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FREQUENCY OF THE USE OF OPEN EDUCATIONAL RESOURCES AND ITS IMPACT ON BASIC EDUCATION STUDENTS IN OYIGBO METROPOLIS, RIVERS STATE

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Abstract

This study seeks to identify the frequency of the use of Open Educational Resources OER and its impact on basic education students. Descriptive survey design was adopted and used in this study, about 851 Junior Secondary School 2 and 3 students from four public schools within Oyigbo metropolis formed the population. Judgmental and availability sampling was used to sample 210 students (119 male and 91 female) for the study. Self-designed questionnaire with liket scale was used to collect data. The questionnaire was titled Students' Open Educational Resources Frequency Inventory (SOERFI), the questionnaire was given facial validation by two experts of Measurement and Evaluation and Educational Technology from the Department of Educational Foundations, Rivers State University. The internal consistency was tested using correlational coefficient of [redacted]

Spearman rank order correlation coefficient and r= 0.67, this value determine the use of the instrument. The results showed that a larger number of students used OER once in a while. There was significant impact of OER on students' interest to use OER. Thus, the authors recommends that students of basic education should be engage in the use of OER through sensitization and workshop to enable them get much more involved in the use of OER.

Keywords: Open Educational Resources, Impact, use, Frequency

Introduction

Open Educational resources (OER) was basically introduced to compliment the already existing learning resources and to enhance absolute inclusiveness of the population in respect of education. It is an innovation in education that is aimed at enriching the fundamental potentials in teaching and learning curricula from

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kindergarten through post-graduate schools, OER have been spread widely and have garner acceptance by teachers, learners and policy makers over two decades in many countries of the world (McKerlich et al., 2013; Harvey,& Bond, 2022). It is observable that with increase in the use and involvement of technology in day to day activities the adoption and use of OER by teachers and students will be a phenomenon.

However, Open Educational Resources is not popular among basic education students in Nigeria. Because, most schools have not integrate technology in the teaching and daily running of the schools. But, in the United State Harvey et al., (2022) affirmed that "in the area of learning reading, for example, an Internet search for OER lessons for reading elementary school yielded over 17 million articles, books, or reports. Narrowing the search to fourth grade reduced that bulk to approximately 1.3 million items" (p.108). This is an indication of poor or inadequate provision of OER for learners at the lower level of learning. Where constructivist approach is much more required, Knox (2013) affirmed that the OER are "the building blocks of a constructivist-informed 'learning 2.0,' comprised of social learning, legitimate peripheral participation and learning through communities of practice" (p. 825). OER was made possible by the support of UNESCO through their different declarations that help lots of country buy in the project (Boonk, Lee, Reeves, & Reynolds, 2015).

Concept of Open Educational Resources (OER)

Open Educational Resources (OER) was defined by several authors, but the major standing points is that OER are resources which are developed and registered with creative commons license and others, that guarantee open access, remix, modification, use and redistribute without any cost implication. Cosan, (2021) sees OER as "intellectual property license that can be easily accessed, used and developed by open educational resources that support the progress in education for all and the processes of improving living conditions in developing countries" (p. 256). OER are designed to be reused, modified, combined and reproduced by the users as suitable for them. OER include full courses, course materials, modules, textbooks, streaming videos, tests, software, and other tools, materials. It also include techniques used to support access to knowledge (Fischer et al., 2015; William, Flora & Hewlett Foundation, 2013; Cumming-Clay, 2020). There are many learning materials and courses that can be grouped under digital open family, most of it are rooted in open software movement (Cosan, 2021; Mbaba, et al., 2022). These learning materials have help to promote the involvement of technology and internet in daily learning activities.

Most significantly, OER is visible and are being patronized in Africa. The only outstanding challenges is the lack of OER implementation policy framework in most Africa countries which Nigeria is involved (Trudel, et al.,2019). While rapid progress in practices related to use and creation of OER is evident in many developed countries, there has been slow progress in OER implementation in the developing world (Karunanayaka, & Naidu, 2017;

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Arunkumar et al., 2020). Yet, OER is most deserved in developing countries like Nigeria where there exist a wide gap in the production and supply of instructional materials and text books. If OER is made available then it will help to address the challenges of inadequate teaching and learning resources by making educational resources freely accessible and contributing to reduce cost of education in the continent (UNESCO, 2012).

