Effect of Open Educational Resources on Teaching and Learning as Perceived by Lecturers in Selected Nigerian Universities

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ABSTRACT
This study examined the level of lecturers' awareness and the extent of usage of open educational resources (OERs) for teaching and learning in Nigerian universities. A descriptive research design was adopted for the study. Multi-stage sampling technique was used to select two (2) universities (both federal and state-owned) that are running open and distance learning programmes in each of the six (6) geographical zones of Nigeria; and to select a total of one thousand four hundred and eighty-five (1,485) respondents. To guide the study, three research questions were raised and three hypotheses were formulated and tested at 0.05 level of significance. The main structured research questionnaire used in the study was titled: "Lecturer's Use of OERs Questionnaire" (LUOER; r=0.78). Data obtained were analysed using descriptive statistics of mean, standard deviation and inferential statistics of ANOVA. The findings revealed that lecturers were aware ($\pi = 3.06; SD = 0.72$) and ready to use ($\pi = 2.80; SD = 0.80$) OERs for education with ranges of identified challenges. Findings also revealed significant institutional affiliation differences in the extent of lecturers' awareness ($F_{(11,1484)} = 61.71$; $p = 0.00 < 0.05$), readiness ($F_{(11,1484)} = 32.90$; $p = 0.00 < 0.05$) and perceived challenges ($F_{(11,1484)} = 12.12$; $p = 0.00 < 0.05$) towards the utilisation of OER for education. Implications to meeting the global challenges were discussed. It was recommended among others that the ministries of education should sponsor periodic workshops and seminars to sensitize lecturers more on the availability and utilization of OER facilities for teaching-learning process..
Keywords: Students, OERs, awareness, readiness, OERs utilisation

INTRODUCTION
The history of higher education is getting updated day in day out due to the introduction of various educational models and programmes that could make the recipients who must be able to compete favourably with others from different parts of the world. Like in every other country of the world, Nigeria had her shares of correspondence schooling experience; which offered all sorts of programmes including teacher education programmes and law, the conventional traditional schooling of face to face and also, the current open and distance mode of education brought about by the witnessed shift in paradigm. It is through this open and distance learning (ODL) mode of education that the introduction of various educational terms such as asynchronous and synchronous; faceless and blended among others came to be. We currently live in challenging times as we transit to a new knowledge-based society virtually every day; courtesy of information technology. Very many educational resources are now fully accessible through different media formats via information and communication technologies (ICT) in terms of Web tools and search engines. Among the consequent impact is the introduction of Open Educational Resources (OERs) which opens and freely gives access to various course contents in many educational programmes to educators as well as learners. This is another innovation in the act of teaching and learning.

Today, there is no need for teachers to start from the beginning to build all the necessary materials for their classes when OERs are properly being utilised. By using OER, lecturers can easily supplement their lectures and learning materials with content that is already openly licensed and available for sharing. By sharing their own work as OER, lecturers can maximize the impact and visibility of their scholarly work across the global learning community. Recently, there has been a fair amount of studies examining the adoption of OER materials on students' academic achievement. A good number of findings found no significant difference between OER and commercial texts when measuring student's performance and progression such as Allen, Gusman-Alvarez, Smith, Gamage, Molinaro & Larsen, (2015), Hilton, Gaudet, Clark, Robinson and Wiley (2013); and Hilton, (2016). While on the other hand, findings indicated an improvement in performance and retention using OERs such as Hilton and Laman (2012), Robinson, Fischer, Willey and Hilton (2014). Factors responsible for these include lack of awareness of the teachers that OERs can be used to identify gaps in learners' understanding of concepts, effectiveness of materials, development of materials, and potential administrative roadblocks (Kersey,

2019). Successful adoption of OERs in tertiary institutions seems to depend on awareness, readiness and proper usage by the lecturers. There is a need to examine the level of lecturers' awareness and the extent of usage of OERs for teaching and learning in Nigerian universities.

STATEMENT OF THE PROBLEM

The problem this study addressed is the examination of the level of lecturers awareness and the extent of use of OERs for teaching and learning in Nigerian universities. In doing so, the specific areas of focus are level of awareness, degree of utilisation and encumbrances in OERs accessibility.

OBJECTIVES OF THE STUDY

The general objectives of this study are to find out the level of awareness and extent of OERs usage and their roles among the lecturers in higher institutions in Nigeria. Specific objectives of the study include to:

(a) establish the level of awareness of lecturers use of OERs for education.
(b) ascertain the level of lecturers' readiness towards the utilisation of OERs in education.
(c) Find out the challenges of lecturers towards the utilisation of OER for teaching.

RESEARCH QUESTIONS

The following research questions guided this study:

(a) What is the level of lecturers' awareness of the use of OERs for education?
(b) What is the level of lecturers' readiness towards the utilisation of OERs in education?
(c) What are the lecturers' perceived challenges towards the utilisation of OERs for teaching?

HYPOTHESES

The following hypotheses were tested at 0.05 level of significance:

Ho_1: There is no significant institutional affiliation difference in the extent of lecturers' awareness of open educational resources for teaching.

Ho_2: There is no significant institutional affiliation difference in level of lecturers' readiness towards the utilisation of OERs for education.

Ho_3: There is no significant institutional affiliation difference in lecturers' perceived challenges towards the utilisation of OER for teaching.

