



**Assessment of Lecturers' Knowledge and Readiness for
Open Education Resources in Nigerian Open and Distance
Learning Universities**

**Évaluation De La Connaissance Et De L'état De Réceptivité Des
Enseignants A L'emploi Des Ressources Educatives Non-
Restreintes Dans Les Universités De L'enseignement A Distance
Au Nigeria**

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Abstract

The open educational resources project has been underway for over decade now and universities are slowly adopting may be because of insufficient knowledge and readiness necessary to embrace it. This study focused on assessing the knowledge and readiness for open education resources among lecturers based on gender, academic status and areas of specialisation. A survey research design was employed on the five thousand three hundred and fifteen lecturers from five accredited distance education universities in Nigeria. Total sample used was six hundred and ninety selected using stratified sampling technique. Two research questions were answered and three hypotheses were tested. OER knowledge and readiness' questionnaire developed by researchers with 0.79 reliability coefficient using Cronbach Alpha was the instrument for the study. Data collected were analysed using descriptive, t-test, analysis of variance and Bonferroni

Post Hoc statistics. Results showed that distance learning lecturers with the rank of professors had lower knowledge of OER but possessed higher readiness to adopt OER than those in lower ranks. Female lecturers in ODL institutions were better in OER knowledge than male lecturers. Significant difference existed in OER knowledge but insignificant difference was noticed in readiness for OER. It is therefore recommended that highly ranked and male lecturers should more sensitise through training, workshops and seminars in OER. Also, creation and use of OER by lecturers should be recognised in their promotion to serve as incentive to favourably dispose to OER usage.

Résumé

Le projet de ressources éducatives non-restreintes est en cours depuis plus d'une décennie et les universités l'adoptent lentement, peut-être en raison d'un manque de connaissances et de réceptivité nécessaires pour l'adopter. Cette étude s'est concentrée sur l'évaluation des connaissances et de l'état de réceptivité des enseignants aux ressources éducatives non-restreintes en fonction du sexe, du statut académique et des domaines de spécialisation. Un plan de recherche par sondage a été mené sur cinq mille trois cent quinze enseignants dans les universités agréées de l'enseignement à distance au Nigéria. L'échantillon total utilisé était de six cent quatre-vingt-dix sélectionnés à l'aide de la technique d'échantillonnage stratifié. On a répondu à deux questions de recherche et vérifié trois hypothèses. Le questionnaire sur la connaissance et l'état de réceptivité aux REN, élaboré par des chercheurs avec un coefficient de fiabilité de 0,79 à l'aide de Cronbach Alpha, a été l'instrument de l'étude. Les données recueillies ont été analysées à l'aide d'une analyse descriptive, d'un t-test, d'une analyse de variance et de statistiques Post Hoc de Bonferroni. Les résultats ont montré que les enseignants de l'enseignement à distance ayant le rang de professeurs connaissaient moins bien les REN, mais ils étaient plus disposés à les adopter que les enseignants de rang inférieur. Les enseignantes des établissements de l'enseignement à distance étaient mieux informées sur les REN que les enseignants. Il y avait une différence significative dans la connaissance des REN, mais une différence insignifiante a été constatée dans l'état de réceptivité à l'utilisation des REN. Il est donc

recommandé de sensibiliser les hommes enseignants de haut niveau à regard de REN par le biais de formations, d'ateliers et de séminaires. En outre, la création et l'utilisation des REN par les enseignants devraient être reconnues dans leur avancement pour servir d'incitation à ceux qui sont favorables à l'utilisation des REN.

Keywords: *Open education resources, Lecturers' readiness, Lecturers' Knowledge, Academic status, Area of specialisation, Gender.*

Mots-clés : *Ressources éducatives non-restreintes, la réceptivité des enseignants, connaissances des enseignants, statut académique, domaine de spécialisation, genre.*

Introduction

Open Education Resources (OER) involves teaching, learning and research materials in any medium that reside in the public domain and have been released under an open license that permits access to share, use, and remix, and redistribution by others with no or limited restriction. William and Flora Hewlett Foundation (2012) defines OER as teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge. The Organisation for Economic Co-operation and Development (OECD) (2007) defines OER as digitised materials offered freely and openly for educators, students, and self-learners to use and reuse for teaching, learning, and research. OER includes learning content, software tools to develop, use, and distribute content, and implementation resources such as open licences. These definitions exposed some of the tensions that exist with OER in form of nature of the resources, sources of resources and level of openness.