Statement of the Problem

It is also sacrosanct to also mention, that away from the significant portrayed in the use of OER, there are lack of evidence to also support the presumed importance and whether teachers and students in such tools to support classroom. This point was echoed by Kabugo, (2020) stated "there is a rising interest in the integration of Open Education Resources (OER) into teaching to augment the provision of universal education at levels of education across the globe, there is still limited empirical evidence from countries of the Global South, to indicate how this sprouting educational practice is enhancing students' learning outcomes" (p. 448). As a result a number of research on the subject areas have emerged. Most importantly, in Nigeria OER is widely used in tertiary institutions and some high schools. But, it is yet to be find OER is welcomed in basic education in respect of interest among learners and teachers of that level. If it's welcomed what is the frequency of OER use among students and what impact in terms of support it provides. These issues triggered this study among basic education students.

Objective of the study

The study was guided by the following objectives;

1. Determine the frequency of OER usage among students in basic education
2. Determine the frequency of OER use based on gender
3. Determine the influence of OER on students' interest in OER use in Oyigbo metropolis, Rivers State

Research Questions

1. What is the frequency of OER usage among students in basic education?
2. What are the frequency of OER use based on gender?
3. What are the impact of OER on students' interest in OER use?

Methods

This study employed descriptive survey design, it was carried out in Oyigbo metropolis, Rivers State. The population of the study was made up of all junior secondary school students (JSS 2 and 3) in Oyigbo Metropolis. Judgmental and availability sampling were used to sample 210 students used in this study. Criteria for selection were students who have used OER before the study. 210 questionnaire were distributed to 210 students, this was possible because the questionnaires were administered by the researchers and

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retrieved immediately after students responded to it. The sample size of this study is 119 male and 91 female. The questionnaires was self-designed titled students' Open Educational Resources frequency inventory (SOERFI). The questionnaires was in two sections. Section one deals on frequency of use with 4point liket scale using daily=4, used 3-4 days weekly =3, 1-3 days weekly=2 and once in a while =1. Section two was on impact of OER, it has 5points liket scale with strongly agree=5, Agree=4, undecided=3, strongly Disagree =2 and disagree =1. SOERFI was given face validation by two experts each from Measurement and Evaluation and Educational Technology in Rivers State University.

Reliability of the Instrument

SOERFI was further administered to 20 students and Reliability test was carry out to ensure the consistency of the instrument, test retest method of reliability was used to measure stability of the instrument. The correlation coefficient of Spearman rank order correlation coefficient was used, the correlation coefficient value calculated provides the measure of stability generally known as stability coefficient. The value of r = 0.67 this value proved the stability coefficient and consistency. Percentage, charts, mean and standard deviation were used to answer research questions while one-sample and independent t-test was used to test hypotheses 1 and 2 respectively.

Results

Research Question 1:

What is the frequency of OER usage among students in basic education?

Table 1: **Frequency of OER Usage among students in Oyigbo Metropolis**

S/N	Duration	Number	Percentage
1.	Daily	24	11.43%
2.	3-4	40	19.05%
3.	1-3	70	33.33%
5	Once in a while	76	36.19%

Table 1 above presents the frequency of students' use of OER in Oyigbo metropolis, Rivers State. From the table above only 24 students (11.43%) engage or used OER daily 40 students (19.05%) use it 3-4 days weekly, 1-3 days weekly have 70 students (33.33%) and 76 (36.19%) which happened to be the highest participant only used it once in a while. From this data one can deduced that awareness on the use of OER is poor so most basic education students could not see or understand its relevance. The challenge is not limited to awareness but to development of OER and quality assurance. Thus much need to be done in the development of OER and ensuring it is adequate in terms of relevance. The above is presented in a line chart in figure 1.

