0.40
15.	WikiEducator	5	17	114	90	1.72	0.28
16.	MERLOT	12	64	79	76	2.05	0.40
17.	HavardX MOOCs	12	63	72	76	2.04	0.40
18.	Lumen Learning	12	64	79	76	2.05	0.40
19.	Open Courseware	32	95	43	51	2.50	0.40
20.	Teach Astronomy	3	12	113	99	1.64	0.25
21.	Spiral Physics	-	3	152	72	1.70	0.14
		Grand mean = 2.34					

filled, returned and considered fit for analysis, which represented 92.4% return rate.

Demographic Characteristics of the Respondents

This section shows the analysis of respondents' demographics which for the purpose of this study is limited to gender, age-range and level of study.

Table 2 shows that more females participated in the study either because females populated the faculties that were sampled or because they are more interested in voluntarily participating in the survey. Majority of the respondents were within the age range of 21-30 years followed by those below 20 years old. This reflects the statistics of the age-range predominant among institutions of higher learning. Moreover, most of the respondents were in 100 level followed by those in 400 level, while the least responses were from undergraduates in 200 level. This did not show a logical pattern which could suggest that the level of study of respondents might not significantly influence their willingness to participate in a survey.

Level of Awareness of OERs by Undergraduates

Table 3 showed that the respondents had a high level of awareness of Coursera, Khan Academy, MIT Courseware, Open2Study and Open Courseware. However, the respondents had low awareness of OERs like Academic Earths, Open Michigan, Spiral Physics among others. With a grand mean of 2.3, it can also be concluded that the general level of awareness of OERs by the respondents is low.

Level of Use of OERs by Undergraduates

Table 4 shows that majority of the respondents use Coursera and Open Courseware, followed by Khan Academy and MIT Open Courseware. The least used OERs were identified as EdX Courses and Open Michigan. With a grand mean of 1.93, the level of

Table 4. Level of Use of OERs by the Undergraduates

S/N	Open Educational Resources	Very High Level	High Level	Low Level	Very Low Level	Mean	Standard Deviation
1.	Academic Earths	3	12	113	95	1.65	0.25
2.	Cousera	28	102	54	43	2.51	0.40
3.	EdX Courses	6	13	90	114	1.60	0.32
4.	Khan Academy	31	98	52	45	2.50	0.37
5.	MIT Open Courseware	29	98	52	44	2.50	0.43
6.	Open Educational Consortium	2	17	112	91	1.68	0.25
7.	Open Michigan	3	12	113	95	1.65	0.25
8.	Open2Study	13	41	84	86	1.92	0.41
9.	OERu	-	13	129	77	1.71	0.19
10.	OER Commons	14	25	119	65	1.95	0.33
11.	Wikibooks	14	25	119	65	1.95	0.33
12.	Open Tapestry	2	17	112	91	1.68	0.25
13.	OpenLearning Initiative	-	3	152	72	1.70	0.14
14.	Ambrose Alli University OER	6	13	90	114	1.60	0.32
15.	WikiEducator	14	25	119	65	1.95	0.33
16.	MERLOT	14	19	154	41	2.03	0.25
17.	HavardX MOOCs	17	33	129	47	2.09	0.31
18.	Lumen Learning	2	17	112	91	1.68	0.25
19.	Open Courseware	29	104	51	44	2.51	0.32
20.	Teach Astronomy	5	19	162	41	1.95	0.18
21.	Spiral Physics	2	17	112	91	1.68	0.25
	Grand mean = 1.93						

Table 5. Purposes of OERs utilization

S/N	Purpose	Frequency	Percentage (%)
1.	I make use of OERs to increase my knowledge in my field of study	189	81.8
2.	I take advantage of available OERs in carrying out assignments and term papers	162	70.1
3.	I make use of OERs in preparing for seminars and presentations	17	7.4
4.	I use OERs so as to gain a thorough understanding of concepts I have already been taught	187	80.9
5.	I use OERs to acquire free and quality resources	191	82.7
6.	I use OERs when preparing for continuous assessments	34	14.7
7.	I make use of OERs so as to get a complete education	59	25.5
8.	I use OERs to get academic inspiration	76	32.9
9.	I use OERs for personal development	182	78.8

Table 6. Challenges to OERs utilization

S/N	Challenges	Frequency	Percentage (%)
1.	Lack of awareness of the importance of OERs	116	50.3
2.	Lack of knowledge on how to use OERs	131	56.7
3.	The OERs I have access to do not have enough subject coverage	43	18.6
4.	The OERs I have access to are not relevant to my education in terms of local context	126	54.5
5.	I have no knowledge about permissions to use OERs	127	55
6.	The OERs I have access to are not of high quality	14	6.1
7.	The OERs I have access to are not effective at improving student performance	19	8.2
8.	The technicality of audio and video in OER is a major barrier to accessing their content	62	26.8
9.	Lack of regular updates of materials on OER	24	10.4
10.	Lack of access to the Internet	3	1.3

OERs used by the undergraduate is considered as low.

