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Abstract

This study surveyed the challenges and opportunities of access and use of open access resources by undergraduate students in selected federal universities in south-east, Nigeria. The study employed descriptive survey method and quantitative research technique, using questionnaire as instrument for data collection. A total of 369 students selected from four federal universities in South East, Nigeria was used as the population of the study. The study found that the students' respondents are aware of open access resources and use them daily because these resources saves time and provides literature for their research work. Despite the associated benefits students derive from open access resources, there are challenges in accessing and using them such as inadequate training, unsuitable infrastructures and the resources not containing information in their field of study. Though there are challenges in accessing these resources, availability of information resources makes research writing easy and keeps the students informed of current trends. The Call for open access to information resources have been the declaration of Library associations and most governments. This study therefore concluded that libraries/librarians should facilitate student's access to open access resources to enhance/improve library services and for information provision.

Keywords: Freely available, Free resources, Access services, Freely available opportunities, Freely available challenges, Undergraduate students, Nigeria

Introduction

Research is important in different aspects of human endeavours. Its aim is to produce new discoveries, which contributed considerably to national and economic development. These new discoveries are in the form of research output made available to information seekers in the library. Oyewusi and Oyeboade (2006), are of the opinion that faculty members, students and researchers have realised the important role the library plays in providing information for research as it acts as a means by which patrons can obtain the newest research-based and highly versed knowledge set in print or digital form.. The print materials are accessed offline and electronic ones are accessed online using computer and telecommunication technologies. In recent years, repositories of knowledge have undergone a great metamorphosis in building their collections and in rendering services to users. This has been made possible using ICT facilities. Nowadays, libraries house resources in digital formats which make use of technologies and this has improved the organization of academic knowledge to reduce time for retrieval (Sherma, 2009). Ani and Ahiauzu (2008) are of the opinion that the libraries passage into the electronic era has not only brought about growth of electronic information but has provided users with new tools for searching and retrieving information as well. Library resources cannot be used without adequate provision of means for library users to

access them. However, most institutions complain about low budgets and inadequate sources of funds to acquire resources and facilities for their libraries to satisfy the patrons. Hence, there is the need to explore an avenue such as open access to acquire information resources at little or no cost to institutions. Open access (OA) is an effort to make information resources available to users without charge. This has reduced the challenges of the high price of online access fees and institution budget cuts. OA has been variously defined by different authors, but the beginning of the 21st century marked the emergence of the unrestricted access to research output. In literature, most people have defined OA according to the Budapest Open Access Initiative (BOAI) definition (as cited in Swan, 2012) as the free, unrestricted online availability and use of resources by users. Therefore, Rassiya and Chinnasamy (2014), are of the opinion that free access to electronic information by users is the main thrust of OA. Despite the various definitions of OA, the BOAI definition remains the most influential today.

Nowadays, the survival of libraries depends on students' use of the various information resources (print, electronic including open access resources) but it is still not clear whether these students are fully aware of the rich information contents available in these open access resources (OARS) to improve their education. In order to increase students' access to information, there is need for universities in Nigeria to join the OA trend to make OARS available to the students. However, there are associated challenges and opportunities, and limited empirical evidence is available on whether the students, who are the major stakeholders, are making use of these OARS. In addition, researchers have not considered determining the challenges and opportunities of OA, particularly from the perspective of Nigerian university undergraduate students. These are gaps in knowledge that this research therefore deemed to fill. The study explored the challenges and opportunities of access to and use of OARS by students in selected federal universities in south-east, Nigeria.

Objectives of the Study

- (a) To find out the level of awareness of OARS by students in selected federal universities in south-east Nigeria
- (b) To find out the frequency of using OARS by students
- (c) To identify the reasons for students' use of OARS.
- (d) To identify the challenges students' encounter while accessing OARS
- (e) To highlight the opportunities created for students while accessing OARS

Literature Review

Open Access Resources

Open Access Resources are one of the newest channels through which access to information can be gained by students in institutions of higher learning in the Nigeria and the world over. Many authors have variously defined OARs. Prince and Saravanan (2015) defined OARs as electronic resources which are available to the end user without payment. This means that there is no need for the institution or the individual to pay for accessing and using the resources. One of the goals of OA is that anyone on the public internet can access and use OARs to the fullest capacity; it gives users access to newest information without restriction and they are made available, published and disseminated quickly on the internet. These resources include library catalogues (OPAC), OA journals, OA magazines, OA databases, OA e-books, OA theses, website information, OA repositories, etc. Bala, Bansal and Sharma (2018) in their view lists research reports, conference papers, research articles, audio/video lectures and e-newspapers as types of OARs. Users can access and use OARs regardless of wherever they are located.