METHODS AND PROCEDURES

A descriptive research design was adopted for the study to establish the level of lecturers' awareness, readiness, utilisation and challenges of using open education resources (OERs) for teaching and learning in Nigerian universities. The population of the study consisted of all lecturers of federal and state dual mode and single mode universities across the federation in Nigeria. Multi-stage sampling technique was used to select two (2) universities (both federal and state-owned) that are running open and distance learning programmes in each of the six (6) geographical zones of Nigeria; and to select a total of one thousand four hundred and eighty-five (1,485) lecturers. The sampled institutions are To guide the study, three research questions were raised and three hypotheses were formulated and tested at 0.05 level of significance.

The structured research questionnaire used in the study was named: Lecturers' Use of OERs Questionnaire (TUOERQ). The "TUOERQ" questionnaire was made up of two sections (A and B). Section A was made up of demographic variables of the respondents such as Institutional Affiliation, Faculty, Department, Years of Lecturing, Gender and Highest Qualification while Section B contains four different sub-sections with 55 questionnaire items/statements that relate to awareness, readiness, utilisation and challenges of the OERs for education. Each of the items has a four-point modified Likert scale range from 4– 1. The validity of the questionnaire was established by the experts in the areas of Open and Distance Learning and Tests and Measurement. The reliability of the instrument was ensured through test-retest reliability of two weeks interval after the first administration. The coefficient values is 0.82. The Lecturers' Use of OERs Questionnaire (TUOERQ) was administered to the sampled academic staff of the selected universities.

The teacher's questionnaire was administered on the lecturers during the time the Conference Marking Exercise of the National Open University of Nigeria was taking place at the designated marking zones across all the six (6) geographical zones of the federation. The collected data were analysed using descriptive statistics of mean and standard deviation for the research questions while inferential statistical tools of ANOVA was used to test the null hypotheses.

RESULTS

Research Question 1:

What is the level of lecturers' awareness of the use of OERs for Education?

Table 1: Descriptive Statistics of the level of Lecturers' awareness of the use of OERs for Education

		Freq.	%	Mean	Std. Dev.
OER means no need to ask for further permission to use the resources.	NA	97	6.50	2.89	0.76
	NFA	233	15.70		
	A	895	60.30		
	FA	260	17.50		
	Total	1485	100.00		
OER means the resources are openly licensed.	NA	85	5.70	2.95	0.76
	NFA	213	14.30		
	A	881	59.30		
	FA	306	20.60		
	Total	1485	100.00		
OER means the learning resources are freely available to be used by anyone.	NA	48	3.20	2.99	0.78
	NFA	315	21.20		
	A	731	49.20		
	FA	391	26.30		
	Total	1485	100.00		
OERs are digital and non-digital materials that can be re-used for teaching-learning and research.	NFA	307	20.70	3.06	0.68
	A	787	53.00		
	FA	391	26.30		
	Total	1485	100.00		
I am aware that OERs can be used to improve my learners' academic performance.	NFA	215	14.50	3.18	0.66
	A	793	53.40		
	FA	477	32.10		
	Total	1485	100.00		
I am aware that OERs can promote class discussion and improve learners' experiences and presentation skills.	NA	26	1.80	3.13	0.71
	NFA	214	14.40		
	A	783	52.70		
	FA	462	31.10		
	Total	1485	100.00		
I am aware that OERs can be used to enhance lecturers' and learners' interaction.	NFA	330	22.20	3.12	0.74
	A	652	43.90		
	FA	503	33.90		
	Total	1485	100.00		
I am aware that OERs can be used to create customised learners' learning materials and incorporate interactive elements such as audio, video and self-assessment into the learning material.	NA	25	1.70	3.12	0.67
	NFA	177	11.90		
	A	878	59.10		
	FA	405	27.30		
	Total	1485	100.00		
I am aware that OERs are used to find, remix and three collections of web resources to my learners.	NA	25	1.70	3.04	0.67
	NFA	228	15.40		
	A	900	60.60		
	FA	332	22.40		
	Total	1485	100.00		
I am aware that OERs can be sued to provide personalised learning to student based on their learning style.	NA	26	1.80	3.03	0.68
	NFA	239	16.10		
	A	876	59.00		
	FA	344	23.20		
	Total	1485	100.00		
I am aware that OERs can be used to present learning content visually to learners in different languages.	NA	62	4.20	3.00	0.77
	NFA	255	17.20		
	A	789	53.10		

	FA	379	25.50		
	Total	1485	100.00		
I am aware that OERs can be used to provide customised materials and personalised feedback to my learners.	NFA	343	23.10	2.99	0.67
	A	812	54.70		
	FA	330	22.20		
	Total	1485	100.00		
I am aware that OERs can be used to enhance collaborative learning, gauge my learners' understanding of a topic or concept.	NA	26	1.80	3.18	0.69
	NFA	169	11.40		
	A	803	54.10		
	FA	487	32.80		
	Total	1485	100.00		
I am aware that OERs can be used to identify gaps in my learners' understanding of a concept.	NA	51	3.40	3.10	0.77
	NFA	224	15.10		
	A	735	49.50		
	FA	475	32.00		
	Total	1485	100.00		
GRAND MEAN and STANDARD DEVIATION				3.06	0.72

From Table 2, 97 (6.50%) of the lecturers were not aware that OERs mean no need to ask for further permission to use the resources, 233 (15.70%) were not fully aware that OERs mean no need to ask for further permission to use the resources, 897 (60.30%) were aware that OERs means no need to ask for further permission to use the resources while the remaining 260 (17.50%) of the lecturers were fully aware that OERs mean no need to ask for further permission to use the resources.

