

UTILISATION OF E-LEARNING AMONG NIGERIAN UNIVERSITY LECTURERS IN THE COVID-19 ERA

Alexander Essien TIMOTHY
ORCID: <https://orcid.org/0000-0002-6436-0705>
University of Calabar, NIGERIA
profalext@gmail.com

ABSTRACT

The study investigated the extent to which lecturers in the Faculty of Education in a public university in Southern Nigeria engaged in online/distance teaching during the Covid-19 lockdown in Nigeria. The study further examined factors that hindered online teaching by the lecturers. Seventy-seven lecturers responded to an online semi-structured questionnaire designed using Google forms and posted on the WhatsApp and Telegram groups. Descriptive statistics was used to analyze the quantitative data, while the qualitative open-ended responses were analyzed using thematic analysis. One hypothesis was stated and tested using the Pearson Product Moment Moments Correlation Coefficient. The results showed that most of the lecturers had the requisite training to facilitate online courses, although actual online teaching during the Covid-19 lockdown was done by only 10 per cent. But before the Covid-19 era only 50 per cent of the lecturers reported that they ever did any online teaching. Of that number more male than female lecturers reported teaching online. A strong positive relationship was found between years of teaching experience and frequency of doing online teaching before Covid-19. The most frequently reported hindrances to online course facilitation were inadequate electric power supply and access to the Internet as well as mobile technologies. From the findings, it was recommended, among others, that university lecturers explore available opportunities to acquire and update their online facilitation skills.

Keywords: Access to the Internet, Covid-19, Digital Technologies, Digital Literacy, Distance Education.

INTRODUCTION

The Coronavirus pandemic (WHO, 2019) has changed how learning and teaching is done. At the peak of the pandemic many nations, including Nigeria, shut down schools and imposed varying levels of lockdown on the population. The consequence on the academic system was that schools had to be shut down. For many students in Nigeria, it marked a cessation of access to learning and learning resources. For instance, students could no longer access their teachers, school libraries, laboratories and other learning centers. The closure of schools affected about 1.2 billion students in Africa (UNESCO 2020), by limiting their access to education and depriving them of their rights to education (Ramos, 2020).

Many countries had to migrate to online instruction as a means of bridging the learning gap created by the pandemic. The transition from onsite to online learning placed some demands on teachers to be skilled in online facilitation. It also required the existence of e-learning infrastructure in schools, and of course access to the internet. The implication was that inequalities in the availability of requisite e-learning infrastructure, skilled teachers and access to the internet could create inequality in access to learning during the pandemic. Therefore, in this digital era, a student without computational skills or the skills to access and use digital devices for learning or pleasure or both is effectively underprivileged.

Similarly, a teacher who lacks access to digital technologies or is incompetent in the utilization of such technologies cannot be much help in online course facilitation.

The pandemic made online learning not merely an alternative, but an imperative (Baratucci, 2018), which Bozkurt and Sharma (2020) caution should be handled carefully and compassionately. Thus, a key requirement for effective participation in online learning is access to the internet and digital technologies described by Milenkova, Peicheva, and Marinov (2018) critical to improving the quality of education and sustaining active communication between lecturers and their students.

However, inherent in the internet is its capacity to empower and discriminate (Eamon 2004, cited by Jin & Chong, 2008). In other words, the internet can not only include persons who are widely dispersed in time and space, but it can also exclude persons and by that exclusion create educational disadvantages to those excluded. The World Bank (2020) report highlights this phenomenon, noting that while school entrepreneurs reverted to distance education to counter the effects of school closure occasioned by the Covid-19 lockdown, most children and youth in poorer countries were excluded because they lacked access to the internet and mobile devices.

One of the determinants of access to and utilization of e-learning is literacy. Literacy was originally construed as the ability to read and write. However, with the incursion of digital technologies in modern society, the traditional conception of literacy as acquaintance with and efficiency in the use of text receptively or productively is no longer adequate. Therefore, UNESCO (2004) defines literacy as "ability to identify, understand, interpret, create, communicate and compute, using printed and written materials associated with varying contexts" (p.13). Imbedded in the UNESCO's definition is digital literacy.