Purposes for which Undergraduates Use OERs

Table 5 on the purpose for OERs utilization among the undergraduates reveals that majority of the respondents constituting 82.7% indicated that they use OERs to get free and quality information resources, followed by 81.8% of the respondents who noted they use OERs to increase their knowledge in their field of study. The item with the least score (14.7%) was the use OERs when preparing for continuous assessments.

Challenges Undergraduates Face in their Use of OERs

On the challenges undergraduate faced in using OERs, majority of the respondents (56.7%) were challenged by the lack of knowledge on how to use OERs, followed by the lack of awareness of the importance of OERs (50.3%). The least item identified by the respondents as a challenge to OERs utilization was access to the Internet (1.3%).

Discussion of Findings

The study revealed that the level of awareness of OERs among the undergraduates was low. This is in agreement with Allen & Seaman (2014). They carried out a survey that revealed most students in the United States are unaware of OERs, desire to make use of them, and believe that they are as good as or better than traditional educational materials. In contrast to this finding, Kumar and Sing (2017) revealed that 41.7% of their study's population had heard of OERs. Their stance corroborates Akomolafe and Olajire (2014), who asserted that the use of OER is becoming a global trend, with students becoming increasingly aware of their use and relevance.

The result of the study showed a low level of OERs utilisation by the undergraduates. This finding is consistent with Kumar and Singh (2017), who discovered that just 25% of respondents have used OERs. It should be noted, however, that their research focused on faculty members rather than students. Furthermore, Gakibayo, Ikoja-Odongo, and Okello-Obura (2013) investigated how students in Uganda's Mbarara University Library used OERs. Due to a number of challenges, the authors discovered that students' utilisation of electronic information resources was limited. By implication, though freely available, OERs utilisation especially by undergraduates could be impeded by factors outside their utmost control including instability of Internet connectivity and the high cost of Internet data. However, the low use of OERs could also be a resultant effect of poor awareness of OERs

According to the findings of this study, the majority of respondents use OERs for obtaining free, high-quality learning resources, expanding their knowledge in their field of study, gaining a thorough understanding of concepts already taught, personal

development, and completing assignments and term papers. According to Onaifo (2016), undergraduates use OERs to gain access to a wider selection of learning materials on their core subject(s) as well as related areas. Undergraduates can also use OERs to share information resources with their peers and to boost their productivity by accessing high-quality, ready-made educational materials created by experts in their field. Thus, while undergraduates are on the lookout for free and useful educational resources necessitated by their limited financial resources, OERs which are made available by the principle of open knowledge, become vital for their academic achievement and fulfilment. By extension, information seekers outside the academic community without access to certain educational databases behind paywalls can also get access to education resources with some amount of academic credibility.

The challenges faced by majority of the respondents in their use of OERs were lack of knowledge on how to use OERs, lack of knowledge about permissions to use OERs, as well as lack of awareness of the importance of OERs generally. In line with these findings, Gakibayo, Ikoja-Odongo and Okello-Obura (2013) found that the reasons for the low use of OERs included poor information literacy skills. By implication, the information literacy skills of students are a prerequisite to the effective utilisation of OERs. This is premised on the fact that an information literate student can access information resources online, evaluate the credibility of the resources and use them to meet their information need. Moreover, Cannell (2013) acknowledged that the significance of the challenges posed by technology when they indicate 'technical issues' should be addressed by organisations and institutions in order to overcome the challenge in the use of OERs. However, such technical issues could also be copyright protection and permission involved in the use of OERs by students.

Conclusion and Recommendations

A paradigm shift is emerging in higher education especially regarding how universities should address personalized and collaborative mobile learning. At the heart of this is the relevance and importance of OERs which gives free access to a wide range of information resources. It has been agreed that OERs are indeed disruptive forces by challenging fundamental academic traditions such as the classroom, scientific publications and traditional paths to academic status. Embracing the full potential of OERs pushes universities to radically rethink their policies and strategies especially in the areas of awareness and use by undergraduates who are key beneficiaries of the open-access initiative. Consequently, much work needs to be done to improve students' knowledge and adoption of OERs.

In view of the findings and conclusion of the study, the following recommendations are made:

i. The university library should work with faculty to raise students' awareness of OERs and their value through publication in the University bulletins, library orientation and literacy programmes.

ii. The university library should teach students how to access and use OERs as part of library orientation programmes.

iii. The school's online portal for students should have visible links to useful and relevant OERs.

iv. University management should ensure the availability of free Internet connectivity on campus to encourage the access, download and use of online OERs by students.

v. List of relevant OERs should be published in the school's bulletin and other information outlets, with regular updates.

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