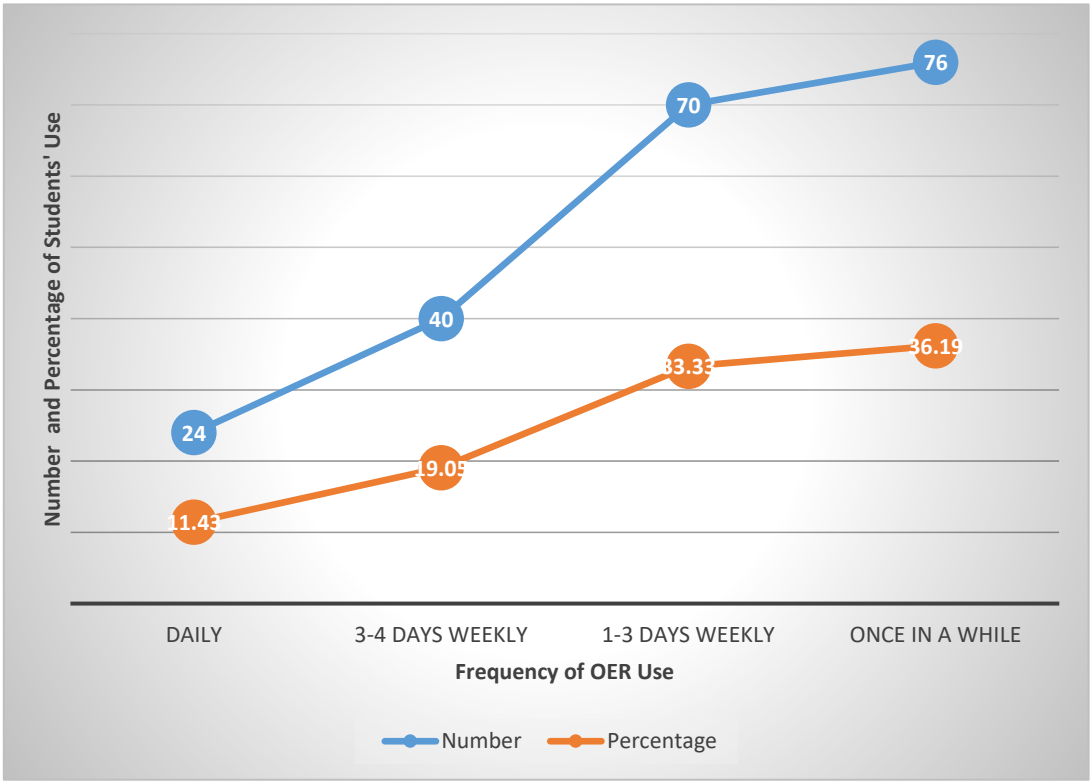

Fig. 1

Research Question 2:

What is the frequency of OER use based on gender?

Table 2 Students' Frequency of OER usage based on Gender

Duration	Gender	Number	Percentage %
Daily	Male	16	7.62
	Female	08	3.81
3-4 days weekly	Male	20	9.52
	Female	20	9.52
1-3 days weekly	Male	37	17.62
	Female	33	15.71
Once in a while	Male	45	21.43
	Female	31	14.76

Table 2 presents basic education students use of OER in Oyigbo metropolis, Rivers State. Based on the data provided above, daily usage of OER were 16 male students (7.62%), 3-4 days weekly male 20 (9.52%), 1-3 days weekly male 37 (17.62) and once in a while, male 45 (21.43%). On the other hand female were 08 (3.81%), 20 (9.52 %). 33 (15.71%) and 31 (14.76%) for daily usage, 3-4 days weekly, 1-3 days weekly and once in a while respectively. The data

showed that male students usage is more in all the items under considerations, thus one can deduce that male students' usage (56.19%) is more than female (43.8%). The above data is presented on char (Fg 2) below.

