

## Computer Anxiety and Use of Open Education Resources by Distance Learning Students in two Universities in Oyo State, Nigeria

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### **Abstract**

*Open Educational Resources (OERs) are digitised materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research. In spite of the inherent opportunities that abound in the use of Open Educational Resources by students, some distance learning students (DLCs) are yet to tap into this golden advantage to improve their academic performances. This low use is likely brought about because of the high rate of computer anxiety of DLC students. It is against this backdrop that this study seeks to examine the influence of computer anxiety on the use of OERs for academic activities by DLC students in the University of Ibadan and the National Open University of Nigeria, Oyo State, Nigeria. The study adopted the descriptive survey research design of the correlational type. The population included 19,855 DLC students from the University of Ibadan and the National Open University of Nigeria, Oyo State, Nigeria. A two-staged sampling technique was used to select a sample size of 368. The questionnaire was used for data collection. Data collected were analysed using percentages, mean and standard deviations and Pearson's product moment correlation (PPMC). Female participants (58.9%) dominated the study. Findings revealed that the level of computer anxiety of the students is moderate ( $\bar{x} = 33.59:60$ ). Findings also showed that significant relationship exists between computer anxiety ( $r = -.252$ ;  $p < 0.05$ ) and use of OER. Computer anxiety is germane to use of Open Educational Resources and the overall academic success of the distance learning students. Thus, trainings and presentations on how to search for, utilize and evaluate Open Educational Resources should be made available for the students and that adequate upgrade of users' skills and user support together with opportunities of remote connectivity to the campus network for all students should be provided in order to improve their competence level in the use of Open Educational Resources.*

**Keywords:** Computer anxiety, Computer self-efficacy, Distance Learning Students

(DLCs) and Open Education Resources (OERs)

### **Introduction**

The California Distance Learning Project CDLP (2011) defines distance learning (DL) as an instructional delivery system that connects learners with educational resources. Distance learning provides educational access to learners not enrolled in educational institutions and can also help to augment learning opportunities of current students. Distance education is a method of learning remotely without being in regular face-to-face

contact with the teacher in the classroom. Distance learning (DL) is a system of education characterised by a physical separation between the teacher and the learner. It is an educational process in which training is given to learners through a range of media, including print and other Information Communication Technology (ICTs), to learners who may have missed the chance previously in life or have been denied face-to-face formal education because of socio-economic, career, family and other circumstances.

The distance learning programme broadens access to education and gives opportunity for continuous and life-long learning for learners. Distance learning frees students from the constraint of time, space and offers flexible opportunities as it is learner centered. Distance learning students' characteristics are different from students in traditional universities as they are adult learners, mature, employed, have family responsibilities, higher motivation, are willing to take responsibility of their own education, have clear cut goals, are self-directed, study on independent basis, learn in a variety of ways, take control over their learning and often experience a feeling of isolation and remoteness from other students (Adetimirin and Omogbhe, 2011). Distance learning students require quality and up to date information which are not only available in prints format but also in electronic format. This is because the nature of studies requires that an individual enrolling for such programmes must use Information and Communication Technologies (ICTs) for their learning activities. Resources available to distance learning students are presented in different formats because of the study's uniqueness. Open education resources are one of such resources.

Open education resources generally refers to educational materials that encompass research articles, textbooks, podcasts and other multimedia materials, assignments, simulations that are either licensed under open copyright license like Creative Commons (CC) or others in the public domain. Open Educational Resources (OERs) are teaching, learning or research materials that are in the public domain or released with an intellectual property license that allows for free use, adaptation, and distribution (UNESCO, 2012). Open Educational Resources (OERs) are free learning resources available on the Internet. Open Educational Resources can be openly licensed or in the public domain, and can be used or reused for free. They can exist in many formats: text (either print or digital); audio, video, multimedia or hypermedia; or various combinations of these.

The adoption of OERs has surfaced a new set of innovative teaching and learning practices, as well as presented in a potentially cost-effective mechanism to improve the quality of educational offerings by optimising the use of freely available and openly licensed online resources (Daniel, Kanwar and Uvalic-Trumbic, 2009). The utilisation of OERs by distance learning students purportedly reduces the time associated with developing courses and programmes. Open education resources facilitate sharing of knowledge, preserves and disseminates indigenous knowledge and improves educational quality at all levels (Kanwar, Kodhandaraman and Umar, 2010). Bacsich, Phillips and Bristow (2011) carried out a report on learner's use of online educational resources for learning and found out that of all the respondents, majority of the respondents confirmed that they made use of OERs to enhance personal knowledge and complement a course and minority affirmed that it was to plan a course of study. For distance learning students, OERs provide access to global online content that can be localised without legal restriction, introduce greater choice in terms of available learning resources and create inclusive learning communities (Butcher, 2011).