Digital literacy has been described as the ability to use ICT skillfully not only to access, retrieve, assess information, but also to produce, store, and disseminate information. (Owen, Hagel, Lingham, and Tyson, 2016; American Library Association's Digital Literacy Task Force, 2011; International ICT Literacy Panel, 2003). Digital literacy is often used synonymously with ICT literacy. Therefore, digital literacy transcends mere ability to manipulate ICT hardware or software (Martin & Roberts, 2015). It demands, moreover, the ability to critically and creatively access, assess, evaluate and produce digital contents.

Research shows that digital literacy enhances students' capacity to master contents, learn independently, and solve problem (Katz & Macklin, 2007). However, Buckingham (2015) notes that the merits or demerits of any technology depends on its use. In terms of digital technology, its benefit in education is optimized by deliberate pedagogical applications. Kavanagh and O'Rourke (2016) sum up the benefits of digital literacy to students to include opportunity to express their opinions, access to information beyond the traditional textbooks and school syllabuses. Moreover, students can interact with teachers and other resources online asynchronously or synchronously. They can engage in recreational or study-type reading, as there are many sites with free downloadable eBooks. Also, students can learn skills or even academic contents from YouTube or MOOCS.

According to the organization for Economic Cooperation and Development (OECD) (2016, p.4), "the pervasiveness of digital technologies in daily life" has changed how people access and use information. Consequently, there is need for people "... to develop the right set of skills to make a meaningful use of these technologies." In other words, effective utilisation of digital technologies demand new literacies. However, the new literacies also feature some challenges of inequity in access as well as level of utilization.

Some of the factors implicated in inequity in access and utilization of digital technologies are income, education, and gender (OECD, 2018). One of the reasons why income, education and gender interplay is that access to digital technologies is not free in many African countries and Nigeria, particularly. One needs to own or have access to a computer or at least a mobile device. Often such access is not free. In addition, internet connectivity is not free. One needs to pay for data bundles. All internet-based activities, especially in Nigeria require money, for which, according to Archibong, Basse and Nwagbara (2018), female citizens of Nigeria have less access. That is why Selwyn (2014) argues that "...the likelihood of gaining advantage from digital education is clearly related to the resources that social

groups command, therefore pointing towards the role of digital technology in the perpetuation of accumulated advantage and the reproduction of inequalities.” (p.138)

At the turn of the 21st century, Bimber (2000), after a survey research conducted from 1996 to 1999, reported a significant gender gap in accessing and utilizing the internet, with more men than women accessing and using the internet. This was mainly attributable to socioeconomic variables and certain features of the internet that tend to make it less attractive to women. The gap is even narrower amongst the younger generation because it is believed that both girls and boys tend to have equal ICT skills. (Helsper, 2010).

In Nigeria, on the other hand, the gender gap is still wide. There are also ICT Literacy skills differences by gender in Nigerian schools (Bassi & Camble, 2011; Ojeniyi, & Adetimirin, 2013; & Obasuyi, 2015). For instance, in a study by Ugwuanyi, Chiegwu, Osuagwu and Ogbu (2017) of Radiography undergraduates' ownership and use of the ICT in two universities in Eastern Nigeria, found that with regard to use, more male (36.1%) than female students (9.9) per cent used the internet for 20-25 hours per week. The same study found disparity in ownership of ICT devices between male and female students in favour of male students.

In the same vein, Human Rights Watch (2021) reported that some of the challenges of the Covid-19 pandemic on distance learning included poor internet connectivity, restricted or lack of access to mobile devices and the internet. The report further notes that such conditions as restricted access to online resources paradoxically turned what could have been opportunities for learning into veritable barriers. The implication is that the internet is not equally accessible to all potential users and, thus, those who would have benefitted from the internet are deprived of such benefits.

Although there is free and compulsory basic education in Nigeria and, consequently, the gender gap in enrolment is low in most parts of the country, there is a literacy gap (Varrella, 2020). To bridge the literacy gap between male and female citizens, between the poor and the rich, and to reach those who by the reason of distance or a pandemic, for instance, are unable to attend school onsite, internet-mediated distance education could be the answer. For distance education to be effective and realistic, it requires teachers who have access to and can efficiently and competently access and utilize ICT tools for pedagogical purposes. But if teachers lack access to ICT and lack the skill to utilize ICT for instructional delivery, then distance learning may be impossible if not difficult to implement.