There are many critical issues surrounding access, quality and costs of information and knowledge over the internet as well as on provision of content and learning materials. There is an urgent need to appraise readiness and knowledge of academic staff in OER and to what extent are higher institutions especially distance education universities giving relevant supports to these staff in becoming active participants on OER platform. Hylen (2008) observed that the two most important aspects of openness must do with free availability over the internet and as few restrictions as possible on the use of the resources. OER is relatively a new phenomenon which may be a part of larger trends towards openness in higher education.

The OER movement originated from developments in open and distance learning (ODL) and in the wider context of a culture of open knowledge, open source, free sharing and peer collaboration, which emerge in the late 20th century (Wiley, 2006). OERs are freely accessible, openly formatted, openly licensed documents and media that are useful for teaching, education, assessment and research purposes. It generally involves learning content in form of full courses, collections and journals. Other aspect is the tool which comprises software to support the development, use, reuse and delivery of learning content. The last aspect is the implementation resources which include intellectual properties licenses to promote open publishing of materials, design principles of best practices, and localisation of content. Downess (2006) described the 4As of OER as is, accessibility, appropriate, accredited and affordable. With Creative Commons (CC) licenses, learners can find and incorporate free materials for reports and presentations; educators can customize textbooks and lesson plans; universities can distribute video lectures to a global audience; and publishers can adapt materials and develop services for an enhanced learning experience. The OER movement has enormous potential to yield much wider access to and participation in global education, but only if a critical mass of educational institutions and communities embrace openness. As pointed out by Hylen (2008), there are many critical issues surrounding access, quality and costs of information and knowledge over the Internet as well as on provision of content and learning materials.

Operations of OER among individuals and institutions have been threatened by many fundamental questions among which are: why should anyone give away anything for free? And what are the possible gains in giving away one's knowledge in form of materials to OER? This in most cases has affected the dispositions of peoples in academics and institutions at large. It is further argued that if universities do not support the open sharing of research results and educational materials, traditional values will be increasingly marginalised by market forces. Lack of awareness of lecturers and researches of copyright issues led to unpreparedness and unwillingness to engage in OER activities while majority that are willing still hesitate as to how to do this without losing their rights (McCracken, 2006). Academic staff in higher institutions especially universities in West Africa are still sceptical about what OER means unlike those in the developed countries.

Hylen (2008) reported that over 150 universities in China participated in China Open Resources for Education initiative while 11 top universities in France have formed the Paris Tech Open Courseware (OCW) project. Seven universities in the United States have a large scale OER programmes (e.g. MIT, John Hopkins, Rice etc.) as other OER projects are emerging at universities in Australia, Brazil, Canada, the UK and South Africa. The Universities in such countries have provided adequate and required supports for academic staff to be active participants in OER. OECD (2007) and Yuan, MacNeil and Kran (2008) enumerated challenges for OER in higher education institutions as technical, economic, social and legal. Lack of broadband and other technical innovations, hardware/software facilities and difficulties in covering costs for developing OER are major challenges for higher institutions. Therefore, the need to ascertain the level of readiness of academic staff and institutional supports for open education resources among distance education universities in Nigeria on the bases of gender, mode of delivery, area of specialisation and academic status. Global educational issues may not be resolved through OER but may serve as genuine equaliser for education and for empowering social inclusion (Olcott, 2012). This can be achieved when there is adequate knowledge and use of OER. A study on staff attitude and awareness of OER showed that out of 307 only 18% have heard about the term OER (Rolf, 2012). In a three-day workshop held by RETRIDAL in

collaboration with COL in 2012, it was found that out of thirty participants drawn from ten universities, less than 10% of the respondents have heard of OER. All the participants indicated that there were no official references to OER, no OER policies and funding in their respective universities (Ipaye & Ipaye, 2012). But Okonkwo (2012) in a study on the needs assessment of ODL educators to determine their effective use of educational resources with population drawn from the academic staff of Ladoké Akintola University (LAUTECH), Ogbomosho and Federal University of Technology (FUTA), Minna with thirty participants found that 63.2% have used OER and 82.2 % are familiar with OER. This complements the findings of Reed (2012), who reported that 75% of respondents in a study had already reused and shared content while 32% were aware of open content movement and 68% of them had reused existing materials online and 15% were willing to share content. Agber and Agwu (2013) on the assessment of online resources usage found that about 70% of the respondents used electronic journals, while 67.9% make use of electronic books.