Types of OERs that could be used by distance learning students include open access articles, YouTube (and other videos), website links, public domain resources, syllabi, open courseware, open textbook. Within the higher education context, Open Educational Resources (OERs) encompass any educational and research resources including curriculum maps, course materials, entire and parts of e-courses, lessons plans, learning materials, textbooks, audio and video records, simulations, experiments, multimedia content, applications and games, and any other materials that have been designed for use in teaching, learning and researching that are openly available for use without an accompanying need to pay fees (Butcher, 2011; Groom, 2013). Computer anxiety is a factor that could influence the use of OERs by distance learning students.

Computer anxiety is the individual's judgment of their knowledge and capabilities to use computers in diverse situations. Computer anxiety can also be defined as the feeling of discomfort, apprehension and fear of coping with ICT tools or uneasiness in the expectation of negative outcomes from computer-related operations. That is, when students suffer from computer anxiety, they have a fear about working with a computer or even thinking about using computers. Students who do not know how to do certain task may experience computer anxiety. Fear of causing damage to computer can also hinder students from making use of the computer and result to computer anxiety.

Computer anxiety refers to students' fear of computers and the tendency of a student to be uneasy, apprehensive and phobic towards current or future use of computer in general. An individual is considered computer anxious, if his emotional state during interaction with computer reduces the benefits of the use of computers and discourage necessary use of computers. The components of computer anxiety considered in this study are fear, technophobia and difficulty.

## Literature review

Open Educational Resources (OERs) is a term used for any educational material that is freely available over the Internet. The term was coined at the 2002 United Nations Educational, Scientific and Cultural Organization (UNESCO) meeting, and after several years of development of projects and ideas, the community's understanding of the term was crystallised into the Cape Town Open Education Declaration in 2008 (UNESCO 2002; Cape Town, 2010). The generally accepted definition is digitised materials offered freely and openly for educators, students, and self-learners to use and reuse for teaching, learning, and research (Yuan, MacNeill and Kraan, 2008). This definition broadly includes learning content and software that can enable the use of learning content and open intellectual property licenses, which together lead to the democratisation of learning resources. The objective of OERs is to revolutionise education by enhancing learning and increasing accessibility to marginalised and education-deprived individuals, while its openness is subject to contestation (Deimann and Friesen, 2013). It is evident that OERs transform education practices and promote the concept of openness within higher education institutions.

The spread of OERs, in addition to the spread of the Internet and new web developments create a whole new society, namely a knowledge society where knowledge can be a publicly-shared where there is free resource and where every individual can access the latest technologies and knowledge bases (Rubia-Avi, Tosato and CarramolinoArranz, 2014). Open educational resources have been part of the educational landscape since 2001 with the announcement of MIT's OpenCourseWare project, and longer if the Learning

Objects movement is viewed as a precursor to OERs (Weller, 2014). As the OERs movement spread across the world, the definition of OERs also expanded to embrace the characteristics of open license and knowledge sharing, and to include course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge (Chen and Panda, 2013). OERs has travelled across the globe in different formats such as OERs, Open Courseware (OCW), open textbooks, digital library, open access journal etc. With the basic motto to provide open access to knowledge, one thing that strikes about OER is that there is a lot of activity surrounding this concept. Open Educational Resources is considered as democratization of knowledge and education. It believes in the concept of sharing and participation.

Allen and Seaman (2016) in their study on the use of OERs by higher education faculty, found out that faculties were interested in the open concept of OERs. Open Educational Resources are developed as course descriptions, syllabuses, teaching plans, key and difficulties guidance, assignment, reference materials, and instructional videos. Besides, it also exists as learning materials, case databases, demo/virtual/simulation training systems, assignments and online self-test and examination systems. Different shapes of OERs can be used not only in classroom teaching but also in teacher training, teaching research and others (McGreal, 2012). When using OERs, students have legal permission to revise, adapt, and continually improve materials specific to their course (Wiley and Green, 2012). Previous studies have shown that the sense of control learners' gain while interacting with instructional media and content can result in increased satisfaction, enjoyment, and confidence (Luskin and Hirsén, 2010). It can be concluded that OERs is a life-long learning that creates endless possibilities to facilitate the achievement of the lofty goal of education.