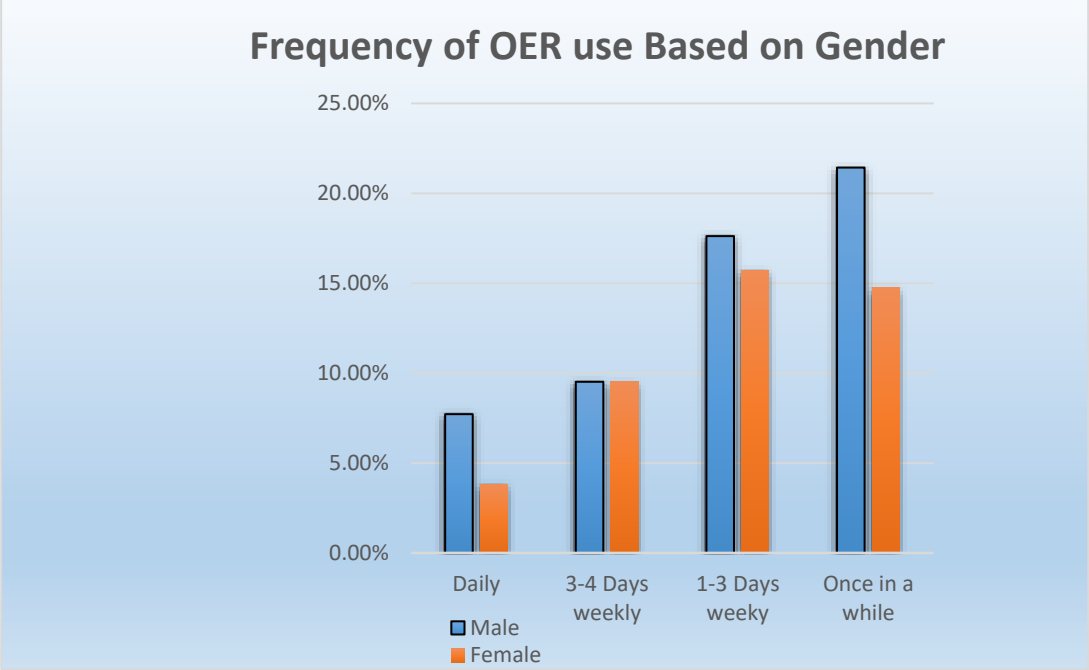

Fig. 2

Research Question 3:
What is the impact of OER on students' interest in OER use?

S/N	Item Statement	S. Ag	Ag	Ud	Dg	S. Dg	Mean (x)	SD
1.	OER is good for private study at home	33 (15.7%)	74 (35.2%)	27 (12.9%)	2 (1.9%)	74 (35.2%)	3.30	1.136
2.	OER supports and improve my study habit	7 (8.1%)	83 (39.5%)	11 (5.2%)	37 (17.6%)	62 (29.5%)	2.91	1.311
3.	I avoid lessons on OER	2 (1.0%)	54 (25.7%)	24 (11.4%)	36 (17.1%)	94 (44.8%)	2.49	1.082
4.	My drive for the lesson is most time low when there is no OER	-	91 (43.3%)	22 (10.5%)	5 (2.4%)	92 (43.8%)	2.95	.984
5.	I have curiosity for OER integration in school	29 (13.8%)	62 (29.5%)	56 (26.7%)	8 (3.8%)	55 (26.2%)	3.23	1.101

6.	I am usually uncomfortable with OER.	7 ((3.3%)	39 (18.6%)	23 (11.0%)	18 (8.6 %)	123 (586%)	2.50	.999
7.	I hate working with OER	-	56 (26.7%)	26 (12.4%)	35 (16.7%)	93 (44.3%)	2.43	2.9
8.	I don't like the use of OER instructional Resources in the classroom	-	36 (17.1%)	5 (2.4%)	84 (40.0%)	85 (40.5%)	1.97	1.055
9.	Learning with technology could be boring sometimes	-	78 (37.1%)	26 (12.4%)	40 (19.0%)	66 (31.4%)	2.68	1.162
10.	Learning craft through OER could be interesting and enjoyable	5 (2.4%)	68 (32.4%)	57 (27.1%)	17 (8.1%)	63 (30.0%)	2.91	1.020
11.	Learning through OER could be boring and not fascinating	-	49 (23.4%)	29 (13.8%)	24 (11.4%)	108 (51.4%)	2.49	.975
12.	I am inspired when I see OER modules	28 (13.3%)	79 (37.6%)	24 (11.4%)	21 (10.0%)	58 (27.6%)	3.17	1.251
13.	I get attention in creativity when I see OER videos	5 (2.4%)	82 (39.0%)	19 (9.0%)	15 (7.1%)	89 (42.4%)	2.87	1.088
14.	I love practicing and engaging in OER	32 (15.2%)	45 (21.4%)	27 (12.9%)	47 (22.4%)	59 (28.1%)	2.79	1.1402
15.	It's fascinating to work with OER contents	16 (7.6%)	90 (42.9%)	25 (11.9%)	15 (7.1%)	64 (30.5	3.13	1.146
	GT						**2.79**	

Table 3 presents the mean and standard deviation of the responses of students to the impact of OER on their interest in technology and use of OER. From the table more of the statements where on the negative and using the decision mean; OER is good for private study at home (*m*=3.30), students were inspired to use OER (*m*=3.17), it is fascinating to work with OER (*m*=3.13), have curiosity for technology integration in school because of OER (*m* =3.23) is above the decision mean (*m* =3.0). This indicates that students are much interested in the use of OER and technology integration in schools. On the other hand when compared with the other statement such as love practicing and engaging in OER (*m*= 2.79), drive for the lesson is most time low when there is no OER (m = 2.95) it is obvious that in spite of their interest, the competency required to repurpose, use and redistribute may likely affect their decision of loving or engaging in OER. Above all, Learning craft through OER could be interesting and enjoyable (*m* = 2.91) is also tasking and required higher competency in computer applications. These reasons may have influenced students' responses on the negative in some of the statements. However, It is clear the statements such as, usually uncomfortable with OER (m =2.50), avoid lessons on