Littlejohn and Hood (2012) gave six guidelines for structuring learning and teaching opportunities relevant to educator's knowledge in open education resource engagement. The guidelines are:

- Learning should include a range of theoretical knowledge of OER. Theoretical knowledge relevant to OER engagement would incorporate: licensing and legal frameworks; technical and hosting; quality assessment; locating OER; adaption and repurposing of OER; pedagogies of OER employment.
- Learning should include discipline specific theoretical knowledge of OER. Expertise development is enhanced and knowledge is more readily assimilated and internalised when it is easily translatable to the contexts in which it will be utilised. For educators to achieve the highest levels of OER engagement, where their actions and learning are embedded within their practice, it is necessary for them to have developed knowledge and expertise that is specific to and situated within the personal settings and contexts of their work.
- Educators need the opportunity to develop the experiential and practical knowledge and skills that will enable them to actually

engage with OER in their practice. Educators are more likely to learn about and use OER when they are connected to and embedded within their day-to-day work tasks. Practical knowledge is necessary for translating theoretical conceptual knowledge and learning around OER engagement into the acts and contexts of practice.

- Educators need support to develop the self-regulative and socio-regulative knowledge that will enable them to understand the value of OER both for their own practice and professional learning and for their students' learning and development. Self-regulative knowledge consists of the meta-cognitive and reflective skills that learners use to monitor and evaluate their own actions and to make sense of and apply the knowledge and expertise they are creating within the varied contexts of their professional practice. Self-regulative knowledge acts as a mediator for combining theoretical knowledge and practical expertise and experience.
- Continued learning and development is enhanced when educators have the opportunity to interact with others around their OER use and learning. Socio-cultural knowledge is developed through both online and offline interactions and is important in encouraging sustained engagement with OER by educators at all stages of their learning journey.
- Each workplace has its own culture guiding professional practice, and therefore learning about OER ideally should be linked with work activities. Educators' engagement with OER is reliant not only on the learning opportunities available to them as individual, independent learners but also the construction of workplaces that support their learning journeys and engagement with OER. Supporting the construction of workplaces that facilitate educators' on-going learning with OER will help to promote higher levels of OER use and learning.

There are variations in the reports of the researchers especially those conducted in the same year 2012. The studies of Rolf, and Ipaye and Ipaye showed a low percentage of awareness while the studies of Okonkwo and Reed showed a high percentage of awareness in the same

year. The variation may have arisen due to different sample and sample size used. The use of electronic journals and books as presented by Agber and Agwu is an indication of the use of OER. What is observed is that some people use OER without knowing that they are participating in OER. The knowledge on the aspect of OER that is receiving attention will help in planning and repositioning OERs in higher institutions. Commonwealth of Learning (2016) assert that attention should be given in assembling, adaptation, contextualising existing OER, and developing habit of working in teams to improve the use of OERs in higher institutions.

Open Education Resources (OER) refers to teaching, learning and research materials in any medium that reside in the public domain and have been released under an open license that permits access, use and re-purposing, reuse and redistribution by others with no or limited restriction (Atkins, Brown & Hammond, 2007) These are many critical issues surrounding access, quality and costs of information and knowledge over on the internet as well as on provision of content and learning materials. There is an urgent need to appraise adaptability and the extent to which open and distance learning (ODL) institutions give relevant supports to lecturers in becoming active participants on OER platform. Hylen (2008) observed that the two most important aspects of openness have to do with availability over internet and few restrictions as possible on the use of the resources. It is on this note that this study examined lecturers' knowledge and readiness for open education resources in Nigerian open and distance learning Universities when the gender, academic status and specialisation of these lecturers are taken into consideration.

Objectives

The following objectives guided the study:

- (i) To ascertain level of knowledge of Nigerian distance learning universities' academic staff in open education resources based on gender.
- (ii) To evaluate the extent of readiness of academic staff in distance education universities in using of OER considering the areas of specialisation.

- (iii) To find the readiness and knowledge of academic staff using professional status.