Among the respondents, 85 (5.70%) of the lecturers were not aware that OERs mean the resources is openly licensed, 213 (14.30%) were not fully aware that OERs mean the resources are openly licensed, 881 (59.30%) were aware that OERs mean the resources is openly licensed while the remaining 306 (20.60%) of the lecturers were fully aware that OER means the resources is openly licensed.

A small proportion of 48 (3.20%) of the lecturers were not aware that OERs mean the learning resources are freely available to be used by anyone, 315 (21.20%) were not fully aware that OERs mean the learning resources is freely available to be used by anyone, 731 (49.20%) were aware that OERs mean the learning resources is freely available to be used by anyone while the remaining 391 (26.30%) of the lecturers were fully aware that OERs mean the learning resources is freely available to be used by anyone.

Also, 307 (20.70%) were not fully aware that OERs are digital and non-digital materials that can be re-used for teaching-learning and research, 731 (49.20%) were aware that OERs are digital and non-digital materials that can be re-used for teaching-learning and research while the remaining 391 (26.30%) of the lecturers were fully aware that OERs are digital and non-digital materials that can be re-used for teaching-learning and research.

Again, 215 (14.5%) were not fully aware that OERs can be used to improve learners' academic performance, 793 (53.40%) were aware that OERs can be used to improve learners' academic performance while the remaining 477 (32.10%) of the lecturers were fully aware that OERs can be used to improve my learners' academic performance. The Table further reveal that 26 (1.80%) of the lecturers were not aware that OERs can promote class discussion and improve learners' experiences and presentation skills; 214 (14.40%) were not fully aware that OERs can promote class discussion and improve learners' experiences and presentation skills, 783 (52.70%) were aware that OERs can promote class discussion and improve learners' experiences and presentation skills while the remaining 462 (31.10%) of the lecturers were fully aware that OERs can promote class discussion and improve learners' experiences and presentation skills.

In all, 330 (22.20%) of the lecturers were not fully aware that OERs can be used to enhance lecturers' and learners' interaction, 652 (43.90%) were aware that OERs can be used to enhance lecturers' and learners' interaction while the remaining 503 (33.90%) of the lecturers were fully aware that OERs can be used to enhance lecturers' and learners' interaction of all the participating lecturers. Yet, 25 (1.70%) of the them were not aware that OERs can be used to create customised learners' learning materials and incorporate interactive elements such as audio, video and self-assessment into the learning material, 177 (11.90%) were not fully aware that OERs can be used to create customised learners' learning materials and incorporate interactive elements such as audio, video and self-assessment into the learning material, 878 (59.10%) were aware that OERs can be used to create customised learners' learning materials and incorporate interactive elements such as audio, video and self-

assessment into the learning material while the remaining 405 (27.30%) of the lecturers were fully aware that OERs can be used to create customised learners' learning materials and incorporate interactive elements such as audio, video and self-assessment into the learning material.

Just 25 (1.70%) of the them were not aware that OERs are used to find, remix and three collections of web resources to my learners, 228 (15.40%) were not fully aware that OERs are used to find, remix and three collections of web resources to my learners, 900 (60.60%) were aware that OERs are used to find, remix and three collections of web resources to my learners while the remaining 332 (22.40%) of the lecturers were fully aware that OERs are used to find, remix and three collections of web resources to my learners.

A small proportion, 239 (16.10%) were not fully aware that OERs can be used to provide personalised learning to student based on their learning style, 876 (59.00%) were aware that OERs can be sued to provide personalised learning to student based on their learning style while the remaining 344 (23.20%) of the lecturers were fully aware that OERs can be used to provide personalised learning to student based on their learning style. Also, 62 (4.20%) of the lecturers were not aware that OERs can be used to present learning content visually to learners in different languages, 255 (17.20%) were not fully aware that OERs can be used to present learning content visually to learners in different languages, 789 (53.10%) were aware that OERs can be used to present learning content visually to learners in different languages while the remaining 378 (25.50%) of the lecturers were fully aware that OERs can be used to present learning content visually to learners in different languages.

Also, 343 (23.10%) were not fully aware that OERs can be used to provide customised materials and personalised feedback to their learners, 812 (54.70%) were aware that OERs can be used to provide customised materials and personalised feedback to their learners while the remaining 330 (22.20%) of the lecturers were fully aware that OERs can be used to provide customised materials and personalised feedback to their learners.
Only 26 (1.80%) of the lecturers were not aware that OERs can be used to enhance collaborative learning, gauge my learners' understanding of a topic or concept, 169 (11.40%) were not fully aware that OERs can be used to enhance collaborative learning, gauge their learners' understanding of a topic or concept, 803 (54.10%) were aware that OERs can be used to enhance collaborative learning, gauge my learners' understanding of a topic or concept while the remaining 487 (32.80%) of the lecturers were fully aware that OERs can be used to enhance collaborative learning, gauge my learners' understanding of a topic or concept.