OER (m =2.49), Learning through OER could be boring and not fascinating (m =2.49) have mean below the decision mean (m=3.00) meaning that, averagely OER is not boring nor uncomfortable to use to majority of the students. The implications of this data is that is that basic education can do well with the introduction of OER, especially when it is home grown which can reflect the local content of the learners at the basic level.

Hypotheses

HO_1: There is no significant impact of OER on students' interest in OER use in Oyigbo metropolis, Rivers Sate.

Table 4: Impact of OER on Basic Education Students' Interest in OER Integration

N	Mean x	SD	T	DF	Sig (2tailed)	Decision
210	1.25	.433	41.787	**209**	**.000**	**Rejected**

The results in table 4 showed a calculated t value (41.787) at df =209 and p value = .000. Since the p-value = .000 is less than 0.05 the null hypothesis was rejected and corresponding hypothesis was accepted. This means there was a significant impact of OER on basic education students in OER integration in Oyigbo metropolis, Rivers State.

H_{02}: There is no significant impact of OER on male and female students' interest on OER in the classroom.

Table 5: Impact of OER on Male and Female Students' Interest in OER Integration

Gender	N	X	SD	F	Sig	T	Df	Decision
Male	119	42.45	5.970	8.439	.004	1.765	208	Rejected
Female	91	41.10	4.759					

The results on table 5 above have calculate t value= 1.765, f =8.439 and df =208. The calculated p-value is .004, hence the p-values is less than 0.05 level of significance (P – Value =.004< 0.05), the hypothesis was rejected. This implies that there is a significant impact of OER on male and female students in favour of male in Oyigbo, River state.

Discussions

The study showed that those that used OER once in a while formed the majority. Those that use it daily were very few, but on a whole it was established that the use of OER spurs students' interest in basic schools. This findings is in agreement with several other studies (Harvey et al., 2022; UNESCO, 2016; Mckerlich et al., 2013). The most important and unique implications of this study is that OER is relevant at basic schools as the students have access to use it to support their private studies.

There are argument in different quarters as to the impact of OER at the basic education level vi sa vi its usage among teachers and students. In this study, the null hypothesis one, tested the significant impact of OER on students' interest in OER integration in Oyigbo metropolis, Rivers Sate, the results showed p-value = .000 is less than 0.05 level of significance, thus the hypothesis was rejected. Indicating that there is a significant impact of OER on students' interest in OER integration in Oyigbo metropolis, Rivers State. This finding is in conformity with the study of Wilson, (2008); Wiche and Ogunbode, (2021)

Nyamwemmbe et al., (2018) whose studies showed high and average usage of OER in South Africa, Ignatius Ajuru University of Education Port Harcourt and in private universities in Kenya respectively. The studies also indicate positive influence of OER on students, thereby recommending OER publicity and usage in schools.

Hypothesis two explains if there were significant impact of OER on students' interest based on gender. The result showed that there is significant impact of OER on male and female students in favour of male. The results was also is in agreement with Mbaba, et al., (2023) who study the impact of OER on teachers interest and revealed that the impact of OER was more on male than female. This imply that the use of OER is gender friendly hence the need to encourage its publicity and usage.

Conclusion

The use of OER is popular among students of tertiary institutions and secondary schools in Nigeria. Very little have been said about OER at the basic education as there were no national implementation policy framework to that effect. However, during covid-19 pandemic, several developers of OER for basic education emerged. Thereby producing lots of materials which were made available through open license. Though most of the OER were sponsored by state government and some NGOs. This study therefore, proved that students are interested in the use of OER as a stop gap for private study. The questions is, are there sufficient OER that is suitable for basic education? Because if there is provision and adequate awareness campaign, then its usage shall be positive.

Recommendations

From the findings of the study the following recommendations were forwarded that:

1. students of basic education should be engage in the use of OER through sensitization and workshop to enable them get much more involved in the use of OER;
2. revamping and reorganization of basic education classrooms with technology to enhance students' interest in OER is key for OER integration;
3. education managers may encourage the development of national implementation framework for OER and the development of OER in all subjects' areas to boost its usage in basic education.

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