Research Questions

1. To what extent do ODL academic staff in Nigerian distance learning universities possess requisite knowledge and readiness for OER base on academic status?
2. Is there any difference in the OER readiness of Nigerian ODL universities academic staff for OER on the base on areas of specialisation?

Hypotheses

1. There is no significant difference in knowledge of open education resources between male and female academic staff of distance education universities in Nigeria.
2. There is no significant difference in Nigerian distance learning universities academic staff's readiness for embracing OER considering areas of specialisation.
3. There is no significant difference in OER readiness and knowledge considering the status of the academic staff in distance learning institutions in Nigeria.

Methodology

Research Design

Descriptive survey mount on quantitative research was employed for the study. The study was carried out among distance education universities in Nigeria.

Population, Sample and Sampling Technique

Five thousand three hundred and fifteen academic staff (lecturers) of the six accredited distance education universities in the country as at the time of study formed the population. Out of five universities used, one was single mode open and distance education University while the remaining four run dual mode distance education. The sample for the study was selected using stratified sampling technique. Academic staffs in these universities were stratified into faculties, departments, cadre and gender. Sample obtained from each of the universities were based on the fully completed and returned questionnaire by the

academic staff. Total sample used for the study was 690 representing 12.98% of the total population.

Table 1: Frequency and Percentages of Sample by Gender and Mode of ODL Delivery

Gender	Frequency	Percentage
Male	432	62.6
Female	258	37.4
Delivery Mode		
Single	72	10.4
Dual	618	89.6

From Table 1, 432(62.6%) of sample used for the study are male while 258(37.4%) are female academic staff. One single mode ODL university was used and 72(10.4%) of academic staff were selected while the remaining 618(89.6%) came from other five dual mode ODL universities.

The distribution sampled academic disciplines is represented in the Figure 1

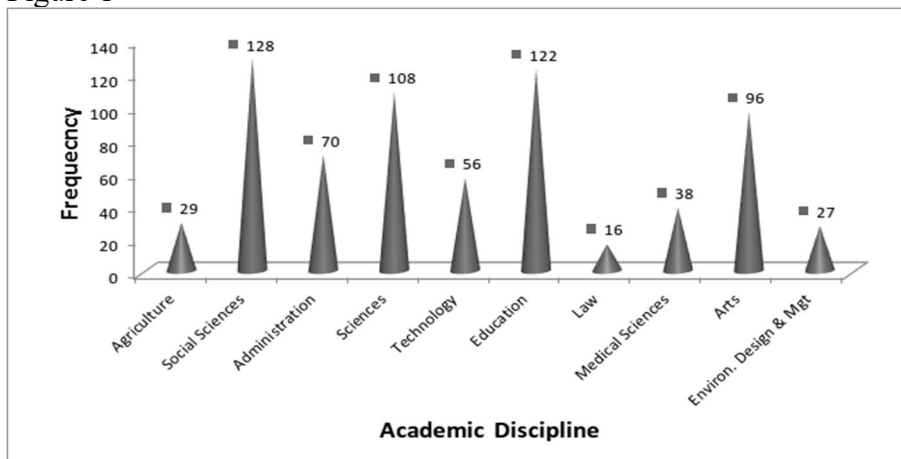


Figure 1: Frequency of Sample by Academic Discipline

Figure 1 shows that 29(4.2%) of the sample came from field of Agriculture, 128(18.6%) from social sciences, 70(10.1%) from administration, 108(15.7%) from sciences and 56(8.1%) from technology. Others are 122(17.7%) from education, 16(2.3%) from

law, 38(5.5%) from medical sciences and 27(3.9%) from environmental design and management.

Instrumentation

One questionnaire titled, Open Education Resource Readiness and Institutional Support Questionnaire (OERRISQ) was developed by the researchers to capture all aspects of the study. Section A requests for background information about the academic staff and their institutions in form of gender, discipline, academic status and mode of delivery distance education. Section B is a 20-item testing the knowledge of academic staff on OER with Yes/No responses. The scale in section C examined readiness of academic staff with 15 items on three scale responses of 'To a great extent, To certain extent and Not at all'. The instrument was given to open education resource experts in National Open University of Nigeria for content and construct validities. The instrument was also pilot tested using thirty-five academic staff from the University of Abuja to ascertain the level of internal consistencies of the items of each subscale. The reliability coefficients of the subscales were 0.75 using Kuder-Richardson-20 and 0.82 using Cronbach Alpha for OER knowledge and OER readiness scales respectively.