Awareness of Open Access Resources

Students conduct studies with the aim of producing quality research at the end of the day. For them to do this, they must be in tune with the new ways of carrying out research (Okore, Anaehobi & Haliru, 2015). Students and scientists can carry out a successful and easy research only when information materials are made available to them, when they are aware of them and can freely access and use them. The awareness of OA resources is important, especially in this era of serials crisis and budget cuts in many institutions.

Many researchers have carried out studies on awareness of OARs. Some findings of the studies like that by Ivwighreghweta and Onoriode (2012) on awareness and use of OA journals by Library and Information Science (LIS) students at the University of Ibadan, Nigeria indicates that the majority of the students were not aware of the existence of Library Philosophy and Practice, Libri and several others OA journals. This may have been due to the inadequacy and ineffectiveness of workshops/conferences and poor internet use due to poor services. Also, the findings of a study by Rowlands and Nicholas (2005) reveals that in North America the awareness of OA repositories was higher than the awareness of other OA electronic resources which was reported to be low. The findings of Arosanyin and Ajibili (2014) on the awareness and utilisation of OARS in Asom Bur Learning Resource Centre, University of Mkar by undergraduate students, reveals that the students were moderately aware of the existence of OARs. Muthuvennila and Thanuskodi (2018) study on awareness of OARs among the DDE students shows that most of the respondents were aware of OARs available from the library. Despite the findings of these studies, it has been observed in literature that there is need for more advocacy on OA as the concept of OARs have not been fully understood by students and researchers alike.

Access to and Use of Open Access Resources

Muthuvennila and Thanuskodi (2018) point out that access to information has traditionally been provided to users through academic journals, research collections and other print publications. But today, OA has globally come to provide free access to scholarly literature for users without any payment. Iyoro (2004) posits that accessibility is a prerequisite for use of information and therefore Ugah (2008) is of the view that people are more likely to use information resources when they have access to them or are given access to the resources. As was pointed out by Taylor and Francis (2013), free to access does not mean easy to find and so it is important that institutions invest more in surfing this free content in order to give users access to them. In other words, the way OARs are used will greatly depend on the awareness of these resources by students, the sources of getting the information, tools for accessing them and purpose of using the resources. The findings of the study by Ivwighreweta and Onoriode (2012) on awareness and use of OA journals by LIS students at the University of Ibadan, Nigeria shows that there was low use of OA journals by the students. Also, the findings of a study by Arosanyin and Ajibili (2014) on undergraduate students' awareness and utilisation of OARs in Asom Bur Learning Resource Centre, University of Mkar, shows that most of the students used OARs to supplement the library's inadequate information materials. However, optimal utilisation of the resources by the students was affected by lack of internet searching skills and services. Conversely, the findings of a study by Ani (2010) shows that the students in the universities surveyed mostly used the internet than electronic journals and online databases for teaching and learning. Muthuvennila and Thanuskodi (2018) in their study found out that the most of their respondents used OARs on daily basis and were satisfied with their level of access to the resources. Similarly, Veena (2016) found that 47.36% of respondents used OARs and 64.47% were also satisfied with these resources.

Reasons for Access to and Use of Open Access Resources

Libraries cannot satisfy the information needs of their users with only traditional materials as most of them are understocked. Therefore, libraries nowadays advocate for OA and promote the use OARs. There are a lot of reasons why students and other researchers' access and use OARs viz: no access limitation to the newest information, easy conduct of research by students and improves the quality of their output, fast access to information. In other words, free electronic resources are the most valuable communication channel that promotes research (Omotayo, 2010). Veena (2016) indicates that users can easily access articles and electronic resources online free of charge and that they use these resources because they are more informative, and timesaving. Similarly, Muthuvennila and Thanuskodi (2018) state that OARs are advantageous by being more informative, timesaving, providing larger potential evidence and being easy to access. Prince and Saravanan (2015) explained that users use OARs because they are freely available, easy to collect, have quality and are reliable, all the information is in one place, the resources are digital in format and are full text.