Just, 51 (3.40%) of the lecturers were not aware that OERs can be used to identify gaps in their learners' understanding of a concept, 224 (15.10%) were not fully aware that OERs academy can be used to identify gaps in their learners' understanding of a concept, 735 (49.50%) were aware that OERs academy can be used to identify gaps in their learners' understanding of a concept while the remaining 475 (32.00%) of the lecturers were fully aware that OERs academy can be used to identify gaps in my learners' understanding of a concept. Averagely, Lecturers were aware (Grand mean = 3.06) of the proper use of OERs for Education.

Research Question 2:
What is the level of Lecturers' Readiness towards the Utilisation of OERs in Education?

Table 2: Descriptive Statistics of the level of Lecturers' Readiness towards the Utilisation of OERs in Education

		Freq.	%	Mean	Std. Dev.
I will encourage my learners to use OERs to connect with their peers to address subject specific questions and answers which are verified by over a thousand moderators who recommend a peer that can offer hints to get the correct answer	NFR	140	9.40	3.25	0.61
	R	835	56.20		
	FR	510	34.30		
	Total	1485	100.00		
I am ready to use OERs such as smart board to promote class discussions and improve learners' experiences and presentation skills	NR	12	.80	3.21	0.64
	NFR	140	9.40		
	R	856	57.60		
	FR	477	32.10		
	Total	1485	100.00		
I am prepared to use OERs learning platforms such as Google classroom to enhance lectures' and learners' interaction	NR	12	.80	3.21	0.67
	NFR	179	12.10		
	R	780	52.50		
	FR	514	34.60		
	Total	1485	100.00		
I would like to use OERs learning platform like Netex learning to create customised learners' learning materials and incorporate	NR	12	0.80	3.03	0.69
	NFR	301	20.30		

interactive elements such as audio, video and self-assessment into the learning material	R	804	54.10		
	FR	368	24.80		
	Total	1485	100.00		
I am ready to use OERs such as gooru and learning platform to find, remix and share collections of web resources to my learners	NR	25	1.70	3.04	0.68
	NFR	238	16.00		
	R	880	59.30		
	FR	342	23.00		
	Total	1485	100.00		
I use OER robots to provide customised answers in response to learners' messages, grade their performance, and provide tips on what area learners need to improve	NU	295	19.90	2.41	0.94
	RU	477	32.10		
	U	527	35.50		
	OU	186	12.50		
	Total	1485	100.00		
Am prepared to use OER automated facial recognition like biometric face scanning surveillance to automate attendance roll marking in class and during examination	NU	415	27.90	2.16	0.91
	RU	519	34.90		
	U	450	30.30		
	OU	101	6.80		
	Total	1485	100.00		
I use OER software such as Turnitin to assess, provide feedback to learners and ascertain their level of plagiarism	NU	256	17.20	2.55	0.97
	RU	418	28.10		
	U	549	37.00		
	OU	262	17.60		
	Total	1485	100.00		
I use OER powered cameras to track student's movements and monitor learners' facial expressions, enhance automating examination supervision	NU	391	26.30	2.21	0.94
	RU	533	35.90		
	U	424	28.60		
	OU	137	9.20		
	Total	1485	100.00		
I use OER Write To Learn to evaluate the meaning, relevance of text and correctness of grammar and spellings of my learners' writing	NU	245	16.50	2.41	0.87
	RU	518	34.90		
	U	585	39.40		
	OU	137	9.20		
	Total	1485	100.00		
I use intelligent software such as Statistical Package for Social Science (SPSS) for immediate manipulation and computation of statistical and mathematical calculations	NU	61	4.10	3.13	0.81
	RU	227	15.30		
	U	659	44.40		
	OU	538	36.20		
	Total	1485	100.00		
I use Google scholar to quickly see the main journals, disciplines and authors that publish in my area of interest	NU	37	2.50	3.22	0.78
	RU	216	14.50		
	U	609	41.00		
	OU	623	42.00		
	Total	1485	100.000		
I use Grammarly Premium to automate proofreading, identify and correct errors in my writing while preventing plagiarism	NU	109	7.30	2.70	0.81
	RU	448	30.20		
	U	706	47.50		
	OU	222	14.90		
	Total	1485	100.00		
I use cited references search in Web of Science to monitor current development and track prior research in over 100 years' record and back files	NU	73	4.90	2.86	0.79
	RU	364	24.50		
	U	753	50.70		
	OU	295	19.90		
	Total	1485	100.00		
I use Scopus, a source neutral abstract and citation database, to generate precise citation search results and automatically create and	NU	110	7.40	2.62	0.84
	RU	593	39.90		

update my research profile	U	538	36.20		
	OU	244	16.40		
	Total	1485	100.00		
GRAND MEAN and STANDARD DEVIATION				2.80	0.80

From Table 2, 140 (9.40%) of the lecturers were not fully ready to encourage their learners to use OERs to connect with their peers to address subject specific questions and answers which are verified by over a thousand moderators who recommend a peer that can offer hints to get the correct answer, 835 (56.20%) were ready to encourage their learners to use OERs to connect with their peers to address subject specific questions and answers which are verified by over a thousand moderators who recommend a peer that can offer hints to get the correct answer to encourage their learners to use OERs to connect with their peers to address subject specific questions and answers which are verified by over a thousand moderators who recommend a peer that can offer hints to get the correct answer while the remaining 510 (34.30%) of the lecturers were fully ready to encourage their learners to use OERs to connect with their peers to address subject specific questions and answers which are verified by over a thousand moderators who recommend a peer that can offer hints to get the correct answer.
Just 12 (0.80%) of the lecturers were not full ready to use OERs such as smart board to promote class discussions and improve learners' experiences and presentation skills, 140 (9.40%) were not fully ready to use OERs such as smart board to promote class discussions and improve learners' experiences and presentation skills, 856 (57.60%) were ready to use OERs such as smart board to promote class discussions and improve learners' experiences and presentation skills while the remaining 477 (32.10%) of the lecturers were fully ready to use OERs such as smart board to promote class discussions and improve learners' experiences and presentation skills.