Data Collection Procedures

The data gathering was conducted in five ODL universities in Nigeria. They are: Modibbo Adama University of Technology, Yola; National Open University of Nigeria, Abuja; Obafemi Awolowo University, Ile-Ife; University of Ibadan, Ibadan and University of Lagos, Lagos. One of these universities operates distance education as single while four are dual mode universities. Researchers physically visited each of these universities to administer the instruments to selected academic staff considering their discipline and status. Data collection took three months because the lecturers were busy to give attention to the completion of the questionnaire. By the end of three months, the completed questionnaire were 727 out which thirty seven were found incomplete and were removed to remain 690 that were subjected to scoring and analysis. The filled questionnaires by the lecturers were scored according to the nature of responses for each of the sub-scales. On OER knowledge sub-scale, 'Yes' was scored 1 while 'No' was

scored 0. The maximum mark obtainable for this scale was 20 while the minimum mark was 0. For the OER readiness sub-scale, ‘to a great extent’ was given 3, ‘to certain extent’ was awarded 2 and not at all 1. Forty-five was maximum mark obtainable in this scale with a minimum mark of 15.

Method of Data Analysis

Data collected from the study were analysed based on research questions and hypotheses generated. Research questions 1 and 2 were answered using frequencies, percentages and descriptive. Hypothesis 1 was tested at 0.05 level of significance utilising t-test while Analysis of variance (ANOVA) was used to test hypothesis 2 and 3. Bonferroni Post hoc was carried out to ascertain the significant of differences between all pair means and to know which pairwise group are actually differ when ANOVA had established significant differences.

Results

Data collected were analysed using relevant statistical tools and the results are presented using table and charts based on the research questions and hypotheses generated for the study.

Research Question One: To what extent do ODL academic staff in Nigerian distance learning universities possess requisite knowledge and readiness for OER based on academic status?

Table 2: Mean of Academic Staff Knowledge and Readiness for OER by Status

Academic status	N	OER Knowledge			OER Readiness		
		Mean	Std. Devn	Std. Error	Mean	Std. Devn	Std. Error
Professor	49	32.04	5.761	.832	9.43	4.326	.624
Reader	103	32.26	6.586	.649	8.84	3.702	.36481
Senior Lecturer	188	33.11	6.115	.446	8.05	3.825	.279
Lecturer I & II	298	32.40	6.455	.373	7.64	3.772	.219
Assistant Lecture	53	34.00	5.616	.771	8.53	3.651	.502

Table 2 shows that Assistant Lecturers had the highest knowledge of open education resources with a mean of 34.00 followed by the senior lecturers with mean of 33.11. Lecturers who in cadre of I and II had mean OER knowledge of 32.40. The professors had the least knowledge of OER having a mean of 32.04 and followed by those in readership cadre with a mean of 32.26. Contrarily, professors were most ready to embrace OER with a mean of 9.42 followed by those that are readers with a mean of 8.84. Lecturers I and II had the least readiness to adapt to OER having a mean of 7.64 and they closely followed by the senior lecturers with a mean of 8.055. It is therefore deduced that though professors in distance education institutions had lower knowledge of OER, yet they possess higher readiness to adapt OER operations than those in lower academic cadre.

Research Question Two: Is there any difference in the OER readiness of Nigerian ODL universities academic staff for OER based on areas of specialisation?

Table 3: Mean Readiness for OER by Academic Staff Areas of Specialisation

Academic Specialisation	N	Mean	Std. Devn.	Std. Error
Agriculture	29	33.48	5.914	1.098
Social Science	128	32.45	5.315	.470
Administration	70	33.76	5.943	.710
Sciences	108	32.75	6.189	.596
Technology	56	33.13	6.015	.804
Education	122	33.21	6.180	.560
Law	16	31.25	7.225	1.806
Medical Sciences	38	35.32	7.541	1.223
Arts	96	30.07	6.963	.710
Environmental Management	27	32.63	5.856	1.113

From Table 3, it is revealed that lecturers from medical sciences had the highest readiness to inculcate OER to academic activities with highest mean of 35.32 followed by those in administration with a mean of 33.76. The mean readiness of lecturers who specialise in

agriculture, education, sciences and environmental management are 33.48, 33.21, 32.75 and 32.63 respectively. Lecturers from arts and law had the least readiness for OER with mean scores of 30.07 and 31.25 respectively. From these results, the levels of readiness for OER among lecturers considering their areas of specialisation are different.