According to Nikoi and Armellini (2012), OERs are be used to widen access to education through networks in the knowledge society. Open Educational Resources is distinct from other resources because it includes a license, usually called Creative Commons License that encourages the reuse, and potentially the adaptation, of materials without first requesting and obtaining permission from the creator (Butcher, 2015). The term OERs is defined by the William and Flora Hewlett Foundation as cited in Atkins, Brown and Hammond (2007) 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 repurposing by others. In this definition, it can be deduced that OERs as any digital resource, which can be freely accessed and used for educational purposes. 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. Comparison of the class outcome metrics indicated that student performance on exams, class grades, and retention rates were higher for the class that used the open textbook than for classes that used non-OERs materials (Hilton and Laman, 2012).

On the other hand, Allen and Seaman (2014) conducted the Babson Study where a nationally representative group of 2,144 faculties from institutions across the United States were questioned regarding their opinions on OERs. Of the faculty surveyed, 61.5% stated that they perceived OER to be of the same quality of a traditional resource, and approximately 12% expressed that they believed OERs were better quality. Hurt (2013) conducted a study on De Montfort University student perceptions and understanding of open education resources. The result of the study revealed that of the 264 responses, 28% (n = 74) reported that they had heard of OERs and therefore the majority 72% (n = 190) had

not. With the outcome of the study of Allen, Selman and Hurt it is evident that majority of the respondents do not know what OERs is all about.

Open education resources play a key role in the academic success of students, it promote innovation and change in educational practices. The benefits of online learning are magnified for adult learners because they allow for them to learn in the limited amount of time they have between work and their personal lives (Beaghan, 2013). Making educational content accessible and open beyond the walls of the original authoring institution can benefit everyone involved, including the reputation of the author and the institution itself (Caswell et al. 2008). Open Educational Resources is promising not only for the individual learner, but also for the educational organization this is in collaboration with (Kursun, Cagiltay and Can, 2014; Casey, 2012) who asserted that one of the prime objectives of OERs is to make educational content more widely accessible to the public and the best way to achieve increased access is through the use of CC licenses. Open Educational Resources allow the bridging of literacy gaps, by creating a legitimate, affordable and accessible learning platform (UNESCO, 2013). As universities make strategic decisions to increase their levels of investment in design and development of better educational programs, the cost effective way to do this is to embrace open licensing environments (Butcher, 2010). A factor that determines OER use by students is their computer anxiety level.

Akpan (2018) conducted a study on computer anxiety, computer self-efficacy and attitude towards Internet among secondary school students in AkwaIbom State, Nigeria. The study revealed that computer anxiety has a significant relationship with students' attitude towards the Internet which means that the students' attitude towards the Internet becomes positive as their computer anxiety increases. Rahardjo, Juneman and Setiani (2013) conducted a study on computer anxiety, academic stress, and academic procrastination on college students. For students majoring in social science, the use of technology is an obstacle that must be overcome. Unfamiliarity with the use of technology, especially in completing course works is sometimes a barrier in itself. Students majoring in social science tend not to have same level of skills with students majoring in computer science. At this point, anxiety in operating computer is suspected to influence students majoring in social science in doing procrastination. Anxiety in operating computer becomes prevalent in academic field, not just among teaching staffs (Ekizoglu and Ozcinar, 2010; Rahimi and Yadollahi, 2011), but also among school and college students (Hussain and Sultan, 2010; Kurt and Gurcan, 2010). Olatoye (2011) conducted a study on levels of participation in ICT training programmes, computer anxiety and ICT utilisation among selected professionals. The result revealed that the level of computer anxiety is highest for the medical professionals and lowest for bankers.