Also, 12 (0.80%) of the lecturers were not full ready to use OERs learning platforms such as Google classroom to enhance lectures' and learners' interaction, 301 (20.30%) were not fully ready to prepare to use OERs learning platforms such as Google classroom to enhance lectures' and learners' interaction, 804 (54.10%) were ready to use OERs learning platforms such as Google classroom to enhance lectures' and learners' interaction while the remaining 368 (24.80%) of the lecturers were fully ready to use OERs learning platforms such as Google classroom to enhance lecturers' and learners' interaction.

Only 12 (0.80%) of the lecturers were not full ready to use OERs learning platform like Netex learning to create customised learners' learning materials and incorporate interactive elements such as audio, video and self-assessment into the learning material, 301 (20.30%) were not fully ready to use OERs learning platform like Netex learning to create customised learners' learning materials and incorporate interactive elements such as audio, video and self-assessment into the learning material, 804 (54.10%) were ready to use OERs learning platform like Netex learning to create customised learners' learning materials and incorporate interactive elements such as audio, video and self-assessment into the learning material while the remaining 368 (24.80%) of the lecturers were fully ready to like to use OERs learning platform like Netex learning to create customised learners' learning materials and incorporate interactive elements such as audio, video and self-assessment into the learning material.

Again, 25 (1.70%) of the lecturers were not full ready to use OERs such as gooru and learning platform to find, remix and share collections of web resources to my learners, 238 (16.00%) were not fully ready to use OERs such as gooru and learning platform to find, remix and share collections of web resources to my learners, 880 (59.30%) were ready to use OERs such as gooru and learning platform to find, remix and share collections of web resources to by their learners while the remaining 342 (23.00%) of the lecturers were fully ready to use OERs such as gooru and learning platform to find, remix and share collections of web resources to their learners.
Also, 295 (19.90%) of the lecturers never used OER robots to provide customised answers in response to learners' messages, grade their performance, and provide tips on what area learners need to improve, 477 (32.10%) rarely used OER robots to provide customised answers in response to learners' messages, grade their performance, and provide tips on what area learners need to improve, 527 (35.50%) used OER robots to provide customised answers in response to learners' messages, grade their performance, and provide tips on what area learners need to improve while the remaining 186 (12.50%) often used OER robots to provide customised answers in response to learners' messages, grade their performance, and provide tips on what area learners need to improve.

Again, 415 (27.90%) of the lecturers never used OER automated facial recognition like biometric face scanning surveillance to automate attendance roll marking in class and during examination, 519 (34.90%) rarely used OER automated facial recognition like biometric face scanning surveillance to automate attendance roll marking in class and during examination, Among the participants,450 (30.30%) used OER automated facial recognition like

biometric face scanning surveillance to automate attendance roll marking in class and during examination while the remaining 101 (6.80%) often used OER automated facial recognition like biometric face scanning surveillance to automate attendance roll marking in class and during examination.

Only 256 (17.20%) of the lecturers never used OER software such as Turnitin to assess, provide feedback to learners and ascertain their level of plagiarism, 418 (28.10%) rarely used OER software such as Turnitin to assess, provide feedback to learners and ascertain their level of plagiarism, 549 (37.00%) used OER software such as Turnitin to assess, provide feedback to learners and ascertain their level of plagiarism while the remaining 262 (17.60%) often used OER software such as Turnitin to assess, provide feedback to learners and ascertain their level of plagiarism.

Also from the table 2, 391 (26.30%) of the lecturers never used OER powered cameras to track student's movements and monitor learners' facial expressions, enhance automating examination supervision, 533 (35.90%) rarely used OER powered cameras to track student's movements and monitor learners' facial expressions, enhance automating examination supervision, 424 (28.60%) used OER powered cameras to track student's movements and monitor learners' facial expressions, enhance automating examination supervision while the remaining 137 (9.20%) often used OER powered cameras to track student's movements and monitor learners' facial expressions, enhance automating examination supervision.

A small fraction, 245 (16.50%) of the lecturers never used OER Write To Learn to evaluate the meaning, relevance of text and correctness of grammar and spellings of their learners' writing, 518 (34.90%) rarely used OER Write To Learn to evaluate the meaning, relevance of text and correctness of grammar and spellings of their learners' writing, 585 (39.40%) used OER Write To Learn to evaluate the meaning, relevance of text and correctness of grammar and spellings of my learners' writing while the remaining 137 (9.20%) often used OER Write To Learn to evaluate the meaning, relevance of text and correctness of grammar and spellings of their learners' writing.

Just 61 (4.10%) of the lecturers never used intelligent software such as Statistical Package for Social Science (SPSS) for immediate manipulation and computation of statistical and mathematical calculations, 227 (15.30%) rarely used intelligent software such as Statistical Package for Social Science (SPSS) for immediate manipulation and computation of statistical and mathematical calculations, 659 (44.40%) used intelligent software such as Statistical Package for Social Science (SPSS) for immediate manipulation and computation of statistical and mathematical calculations while the remaining 538 (36.20%) often used intelligent software such as Statistical Package for Social Science (SPSS) for immediate manipulation and computation of statistical and mathematical calculations.