Testing of Hypotheses

Hypothesis One (Ho1): There is no significant difference in knowledge of open education resources between male and female academic staff of distance education institutions in Nigeria.

Table 4: t-test of ODL academic staff’s Knowledge of OER by Gender

Gender	N	Mean	Std. Devn.	Std. Error	t	df	P
Male	432	7.85	3.8829	.183	2.391	688	.017*
Female	258	8.57	3.185	.238			

*=Significant at P<0.05

Table 4 shows that male academic staff in ODL institutions had a mean score of 7.85 in knowledge of OER while female academic staff had mean of 8.57. This implies that female academic staff in ODL institutions had higher knowledge of OER than their male counterparts. Also, the t value of 2.391 with a degree of freedom of 688 is significant since P value of .017 is less than .05. Therefore, there is a significant difference in knowledge of open education resources between male and female distance learning institutions in Nigeria.

Hypothesis Two (Ho2): There is no significant difference in Nigerian distance learning universities academic staff’s readiness for embracing OER considering areas of specialisation.

Table 5: ANOVA of ODL Academic Staff Readiness for OER Involvement by Areas of Specialisation

	Sum of Squares	Df	Mean Square	F	P
Between Groups	1100.919	9	122.324	3.190	.001
Within Groups	26078.080	680	38.350		
Total	27178.999	689			

From Table 5 it is revealed that significant difference exist in readiness for OER involvement among open and distance learning institutions considering their areas of specialisation [F(9,680)=3.190; P<0.05]. Therefore, there is a significant difference in ODL academic staff readiness for involvement in OER considering areas of specialisation. Bonferroni post hoc was carried out to identify the significance of mean differences as shown on Table 6.

Table 6: Bonferonni Post Hoc Analysis of ODL Academic Staff Readiness for OER Involvement by Areas of Specialisation

I(Specialisation)	J(Specialisation)	Mean Difference (I-J)	Std. Error	P
Arts	Agriculture	-3.409	1.312	.663
	Social Sciences	-2.380	.836	.524
	Administration	-3.684*	.973	.034
	Sciences	-2.677	.867	.394
	Technology	-3.052	.1.041	.477
	Education	-3.132	.845	.134
	Law	-1.177	1.672	1.000
	Medical Sciences	-5.243*	1.186	.022
	Environmental / Design Management	-2.557	1.349	.936

*=Significant at P<0.05

Table 6 shows that significant difference existed between academic staff that in Arts and Medical sciences on readiness for OER

involvement. Also, significant mean difference in readiness for OER involvement could be seen between academic staff in Arts and those in administration. No significant difference in readiness for OER involvement was noticed between academic staff in Arts and those in agriculture, social sciences, sciences, technology, education, law and environmental management.

Hypothesis Three (Ho3): There is no significant difference in OER readiness and knowledge considering the status of the academic staff in distance learning institutions in Nigeria.

Table 7: ANOVA of ODL Academic Staff Readiness and Knowledge of OER by Academic Status

Variables		Sum of Squares	df	Mean Square	F	P
OER Readiness	Between Groups	188.012	4	47.003	1.193	.313ns
	Within Groups	26990.987	685	39.403		
	Total	27178.999	689			
OER Knowledge	Between Groups	210.596	4	52.649	3.630	.006*
	Within Groups	9933.933	685	14.502		
	Total	10144.529	689			

*=Significant at 0.05; ns = Not significant at 0.05

Table 7 shows that the difference in academic staff readiness for involvement in OER base on academic status was not significant because the F(4,685) value of 1.193 with P value of .313 is greater than 0.05. For knowledge of OER, significant difference existed considering status of academic staff (F(4,685)=3.630, P<0.05). Therefore, there is no significant difference in OER readiness but there is significant difference in OER knowledge considering the status of the academic staff in distance learning institutions in Nigeria.