Computer anxiety obviously affects students' knowledge and performance in CBT. Some researchers have posited that inadequate knowledge of computer might increase the level of students' anxiety, which may invariably affect students' performance in CBT (Hassan, 2012). Computer anxiety results from lack of examinees' experience in using computers and if they become more familiar with computer use, computer anxiety might be reduced. Tekinarslan (2008) reported that there is no significant difference between male and female students' computer anxiety. Tekinarslan (2008) further reported that as students' computer knowledge increases, computer anxiety level of student's decreases. Many studies have also established the link between computer anxiety and performance in CBT. Findings from these studies also seem inconclusive. Some studies reported that computer anxiety was not statistically significant for performance in CBT (Cassady, Gridley, 2005; Stowell and

Bennett, 2010). Conversely, some studies reported that students who reported medium and high levels of computer anxiety perform worse than those with low levels in a CBT (Glaister, 2009). In addition, computer anxiety to some extent may be determined by the operation skill of the students.

### Research Questions

The following research questions were answered:

1. What are the purposes of use of open education resources by distance learning students in University of Ibadan and National Open University of Nigeria, Oyo State, Nigeria?
2. What is the frequency of use of open education resources by distance learning students in the two universities?
3. What is the level of computer anxiety of distance learning students in the two universities?
4. What is the relationship between computer anxiety and use of OERs by the distance learning students in the two universities?

### Methodology

The study adopted the descriptive survey research design of the correlational type. The population of this study consists of all the 19,855 distance learning students of University of Ibadan and National Open University, Ibadan, Oyo state, Nigeria. Distance learning Centre, University of Ibadan with DLC students in the eighteen (18) departments was 16677, while the National Open University of Nigeria, Ibadan was 3178. A two-stage sampling technique was used for the study. The first stage entails using purposive sampling to select only faculties that are common to both universities. Four faculties were purposively selected based on their being common to both universities: Agricultural Science, Arts and The Social Sciences, Education and Sciences. For the purpose of this study faculties of Arts and The Social Sciences in University of Ibadan was combined together so as to align with Faculty of Arts and Social Sciences in National Open University of Nigeria. The population of the common faculties in the two universities is 18399. At the second stage, a sampling fraction of 2% was used to obtain a sample from each of the selected faculties to obtain a total population of 368 students, as the sample size of the study (Table 3.2). This sample size is justified by Krejcie and Morgan (1970) who recommended that a sample size of 384 for a population of 100000. The questionnaire was the chief data collection instrument and data was analysed using the frequency counts, tables, percentages, mean and standard deviation for research questions. Pearson's product moment correlation analysis was used to test the hypothesis.

### Results

**Research Question 1:** What are the purposes of use of open education resources by distance learning students in the University of Ibadan and the National Open University of Nigeria, Oyo State, Nigeria?

**Table 1:** Purposes of use of open education resources by DLC students

S/N	Items	SD	D	A	SA	$\bar{x}$	SD
1.	Lecture	7 2.0%	47 13.4%	145 41.4%	151 43.1%	3.26	.762
2.	Assignment	9 2.6%	30 8.6%	167 47.7%	144 41.1%	3.27	.725
3.	Project work	7 2.0%	46 13.1%	146 41.7%	151 43.1%	3.26	.760
4.	Research	10 2.9%	29 8.3%	138 39.4%	173 49.4%	3.35	.753
5.	Seminars	16 4.6%	79 22.6%	143 40.9%	112 32.0%	3.00	.855
6.	Self-development	12 3.4%	26 7.4%	148 42.3%	164 46.9%	3.33	.759
7.	Examinations	19 5.4%	40 11.4%	138 39.4%	153 43.7%	3.21	.851
8.	Leisure and recreation	32 9.1%	124 35.4%	119 34.0%	75 21.4%	2.68	.912
9.	Group discussion	7 2.0%	63 18.0%	206 58.9%	74 21.1%	2.99	.688
10.	Term papers	37 10.6%	90 25.7%	153 43.7%	70 20.0%	2.73	.900

Key: SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree

The result showed that most of the respondents indicated that the greatest purpose that necessitated the use of OERs was research ( $\bar{x}$ =3.35; std dev. =.753); followed by self-development ( $\bar{x}$ =3.33; std dev. =.759); assignment ( $\bar{x}$  =3.27; std dev. =.725); project works ( $\bar{x}$ =3.26; std dev. =.760); lectures ( $\bar{x}$ =3.26; std dev. =.762); examinations ( $\bar{x}$ =3.21; std dev. =.851); seminars ( $\bar{x}$ =3.00; std dev. =.855); group discussions ( $\bar{x}$ =2.99; std dev. =.946); term papers ( $\bar{x}$ =2.73; std dev. =.900), while the least among them was leisure and recreation ( $\bar{x}$  =2.68; std dev. =.912).