Only 37 (2.50%) of the lecturers never used Google scholar to quickly see the main journals, disciplines and authors that publish in my area of interest, 216 (14.50%) rarely used Google scholar to quickly see the main journals, disciplines and authors that publish in their area of interest, 609 (41.00%) used Google scholar to quickly see the main journals, disciplines and authors that publish in my area of interest while the remaining 623 (42.00%) often used Google scholar to quickly see the main journals, disciplines and authors that publish in their areas of interest.

With this, 109 (7.30%) of the lecturers never used Grammarly Premium to automate proofreading, identify and correct errors in my writing while preventing plagiarism, 448 (30.20%) rarely used Grammarly Premium to automate proofreading, identify and correct errors in their writing while preventing plagiarism, 706 (47.50%) used Grammarly Premium to automate proofreading, identify and correct errors in their writing while preventing plagiarism while the remaining 222 (14.90%) often used Grammarly Premium to automate proofreading, identify and correct errors in my writing while preventing plagiarism.

Also, 73 (4.90%) of the lecturers never used cited references search in Web of Science to monitor current development and track prior research in over 100 years' record and back files, 364 (24.50%) rarely used cited references search in Web of Science to monitor current development and track prior research in over 100 years' record and back files, 753 (50.70%) used cited references search in Web of Science to monitor current development and track prior research in over 100 years' record and back files while the remaining 295 (19.90%) often used cited references search in Web of Science to monitor current development and track prior research in over 100 years' record and back files.

On this, 110 (7.40%) of the lecturers never used Scopus, a source neutral abstract and citation database, to generate precise citation search results and automatically create and update their research profiles, 593 (39.90%)

rarely used Scopus, a source neutral abstract and citation database, to generate precise citation search results and automatically create and update their research profile, 538 (36.20%) used Scopus, a source neutral abstract and citation database, to generate precise citation search results and automatically create and update their research profiles while the remaining 244 (16.40%) often used Scopus, a source neutral abstract and citation database, to generate precise citation search results and automatically create and update their research profiles.
Averagely, Lecturers were ready and used (Grand mean = 2.80) OERs in Education.

Research Question Three:
What are the lecturers' perceived challenges towards the utilisation of OERs for teaching?

Table 3: Descriptive Statistics of Lecturers' Perceived challenges towards the Utilisation of OER for Teaching

		Freq.	%	Mean	Std. Dev.
My university is a contributor to OER's repositories	SD	84	5.70	2.73	0.79
	D	459	30.90		
	A	710	47.80		
	SA	232	15.60		
	Total	1485	100.00		
My university encourages both staff and learners to use OERs	SD	36	2.40	2.94	0.69
	D	287	19.30		
	A	891	60.00		
	SA	271	18.20		
	Total	1485	100.00		
My university sponsors academic staff to national / international conferences / workshops on OERs / professional development trainings	SD	109	7.30	2.80	0.82
	D	353	23.80		
	A	755	50.80		
	SA	268	18.00		
	Total	1485	100.00		
I have benefited from my university sponsorship to OERs conferences/training workshops	SD	266	17.90	2.33	0.88
	D	608	40.90		
	A	462	31.10		
	SA	149	10.00		
	Total	1485	100.00		
My university has provided for official permanent unit, equipped with human and material resources on OERs matters	SD	170	11.40	2.54	0.89
	D	582	39.20		
	A	500	33.70		
	SA	233	15.70		
	Total	1485	100.00		
GRAND MEAN and STANDARD DEVIATION				2.67	0.81

From Table 3, it could be deduced that larger number of lecturers 942 (63.40%) with mean and standard deviation of 2.73 and 0.79 respectively agreed to the fact that their universities were contributors to OER's repositories, 1162 (78.20%) with mean and standard deviation of 2.94 and 0.69 respectively agreed to the fact that their universities encouraged both staff and learners to use OERs, 1023 (68.80%) with mean and standard deviation of 2.80 and 0.82 respectively agreed to the fact that their universities sponsored academic staff to national / international conferences / workshops on OERs / professional development trainings, 874 (58.80%) with mean and standard deviation of 2.33 and 0.88 respectively disagreed to the fact that they have benefited from their university sponsorship to OERs conferences/training workshops while 752 (50.60%) with mean and standard deviation of 2.54 and 0.89 respectively disagreed to the fact that their universities had provided for official permanent unit, equipped with human and material resources on OERs matters.

Testing of the Hypotheses
The following null hypotheses were formulated and tested at 0.05 level of significance.
Ho_1: There is no significant institutional affiliation difference in the extent of lecturers' awareness of open educational resources for teaching.
Ho_2: There is no significant institutional affiliation difference in level of lecturers' readiness towards the utilisation of OERs for education.

H_{O3}: There is no significant institutional affiliation difference in lecturers' perceived challenges towards the utilisation of OERs for teaching.