Perhaps, such deficiencies could account for Bakare's (2017) observation that the traditional face-to-face teacher interaction with students was still the most prevalent in Nigerian schools. Also, Ukpong (2016, p. 1), in a study to find out teachers' compliant with ICT use for instructional delivery, observed that teachers used less of ICT in preparing and delivering their lessons. Therefore, teachers have not complied with the objectives of ICT in instructional delivery. Bakare's (2017) literature analysis of the use of ICT in Nigerian higher institutions buttresses Ukpong's findings. Bakare observed that ICT use for instructional purposes was still peripheral. In the same vein, Nwosu, Shaffe, and Nurzatul (2018) reported that teachers in Aba North in Nigeria had moderate ICT competency, but low access to ICT and low acceptance of ICT.

Therefore, variables like lack of access to ICT and insufficient skill in the use of digital technologies could impede teachers' use of distance/online instructional strategies. This is supported by a study by Gratz and Looney (2020) that observed that university faculty were reluctant to teach online. The participants reported such barriers as teachers' lack of skills in deploying ICT for instructional purposes, and their perception that their courses were not suitable for online teaching. By the same token, Nwagwu (2020) in an assessment of the preparedness for e-learning of academic staff and other stakeholders of the University of Ibadan, found that lecturers expressed difficulty in integrating e-learning into their academic tasks. Therefore, lecturers' perceived inadequacy in the use of e-learning could truncate its utilization and application in universities.

Another factor that could impede the utilization of e-learning is inadequate infrastructure. Generally, studies (Amadi & Ohaka, 2018; Ebehikhalu & Dawam, 2016; Jacob & Paiko, 2021) have decried the deplorable infrastructure and facilities in Nigerian universities, which has occasioned industrial actions by university labour unions. Regarding the preparedness of Nigerian universities for e-learning, Adejore

and Adegboire (2021) concluded that universities were not "strategically prepared" (p.74) due to inadequacy in e-learning infrastructure and other hindrances. In Ghana, Antwi-Boampong, (2021) had similar findings regarding barriers to blended teaching among university lecturers in Ghana.

Furthermore, years of teaching experience have been associated with the utilization of e-learning. For instance, Zalat et al (2021) found that years of teaching experience and gender were the most important factors affecting the acceptance of e-learning among faculties. The highest barriers were unstable internet connectivity, availability of computers and technical problems. These findings resonate with Veletsianos (2021) who noted that the greatest barrier to the implementation of online instruction by Canadian teachers is lack of requisite training for online course facilitation. Consequently, if lecturers show reluctance or incompetence in online courses facilitation, their participation in online teaching may be illusory. Inability to participate in online instruction further exacerbates the digital divide which Rose, Seton, Tucker, & van der Zwan (2014) believe is the consequence of the skill and confidence of users.

In view of the ubiquity of Information and Communication Technologies (ICT) in modern society, inability to function effectively in the digital space does not only deprive one access to life tools, but it also sabotages one's access to literacy, which produces further deprivations. That is why this study investigated the extent to which Nigerian university lecturers participated in distance education during the lockdown and factors that facilitated or impeded such participation.

To guide the study, five research questions were posed and one null hypothesis was stated. A coding schedule was prepared to transform the responses into numbers.

RESEARCH QUESTIONS

1. To what extent are lecturers in a Nigerian university trained to facilitate online learning?
2. To what extent did male and female lecturers in a Nigerian university use the internet for instructional delivery before the Covid-19 era?
3. To what extent is the University ready for online instructional delivery?
4. To what extent did lecturers in a Nigerian university engage in online instructional delivery during the covid-19 lockdown?
5. What are the hindrances to online instructional delivery in a Nigerian university?

HYPOTHESIS

There is no significant relationship between lecturers' years of experience and frequency of using online platforms for instructional delivery.

METHOD

This section focuses on the research design, participants and settings, procedures for data collection as well data analysis.

RESEARCH DESIGN

The research design was the mixed methods design. Both the quantitative and qualitative strategies were used in the study. The mixed methods design has the advantage of providing depth, elaboration, corroboration and triangulation of quantitative findings (Schoonenboom & Johnson, 2017).

PARTICIPANTS AND SETTING

The participants were 77 lecturers in the Faculty of Education in a public university in Southern Nigeria. The University is one of the universities established in 1975 by the Federal Government of Nigeria. The participants were selected through convenience sampling. A link to a Google Form was posted by the researcher on the WhatsApp and Telegram Groups where members of the Faculty enrolled. The purpose of the survey was explicitly stated with an appeal to members of the Faculty who wish to participate in the study to click the link and fill the form. Prospective participants were assured of confidentiality. Therefore, the form did not collect email addresses. So, respondents were anonymous.