Based on this, it can be inferred that DLC students use OERs for: research, self-development, assignment, project works, lectures, examinations, seminars, group discussions, term papers, while the least among them was leisure and recreation among others.

**Research Question 2:** What is the frequency of use of open education resources by the distance learning students?

**Table 2: Frequency of use of open education resources use by DLC students**

S/N	Items	Never	Monthly	Weekly	Twice a week	Daily	$\bar{x}$	SD
1.	Open textbooks (Peerreviewed)–OpenStax; BCampus:Open Textbooks;Open Academics;Cool4Ed; Open Textbook SUNY	63 18.0%	31 8.9%	79 22.6%	77 22.0%	100 28.6%	3.34	1.435
2.	Open Access Journal Articles –DOAJ;DASH; HighWire;ERIC;Google Scholar;IRRODL;SCRIP; Microsoft Academy;PLOS	66 18.9%	58 16.6%	77 22.0%	72 20.6%	77 22.0%	3.10	1.415
3.	Open courses and lectures notes –Yale Courses;MITOCW;OpenLearn; OpenMichigan;TuDelft OCW;NOUN-e-Courseware	61 17.4%	37 10.6%	66 18.9%	78 22.3%	108 30.9%	3.39	1.455
4	Open videos – TedTalk;YouTube;Khan Academy;	57 16.3%	62 17.7%	114 32.6%	53 15.1%	64 18.3%	3.01	1.310
5.	Open images -Flickr; Google Images;Library of Congress Digital Collection;New York Public Library Digital Collection	74 21.1%	49 14.0%	66 18.9%	82 23.4%	79 22.6%	3.12	1.454
6.	Open Music: Jamendo;SoundCloud;	95 27.1%	60 17.1%	66 18.9%	54 15.4%	75 21.4%	2.87	1.503
<b>Grand mean = 18.83</b>								

From the results, most of DLC students ( $\bar{x}=3.39$ ; std dev. = 1.415) used Open courses and lectures notes – Yale Courses; MIT OCW; OpenLearn; OpenMichigan; TuDelft OCW; NOUN-e-Courseware daily. This was followed by Open textbooks (Peer reviewed)– OpenStax; BCampus: Open Textbooks; Open Academics; Cool4Ed; Open Textbook SUNY ( $\bar{x}=3.34$ ; std dev. = 1.435); Open images - Flickr; Google Images; Library of Congress Digital Collection; New York Public Library Digital Collection ( $\bar{x}=3.12$ ; std dev. = 1.454); Open Access Journal Articles – DOAJ; DASH; HighWire; ERIC; Google



Scholar; IRRODL; SCRIP; Microsoft Academy; PLOS ( $\bar{x}=3.10$ ; std dev. = 1.415); Open videos – TedTalk; YouTube; Khan Academy ( $\bar{x}=3.01$ ; std dev. = 1.310) frequently while the least OERs used was Open Music: Jamendo; SoundCloud; ( $\bar{x}=2.87$ ; std dev. =1.503).

Based on this, it can be inferred that the OERs sources frequently used by the DLC students were: Open courses and lectures notes – Yale Courses; MIT OCW; OpenLearn; OpenMichigan; TuDelft OCW; NOUN-e-Courseware; Open textbooks (Peer-reviewed)– OpenStax; BCampus: Open Textbooks; Open Academics; Cool4Ed; Open Textbook SUNY; Open images - Flickr; Google Images; Library of Congress Digital Collection; New York Public Library Digital Collection; Open Access Journal Articles – DOAJ; DASH; HighWire; ERIC; Google Scholar; IRRODL; SCRIP; Microsoft Academy; PLOS; Open videos – TedTalk; YouTube; Khan Academy; Open Music: Jamendo; SoundCloud; ( $\bar{x}=2.87$ ; std dev. =1.503) among others.

In order to establish the frequency of use of OERs materials sources, a test of norm was conducted in Table 3.

**Table 3:** Presents test of norm showing the frequency of OERs usage

Test of norm	Range
Low	1-10
Moderate	11-20
High	21-30
<b>Grand mean</b>	<b>18.83</b>

Table 3 showed that scale between 1-10 is low, 11-20 is moderate while 21 – 30 is high. The overall mean of the frequency of use (Grand mean) of OERs is —18.83 which falls between the scales —11-20. It can therefore be concluded that the frequency of use of OERs materials sources by the DLC students in the examined institutions was moderate.