Challenges of Access to and Use of Open Access Resources

As there are a lot of benefits derived from the use of OARs, there are still many factors that hinder their effective access and use. Veena (2016) lists the major problems of accessing these information resources as slow internet access, it is hard to obtain quality information to solve a problem, difficulty in finding relevant information, excess amount of content online, absence of technical skills and few computers with internet facilities. Ashraf and Mohammed (2017) reveal that users face barriers of lack of guidance and support, difficulty in locating the URL, lack of awareness, and inconsistency of availability of OARs. Samzugi and Mwinyimbegu (n.d.) identify low level of internet connectivity, power interruptions, lack of/poor internet search skills, lack of cooperation from library staff, inadequate number of computers and irrelevant information as problems users encounter when accessing open educational resources. This finding corroborates with the findings of a study by Oshilalu (2011), which indicates erratic power supply as a problem to libraries in developing countries in ensuring access to OARs and suggests that a constant supply of power should be made available to libraries to facilitate use of OARs.

Methodology

The study is a survey. Fourth-year students of faculties of Science and Engineering were purposively selected from four federal universities in south-east, Nigeria, namely University of Nigeria, Nsukka, Federal University of Technology, Owerri, Nnamdi Azikiwe University, Awka and Micheal Okpara University of Agriculture, Umudike. These students were selected because they were in their research class and needed more resources to guide them in their research works. The choice of these two faculties was based on the emphasis and priority given to research in science and engineering by the federal government in the development of the nation. The population of students from the four universities totalled 4,500 students. Gall, Gall and Borg (2007) suggest that for a population of 2000-5000, 10% of the population can be used for the study, whereas for a population in hundreds, 50% of the population is appropriate for a study. Based on this, 10% of the student population from each university was studied Therefore the total population studied was 450 students.

Data for the study was collected using a questionnaire which was constructed based on the objectives of the study. The questionnaire was divided into four clusters: the first cluster addressed awareness of OARs, cluster 2 was on the use of OA, cluster 3 was on challenges of access to OA e-resources and cluster 4 was on opportunities that access to OARs creates for students. The questionnaire was validated by two experts in LIS. Corrections which included grouping the items by cluster and other editorial corrections were made before it was used for collection of data. The questionnaire was administered on the respondents by the researchers but were retrieved after completion from the respondents by research assistants. 369 questionnaires were returned out of the 450 questionnaires distributed and were found useful for the study. The analysis of data was done using tables, percentages and frequencies.

Results

The result of the study on OARs awareness and use by students shows that 71% of the students were aware of OARs, 69.4% of them had used OARs and 30% had not.

Table 1. Frequency of using of OARs by students

E-resources	Daily	2-3times a week	Occasionally	Once a week	2-3times a month	No response
Library catalogue (OPAC)	38.2%	7.9%	14.1%	27.1%	4.6%	8.1%
Online databases	50.4%	8.1%	13.0%	21.4%	1.6%	5.4%
E-books	40.9%	11.7%	12.2%	24.9%	4.1%	6.2%
E-journals	53.4%	4.9%	8.9%	24.7%	3.3%	4.9%
Theses and dissertations	66.1%	1.6%	2.2%	18.2%	2.2%	9.8%
Repositories	52.6%	13.3%	8.4%	15.4%	3.5%	6.8%
E-magazines	65.3%	6.2%	5.7%	16.0%	1.6%	5.1%

Table 1 shows that most of the respondents used theses and dissertations mostly, followed by e-magazines, e-journals, repositories, online databases, e-books and the library catalogue (OPAC) on a daily basis. This implies that majority of the students use most of the OARs on a daily basis.