Table 4: Descriptive Statistics of Lecturers' Variables

		N	Mean	Std. Dev.	Std. Err.
Lecturers' Awareness of OERs	SW FEDERAL	125	30.46	5.57	0.50
	SW STATE	125	27.14	3.30	0.30
	SE FEDERAL	123	32.07	2.60	0.23
	SE STATE	121	32.37	4.09	0.37
	SS FEDERAL	126	29.97	4.11	0.37
	SS STATE	121	33.38	2.62	0.24
	NW FEDERAL	123	32.84	3.63	0.33
	NW STATE	121	33.37	2.71	0.25
	NE FEDERAL	130	26.60	5.59	0.49
	NE STATE	130	27.50	2.99	0.26
	NC FEDERAL	120	34.80	3.99	0.36
	NC STATE	120	30.90	3.16	0.29
	Total	1485	30.89	4.62	0.12
Lecturers' readiness towards utilization of OERs for Education	SW FEDERAL	125	13.30	3.29	0.29
	SW STATE	125	12.30	2.27	0.20
	SE FEDERAL	123	12.88	3.57	0.32
	SE STATE	121	14.14	3.88	0.35
	SS FEDERAL	126	12.84	2.49	0.22
	SS STATE	121	12.36	3.93	0.36
	NW FEDERAL	123	14.52	3.04	0.27
	NW STATE	121	14.29	2.10	0.19
	NE FEDERAL	130	13.20	3.70	0.32
	NE STATE	130	14.00	1.68	0.15
	NC FEDERAL	120	15.10	2.22	0.20
	NC STATE	120	13.00	3.11	0.28
	Total	1485	13.49	3.13	0.08
Lecturers' Challenges towards Utilization of OERs for Education	SW FEDERAL	125	12.23	1.65	0.15
	SW STATE	125	12.73	1.98	0.18
	SE FEDERAL	123	13.45	3.41	0.31
	SE STATE	121	13.64	4.63	0.42
	SS FEDERAL	126	12.70	2.50	0.22
	SS STATE	121	13.07	2.32	0.21
	NW FEDERAL	123	15.59	2.54	0.23
	NW STATE	121	12.92	2.31	0.21
	NE FEDERAL	130	13.20	1.95	0.17
	NE STATE	130	13.40	2.12	0.19
	NC FEDERAL	120	13.20	3.32	0.30
	NC STATE	120	14.00	2.42	0.22
	Total	1485	13.34	2.81	0.07

Table 5: ANOVA of Lecturers' Variables on Institutional Affiliation.

		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Lecturers' Awareness of OERs	Between Groups	10007.95	11	909.81	61.71	0.00
	Within Groups	21718.27	1473	14.74		
	Total	31726.22	1484			
Lecturers' Readiness towards Utilization of OERs for Education	Between Groups	1675.33	11	152.30	32.90	0.00
	Within Groups	6818.14	1473	4.63		
	Total	8493.46	1484			
Lecturers' Challenges towards Utilization of OERs for Education	Between Groups	972.70	11	88.43	12.12	0.00
	Within Groups	10746.25	1473	7.30		

	Total	11718.95	1484		

Results in Tables 4 and 5 show that there were statistically significant institutional affiliation differences in the extent of lecturers' awareness of open educational resources for education ($f_{(11,1484)} = 61.71$; $p = 0.00 < 0.05$); level of lecturers' readiness towards the utilisation of OERs for education ($f_{(11,1484)} = 32.90$; $p = 0.00 < 0.05$) and lecturers' perceived challenges towards the utilisation of OERs for education ($f_{(11,1484)} = 12.12$; $p = 0.00 < 0.05$) based on institutional affiliation. The mean and standard deviation values also showed statistically significant differences in lecturers' institutional affiliation on the extent of lecturers' awareness of open educational resources for education, level of lecturers' readiness towards the utilisation of OERs for education and lecturers' perceived challenges towards the utilisation of OERs for education. therefore, we do not accept the null hypotheses that say that there is no significant institutional affiliation difference in extent of lecturers' awareness of open educational resources for education; there is no significant institutional affiliation difference in level of lecturers' readiness towards the utilisation of OERs for education and there is no significant institutional affiliation difference in lecturers' perceived challenges towards the utilisation of OERs for education. To determine the actual sources of significant differences observed in table 5, Scheffe post hoc test was employed.

DISCUSSION

The findings on the awareness of the OERs by the lecturers revealed that lecturers were aware of the proper use of OERs for education. They acknowledged the existence of OERs in their institutions as digital and non-digital resources that can be used to promote class discussion, enhance lecturers' and learners' interaction and improve learners' academic performance. This positive report is an important indicator to OERs utilisation. These findings were not in agreement with the earlier findings of Gunness (2011) who reported that the staff at the De Montfort University's Faculty of Health Sciences demonstrated a lack of familiarity with OERs. They only acknowledged the existence of open content repositories in their institutions but did not seem to be familiar with anything that was beyond the university (Farrow et al., 2015). The findings were supported by Jhangiani, and Jhangiani (2017) who examined awareness, usage, outcome, and perceptions of OERs among British Columbia post-secondary faculty and found that 78 (i.e. 77%) respondents had used OERs.