**Research Question 4:** What is the level of computer anxiety of the distance learning students?

Table 4: Level of computer anxiety by DLC students

S/N	Items	SD	D	A	SA	$\bar{x}$	SD
<b>Fear</b>							
1.	I hesitate to use a computer for fear of making mistakes that I can't correct	87	103	97	63	2.39	1.048
		24.9%	29.4%	27.7%	18.0%		
2.	I am scared of attaching OERs files or documents to emails, downloading OERs, copying files, installing and downloading programs on the computer.	105	87	113	45	2.28	1.030
		30.0%	24.9%	32.3%	12.9%		

3.	I feel anxious that I do not have the necessary skills to use computer for learning	74	111	91	74	2.47	1.048
		21.1%	31.7%	26.0%	21.1%		
4.	It scares me to think that I could cause the computer to destroy a large amount of information by hitting the wrong key	102	119	98	31	2.17	.949
		29.1%	34.0%	28.0%	8.9%		
5.	I am frightened by computers	158	96	67	29	1.91	.984
		45.1%	27.4%	19.1%	8.3%		
<b>Difficulty</b>							
6.	I find it difficult identifying and accessing resources such as OERs using the computer	111	129	75	35	2.10	.962
		31.7%	36.9%	21.4%	10.0%		
7.	I find it difficult synthesising and sharing information via the computer	99	128	96	27	2.15	.920
		28.3%	36.6%	27.4%	7.7%		
8.	I have difficulty in understanding the technical aspects of computers	93	110	103	44	2.28	.994
		26.6%	31.4%	29.4%	12.6%		
9.	I find it difficult in learning to operate computers.	135	122	49	44	2.01	1.016
		38.6%	34.9%	14.0%	12.6%		
10.	There will be less difficulty with time and practice as I become comfortable working with computers as I am in working by hand.	75	97	104	74	2.51	1.051
		21.4%	27.7%	29.7%	21.1%		
<b>Technophobia</b>							
11.	I feel apprehensive about using computers.	64	110	100	76	2.54	1.025
		18.3%	31.4%	28.6%	21.7%		
12.	I wish that I could be as calm as others appear to be when they are using computers.	54	120	109	67	2.54	.971
		15.4%	34.3%	31.1%	19.1%		
13.	I feel tense whenever working on a computer.	91	132	92	35	2.20	.940
		26.0%	37.7%	26.3%	10.0%		

14.	I feel uneasy using the computer and Internet to organise and manage information such as OERs.	113	161	51	25	1.97	.869
		32.3%	46.0%	14.6%	7.1%		
15.	I feel insecure about my ability to use computer to access OERs.	121	120	73	36	2.07	.982
		34.6%	34.3%	20.9%	10.3%		
<b>Grand mean =</b>							
<b>33.59</b>							

Key: SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree

Table 4 shows computer anxiety exhibited by DLC students. This was categorised into three (3) areas comprising: fear, difficulty and technophobia. The findings revealed that: DLC students wished that they could be as calm as others appear to be when they are using computers ( $\bar{x}=2.54$ ; std dev. = .971); they feel apprehensive about using computers. ( $\bar{x}=2.54$ ; std dev. = 1.025); they believed that there will be less difficulty with time and practice as they feel comfortable working with computers as they are in working by hand ( $\bar{x}=2.51$ ; std dev. = 1.051); they feel anxious that they do not have the necessary skills to use computer for learning ( $\bar{x}=2.47$ ; std dev. = 1.048); they hesitate to use a computer for fear of making mistakes that they cannot correct ( $\bar{x}=2.39$ ; std dev. = 1.048) and that they have difficulty in understanding the technical aspects of computers ( $\bar{x}=2.28$ ; std dev. =.994). It was also revealed that students were frightened by computers ( $\bar{x}=1.91$ ; std dev. =.984); they feel uneasy using the computer and Internet to organise and manage information such as OERs ( $\bar{x}=1.97$ ; std dev. =.869) and that DLC students find it difficult in learning to operate computers. ( $\bar{x}=2.01$ ; std dev. =1.016) among others.