Table 2. Reasons for use of OARs by students

S/N	Reasons	A%	UND%	D%
1	OARs are relatively easy to use	70	20	10
2	They save time	71	21	8
3	OARs provide access to literature for research work	65.3	22.2	12.5
4	For research purposes (project/thesis/dissertation works)	72.1	22.5	5.4
5	OARs are helpful	68.3	25.5	6.2
6	OARs are of quality and reliable	68	23	9
7	They are digital in format	61.6	27.4	11
8	They contain relevant information	72.8	24.2	3
9	OARs provide users with unlimited information	68.5	25.2	6.3

Note: A= Agree, UND= Undecided, D= Disagree

To determine the students' percentage response for reasons for using OA resources, Strongly Agree and Agree and Strongly Disagree and Disagree were merged together respectively as shown in table 2 above. The results showed that the respondents used OARs because they obtained relevant information from these resources; they used OARs for their research; they found them easy to use and they saved time. This shows that OARs contain useful materials. It is therefore necessary that universities in Nigeria encourage the use of OARs by students.

Table 3. Challenges of accessing OARs by students

Challenges	Serious Problem	Not at All a Problem
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Inadequate training	233 (63.3%)	145 (36.7%)
Unsuitable infrastructures	215 (59.2%)	151 (40.8%)
OARs not containing information in their field	211 (57.1%)	158 (42.9%)
Hard to identify quality	203 (55.1%)	166 (44.9%)
Lack of search skills	188 (51.0%)	180 (49.0%)
Overload of information	181 (49.0%)	188 (51.0%)
Lack of guidance and support	173 (46.9%)	196 (53.1%)
OARs not constantly available	135 (36.7%)	233 (63.3%)
Difficulty to locate URL	128 (32.7%)	248 (67.3%)
Lack of awareness	90 (24.5%)	278 (75.5%)

The findings in Table 3 shows that most of the students indicated inadequate training, unsuitable infrastructure and OARs not containing information in their field as the most serious problems preventing them from accessing OARs.

The Opportunities in Accessing Open Access Resources

From the findings of the study, a lot of opportunities are made available to students while accessing OARs. They are as follows:

In the face of lack of funds and/or the inability of parent institutions to release available funds for subscription to paid-for resources, OARs offers students the opportunity to complete their education in their field of study. OA enables the students to access materials online anywhere in the world. It puts an end to the story that a student searched full-text articles but could only access the abstract or that the library does not subscribe to the journal. Similarly, OARs offer students the opportunity to access vast information materials to augment their textbooks. Most parent may not have money to buy the required textbooks for their wards but through access to OARs, these students are afforded the opportunity to enhance their knowledge independently.

Access to these resources offers students more opportunity to collaborate with their fellow students in and around the world for knowledge sharing. Students can attain higher levels of thinking and preserve information for longer periods through collaborative learning than students working individually. OARs enables students to get speedy information on any of their subject of interest.

Kurelovic (2016) explains that the European Commission is of the view that access to OARs by students affords them the opportunity to study independently, be engaged in the learning process and also be able to use the resources to enhance their knowledge. This enhances the

students' knowledge as they may use information resources for their study anytime, anywhere and with any device.

Discussion of Findings

Awareness of OARs

71.5% of the students in this study indicated that they were aware of OARs and based on this high level of awareness of OARs by the respondents, it can be deduced that the use of OARs is encouraging as 69.4% indicated that they had used the resources. This corroborates with the findings of the study by Muthuvennila and Thanuskodi (2018) which indicates that most of the respondents use OARs. While examining the reason for using OA resources, it was discovered that the respondents obtained relevant information from OARs. This indicates that OARs provide useful information to the students at the least possible time. The students identified inadequate training of information professional on use OARs, unsuitable infrastructures and most of the OARs not containing information in their subject areas as the major challenges they encountered while accessing OARs.

Conclusion

This study on challenges and opportunities of access to and use of OARs found that most of the students from the universities studied used the resources daily to obtain relevant information, for research purposes, because they were easy to use and saved time. Therefore, it is necessary that university libraries make these resources available to users to enhance/improve their services and information provision, especially in this era of budgetary constraints. Awareness leads to increased use, and libraries must therefore incorporate awareness creation as one of their services to avoid underutilisation of the library resources. This could be done through seminars, orientations, etc. extant literature also revealed that people are more likely to use information resources when they have access to them or are given access to the resources.

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