The findings on the level of lecturers' readiness towards the utilization of OERs in education indicated that lecturers were ready and used OERs in education. This was evident amongst the lecturers with the responses that they were ready to use OERs learning platforms like Netex to create customized learners' learning materials and incorporate interactive elements such as audio, video and self-assessment into the learning material. This finding is in agreement with the finding of Rolfe's (2012) who indicated that borrowing and sharing resources with one another were a common practice while obtaining materials from the internet was a normal phenomenon. The findings also confirmed with the submission of Afolabi, Adeyanju, and Adedapo (2010) in a study on media utilisation where lecturers expressed their views that they were happy to share resources freely available to other educators to use as they see fit. The findings of the study contradicted the position of Kanwar (2013) who highlighted the results of a key survey on the use of OERs in 13 Asian countries which indicated that lecturers lacked the capacity and time to locate, adapt and re-purpose OER materials that were relevant to them.

The findings on perceived challenges towards the utilization of OERs for teaching revealed that lecturers perceived their universities as being contributors to OER's repositories towards the utilisation of OER for teaching. Nonetheless, the lecturers indicated that their universities encouraged both staff and learners to use OERs, and sponsored academic staff to national/international conferences/workshops on OERs/professional development training. This implied that the level of lecturers' preparedness in tackling challenges towards the utilization of OERs for teaching is appreciable. These findings were not in agreement with the findings of Cox (2013) while revealing a key barrier to openness in the educational institutions that academics presented a certain amount of resistance in making educational content openly available as they observed very little value in sharing or contributing resources. Also, the finding of Oplatka (2007) revealed that for lecturers to become facilitators between new educational technologies, learning avenues such as OERs and student learning, developing countries need to address some fundamental problems: the poor qualifications of lecturers that affect teaching innovation and quality.

The first hypothesis examined if there is a significant institutional affiliation difference in the extent of lecturers' awareness of OERs for teaching. The finding showed that there were statistically significant institutional affiliation differences in extent of lecturers' awareness of OERs for education ($F_{(11,1484)} = 61.71$; $p = 0.00 < 0.05$). The mean and standard deviation values also showed statistically significant differences in lecturers' institutional affiliation in the extent of lecturers' awareness of OERs for education, Based on this, the null hypothesis was not accepted as it was shown that there was statistically significant difference in the extent lecturers' institutional affiliation influenced awareness of OERs usage for education. This finding is in agreement with the earlier

finding of Hassall & Lewis (2017), who conducted an online survey in 2016 of 209 academics involved in teaching anatomy and medicine in colleges and universities and reported that few academics indicated using OERs with minimal awareness that is relevant to key issues that prevent educators from blocking OERs in their teaching, while other academics exhibited a slight dispersion of the usage of OERs with inherent incentive barrier to adoption.

The second hypothesis examined if there is no significant institutional affiliation difference in the level of lecturers' readiness towards the utilisation of OERs for education. The finding revealed statistically significant institutional affiliation differences in the level of lecturers' readiness towards the utilisation of OERs for education ($F_{(11,1484)} = 32.90$; $p = 0.00 < 0.05$). The mean and standard deviation values also showed statistically significant differences in lecturers' institutional affiliation on the level of lecturers' readiness toward the Utilisation of OERs for Education. Therefore, we do not accept the null hypothesis that says that there is no significant institutional affiliation difference in the level of lecturers' readiness towards the utilisation of OERs for education. This implied that the findings indicate that the majority of institutions and lecturers who have used OERs had a positive experience and would do so again. The finding of this study corroborated Falode, Ilufoye, Awoyemi, and Usman (2018) who investigated lecturers' awareness and readiness toward the adoption of open educational resources for teaching in tertiary institutions in Niger State, Nigeria found that lecturers have a high awareness of OERs with a grand mean score above average and with the high grand mean score of readiness to adopt OERs in teaching.

The third research hypothesis examined if there is a significant institutional affiliation difference in lecturers' perceived challenges towards the utilisation of OERs for teaching. The finding revealed statistically significant institutional affiliation differences in lecturers' perceived challenges towards the utilisation of OER for education ($F_{(11,1484)} = 12.12$; $p = 0.00 < 0.05$) based on institutional affiliation. The mean and standard deviation values also showed statistically institutional affiliation significant differences in lecturers' perceived challenges towards the utilisation of OER for education. Therefore, the null hypothesis was rejected. This finding is in line with the earlier finding of Mtebe and Raisamo (2014), who examined barriers to OERs use in 11 Higher Education Institutions (HEI) in Tanzania. In their study, experiential data were generated through semi-structured interviews with random samples of 92 lecturers and a review of important documents. Many higher education institutions also spend huge sum of finances to maintain various ICTs on their premises given these efforts to the use of OERs.

CONCLUSION AND RECOMMENDATIONS

This research has aimed to contribute to our understanding of how university lecturers perceived and utilized the available OERs as only this could justify the resources expended on their acquisition. There were basis to conclude that several and varied factors abound testifying to it that lecturers in Nigerian universities are at various degrees of awareness level, utilisation, and readiness to adopt OERs. The level of lecturers readiness for, and awareness of OERs is very highly encouraging and could be further improved upon by attending to a few prevailing challenges.

In line with the findings of the study, the following are the recommendations:

(i) The ministries of education should sponsor periodic workshops and seminars to sensitize lecturers more on the availability and utilization of OER facilities for teaching-learning process.

(ii) The National Universities Commission may need to include availability, feasibility and use of the OERs as additional condition for the accreditation of programmes and universities.

(iii) Universities managements may need to put up institutional comprehensive policy on OERs such that lecturers could be encouraged to donate resources.

(iv) Modalities to provide free access to data within the campus environments need to be worked out for the lecturers.

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