It can be inferred therefore, that most exhibited computer anxiety by DLC students stemmed from areas of technophobia, difficulty in computer operations followed by fear. It is also worthy to mention that these anxieties manifest in the following ways: they wish that they could be as calm as others appear to be when they are using computers, they feel apprehensive about using computers, there will be less difficulty with time and practice as students become comfortable working with computers like they work with their hands, they feel anxious that they do not have the necessary skills to use computer for learning, they hesitate to use a computer for fear of making mistakes that they cannot correct, they have difficulty in understanding the technical aspects of computers among other.

In order to establish the level of computer anxiety exhibited by the DLC students, a test of norm was conducted. Results showed that scale between 1 – 20 is low, 21-40 is moderate while 41 – 60 is high. The overall mean (Grand mean) of the level of computer anxiety exhibited by the DLC students is —33.59| which falls between the scales —21-40|. It can therefore be concluded that the level of computer anxiety exhibited by the DLC students in the examined institutions is moderate.

**Null Hypothesis 1:** There is no significant relationship between computer anxiety and use of OERs by distance learning students in the University of Ibadan and the National Open University of Nigeria, Oyo State, Nigeria.

**Table 5:** Relationship between computer anxiety and use of OERs by DLC students

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>df</b>	<b>r</b>	<b>P</b>	<b>Sig</b>
Use of OERs	350	31.09	4.465				
Computer anxiety	350	33.56	10.198	349	-.252	.000	S

Table 5 shows the relationship between computer anxiety and the use of OERs by distance learning students in the University of Ibadan and the National Open University of Nigeria, Oyo State, Nigeria. The Table shows that computer anxiety ( $r = .252$ ;  $p < 0.05$ ) has significant negative relationship with the use of OERs by the DLC students in these two institutions. This implies that there is negative linear association between computer anxiety and the use of OERs by the DLC students in these two institutions such that the higher the amount of computer anxiety among the DLC students, the lower the usage of OERs materials to boost their academic pursuits. Thus, the null hypothesis stating that there is no significant relationship between computer anxiety and use of OERs by the distance learning students in the two universities is hereby rejected.

### **Discussion of Findings**

#### **Purposes of use of open education resources by distance learning students in University of Ibadan and National Open University of Nigeria, Oyo State, Nigeria.**

Findings showed that the greatest purpose that necessitated the use of OERs was research. However, a significant number of respondents also used OERs for self-development, assignment, project works, lectures, examinations, seminars, group discussions, term papers, while the least among them was leisure and recreation among others. This finding is in line with the view of Tariq and Zia (2014) who carried out a survey to find out the use of electronic information resources by the students of Faculty of Science, University of Karachi, Pakistan. The findings showed that majority of the respondents used electronic resources for class assignments, to update themselves, carry out research, for professional development and different course tutorials.

The result is supported by Bankole, Ajiboye and Otunla (2015) who conducted a study on the usage of electronic information resources by undergraduates of Federal University of Agriculture, Abeokuta, Nigeria. The results of the study revealed that majority of the respondents used electronic information resources to complete class assignments, to obtain course related information or study materials, update knowledge/keep abreast of latest development, research purposes while respondents who used electronic resources for entertainment and leisure were the least. Results from the study carried out by Bankole, Ajiboye and Otunla (2015) corroborated that of Tarid and Zia, (2014) this study as they reported that students use electronic resources mainly for their assignment. Okiki and Ashiru (2011) studied use of electronic information resources by Nigerian students and found that the students were motivated to use electronic resources for their research projects, gain quick access to information and to search for new things.

### **Frequency of use of open education resources by the distance learning students?**

It was shown in the finding of the study that the OERs sources used by the DLC students are: Open courses and lectures notes – Yale Courses; MIT OCW; OpenLearn; OpenMichigan; TuDelft OCW; NOUN-e-Courseware; Open textbooks (Peer-reviewed)– OpenStax; BCampus: Open Textbooks; Open Academics; Cool4Ed; Open Textbook SUNY; Open images - Flickr; Google Images; Library of Congress Digital Collection; New York Public Library Digital Collection; Open Access Journal Articles – DOAJ; DASH; HighWire; ERIC; Google Scholar; IRRODL; SCRIP; Microsoft Academy; PLOS; Open videos – TedTalk; YouTube; Khan Academy; Open Music: Jamendo; SoundCloud; ( $\bar{x}=2.87$ ; std dev. =1.503) among others.