Table 8: Bonferonni Post Hoc Analysis of ODL Staff OER Knowledge by Academic Status

I(Academic Status)	J(Academic Status)	Mean Difference (I-J)	Std. Error	P
Lecturer I / II	Professor	-1.772*	.592	.033
	Reader	-1.191*	.435	.044
	Senior Lecturer	-.404	.355	.862
	Assistant Lecturer	-.884	.568	.658

Table 8 shows that significant difference noticed on knowledge of OER based on academic status of lecturers in distance education institutions in Nigeria was between Lecturer I/II and Professors and between Lecturer I/II and readers. Contrarily there was no significant difference in OER knowledge between Lecturer I/II Senior Lecturer and between lecturer I/II and Assistant lecturer.

Discussion of Findings

Academic staff knowledge and readiness for OER is a concern to all stakeholders. Academic staff status, gender and areas of specialisation had influence on their knowledge and readiness for OER in distance education institutions in Nigeria. Professors in distance education institutions had lower knowledge of OER, yet they possess higher readiness to adapt OER operations than those in lower academic cadre. This implies that the academic staffs are aware of OER with a higher percentage among the Senior Lecturers and below. This corroborates the findings of Okonkwo (2012) who found that 63.2% of academic staff used has used OER and 82.2% were familiar with OER. Also, in agreement with the studies of Rolf (2012), Ipaye and Ipaye (2012), Hart, Chetty & Archer (2015), Kisanga (2016), and Shigete, Koizumi, Sakai, Tsuji, Inaba & Hiraoka (2017) whose studies revealed academic staff awareness of OER. The level of awareness varied in the different studies.

The difference in the level of awareness may be attributed to generational differences. It could be that the younger generation were more among the senior lecturer level downwards than those at the professorial level. The younger generation are said to be more disposed to the use of internet and related gadget than the older generation. This might have influenced their disposition to the knowledge in OER. What is most worrisome is readiness of the professors to adapt OER as compared to the academic staff in the lower cadre. Although, the academics in the lower cadre had the highest knowledge of OER, it is likely that they had a wrong perception on the adaptation which may have influenced their level of readiness in adapting OER. This suggests advocacy of OER among academic staff. The focus therefore will be on the usage and probably the challenges facing the use of OERs in the distance learning universities.

It was also found that the female academic staff in ODL institutions had higher knowledge of OER than their male counterparts, which presents significant difference in knowledge of open education resources between male and female distance learning universities in Nigeria. There is a need to further investigate why the male counterparts are not disposed to the adoption of OER.

The levels of readiness for OER among lecturers considering their areas of specialisation is different from those in medical sciences and administration that are mostly ready while those in arts and law were least ready. This led to the significant difference that was recorded in ODL academic staff readiness for involvement in OER between those in arts related discipline and medical sciences. It could be that it is easier to read and understand literary books unlike the sciences that would need some illustrations to substantiate ideas and skills presented. Also, it was observed that teaching science courses at a distance is more demanding. The need to bring what is abstract to reality is on a high demand in the teaching and learning of science courses and has influenced the level of readiness from medical sciences. There are facilities in teaching and learning medical sciences distance learning that calls for attention. It is therefore necessary to involve virtual laboratories for teaching, learning and sharing of ideas in science-based courses.

Conclusion

Adequate use of OERs enhances global integration and sharing of knowledge and ideas that could help improve the quality of teaching and learning. From the findings in the study, it could be said that most academic staff are using OERs without knowing they are. Some are aware of OER but it seems that most still do not know how to access and integrate the use. It is also worthy of note that apart from the usage, there is need to also contribute either by remix, use or through creation.

Recommendations

Based on the findings, the following are recommended:

1. There should be advocacy on the need, use, and creation of OERs that would enhance teaching and learning in distance universities. This can be done through train the trainer workshop, seminars and the like. The training might not necessarily be face-to-face; it could be done through online using one of the OER materials but with proper organisation and monitoring.
2. The teaching and learning of medical sciences should be enhanced through OERs especially in practical oriented courses and to integrate practices across the globe. The OER use should be purposely planned into the curriculum.
3. Creation and use of OERs by the academic staff should be recognised in their promotion to serve as an incentive in their participation and usage.
4. More OER driving facilities (internet facilities, electricity, and computers) should be provided for dual mode ODL universities to enable lecturers to be more involved in OER adaptation.
5. Male ODL lecturers should be encouraged to use OER through sensitisation using workshops and seminars.
6. Increase lecturers' access to OER materials, collaborative networks and online publishing opportunities should be ensured by ODL institution authorities to prepare facilitation materials.

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