It was further revealed that the frequency of use of OERs by the DLC students in the examined institutions was high. This finding enjoys the support of Samzugui and Mwinymbegu (2013) who conducted a study on accessibility of open educational resources for distance education learners: the case of the Open University of Tanzanians. The results show that people in the social sciences are the most frequent users of OERs, followed by education, business and management, law and science. The results implied that arts and social scientists use OERs than their counterparts in other areas. Akomolafe and Adegun (2014), in their study titled utilisation of Open Educational Resources (OERs) and quality assurance in Universities in Nigeria. The result of this study showed that the level of usage of OERs among undergraduates was moderate. This indicated that a substantial number of students visit Internet to access learning resources in whatever form to support their learning activities.

### **Level of computer anxiety of the distance learning students.**

Finding from this study further revealed that most of the computer anxiety exhibited by the DLC students is dominated by technophobia, difficulty in handling computer and later by fear. It is also worthy to mention that these anxieties manifest in the following ways: students wish that they could be as calm as others appear to be when they are using computers, students feel apprehensive about using computers, there will be less difficulty with time and practice as they become comfortable working with computers as they are in working by hand, they feel anxious that they do not have the necessary skills to use computer for learning, they hesitate to use a computer for fear of making mistakes that they can't correct, they have difficulty in understanding the technical aspects of computers among other. Also, the finding revealed that the level of computer anxiety exhibited by the DLC students in the examined institutions is moderate. In contrast of this of this finding, Kannan, Muthumanickam and Chandrasekaran (2012) conducted a study on computer anxiety among higher secondary students. This study indicates that computer anxiety of the higher secondary school students is below the average level. Computer anxiety of the higher secondary school students is independent of one's school kind, school system and tuition undergoing and dependent of one's sex, group studying, locality of school, study habit, computer course undergone and browsing habit.

According to Stiller and Koester (2016), no difference was found between the dropout and the learner group in online learning experience, but the attitudes of the dropout group were more negative, and they reported a higher level of computer anxiety. Cazan, Cocorada and Maican (2016) examined the relationships between computer and Internet anxiety, computer self-efficacy and other personal characteristics in a Romanian context. A

full-mediated model was tested. Findings revealed that low computer self-efficacy predicts anxiety, the previous education in the field of computer science has direct negative effects on computer anxiety and on the negative attitudes towards the Internet. It was also revealed that no significant difference was found between the male and the female participants concerning computer anxiety, self-efficacy and the negative attitudes towards the Internet.

### **Relationship between computer anxiety and use of OERs by distance learning students in University of Ibadan and National Open University of Nigeria, Oyo State, Nigeria.**

Findings from this study showed that there is significant negative relationship between computer anxiety and use of OERs by the distance learning. This finding corroborates those of Ekizoglu and Ozcinar (2010) and Shah et. al (2012) which examined issues involving computer anxiety. These studies found that computer skills and technology acceptance are inversely related to computer anxiety thus; gives birth to the prediction that computer anxiety may actually decrease when technology use increases because teachers become more aware of computer anxiety when they utilize computers in their classrooms. Akpan (2018) conducted a study on computer anxiety, computer self-efficacy and attitude towards Internet among secondary school students in AkwaIbom State, Nigeria. The study revealed that computer anxiety has a significant relationship with students' attitude towards the Internet which means that the students' attitude towards the Internet becomes positive as their computer anxiety increases. Cazan, Cocorada and Maican (2016) examined the relationships between computer and Internet anxiety, computer self-efficacy and other personal characteristics in a Romanian context.

### **Conclusion**

From the findings of the study, it is concluded that computer anxiety and computer self-efficacy skills are both germane to use of Open Educational Resources (OERs) and the overall academic success of the distance learning students in Universities in Nigeria. Open education resources gives distance learning students the liberty to access the educational resources and permits them to make use of them.

### **Recommendations**

The following recommendations were made:

1. The moderate computer anxieties demonstrated by the DLC students can be alleviated and improved upon through periodic lectures and seminars by the universities that would enlighten them against their wrong perceptions and anxieties towards the use of OERs.
2. Universities managements should also provide constant electricity supply, upgrade students' skills, provide students support and opportunities to purchase affordable software and hardware for use at home. There should also be remote connectivity to the campus network for all students, this will further encourage the use of OERs by the students.
3. Universities managements should in addition to integrating the use of OERs in their curriculum, make available a wide range of activities such as workshops and demonstrations in which students can be given individual attention based on the challenges confronting them. This should be facilitated alongside with parallel applications into course activities, so as to enhance exposure and high levels of practice.

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