PROCEDURE FOR DATA COLLECTION

The researcher used an eleven-item semi-structured questionnaire created with Google forms to collect data on lecturers' facilitation of online courses during Covid-19 lockdown. The first four items elicited demographic variables like sex, highest qualification, years of teaching experience at the university, and professional rank. The other items probed lecturers' possession of requisite training for online teaching, level of confidence to facilitate online courses, and actual online teaching during Covid -19, the level of readiness of the institution for online teaching, and the state of facilities for online instruction at the institution. The 11th item was the only free-response/ open-ended one.

A link was generated to access and fill the Google form. The link was posted on social media platforms used by lecturers, especially Telegram and WhatsApp group chats where the lecturers were enrolled. Reminders were posted twice a week for four months. Data collection was from 3rd April 2020 to 6 July 2020.

RELIABILITY OF THE INSTRUMENT

Since in an effort to maintain the anonymity of the respondents, emails were not obtained, the test-retest reliability could not be used. So to test the internal consistency of the instrument, Cronbach Alpha was used. It was calculated online, using Wessa (2017) free online calculator. It yielded a value of .7 which was considered reliable.

DATA ANALYSES PROCEDURES

Descriptive statistics was used to analyze the quantitative data from the structured component of the questionnaire in order to answer the research questions. Simple percentages were used to calculate the frequency of responses. The results were visualised using charts. The qualitative open-ended responses were analyzed using thematic analysis. One hypothesis was stated and tested using the Pearson Product Moment Moments Correlation Coefficient.

RESULTS

The results of the data analyses are presented in this section. The research questions and the thanks hypothesis are restated.

Research question 1. To what extent are male and female lecturers in a Nigerian university trained to facilitate online learning?

To the question, "Do you think you have the requisite training to use online instruction?" there were four response options: Yes, Somehow, Maybe, and No. For the purpose of the analysis, simple percentages were used. All "maybe" responses were categorised as NO, while all "somehow" responses were categorised as YES. Detail is presented in Fig. 1. The bar chart shows the percentage of participants who responded YES and those who responded NO. It is evident that those who have the requisite training to use online platforms for teaching were more than those who do not have the requisite training, with slightly more female lecturers than male lecturers reporting being trained.

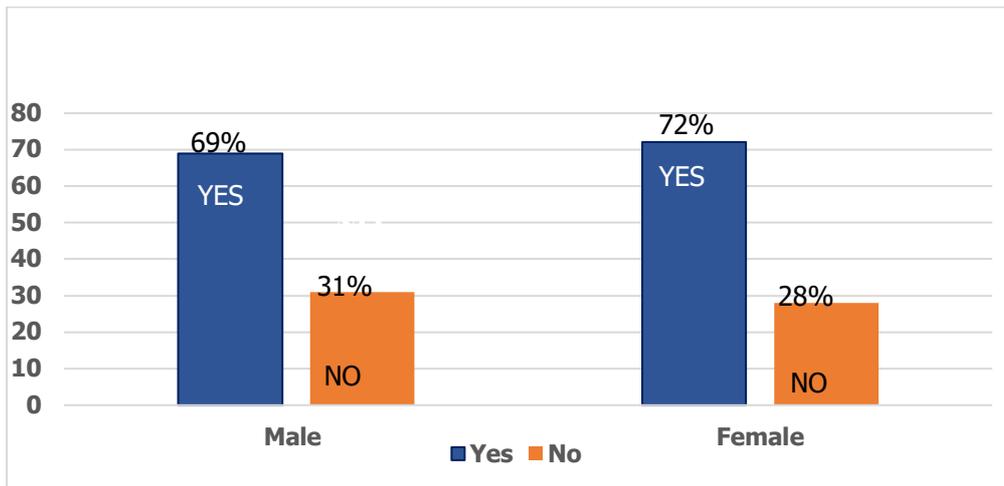


Figure 1. Possession of requisite training for teaching online

RESEARCH QUESTION 2. To what extent did male and female lecturers use the internet for instructional delivery before the Covid-19 era?

The analysis of the data using simple percentages showed that generally 50.6 per cent of the lecturers never conducted online teaching. (See Fig. 2).

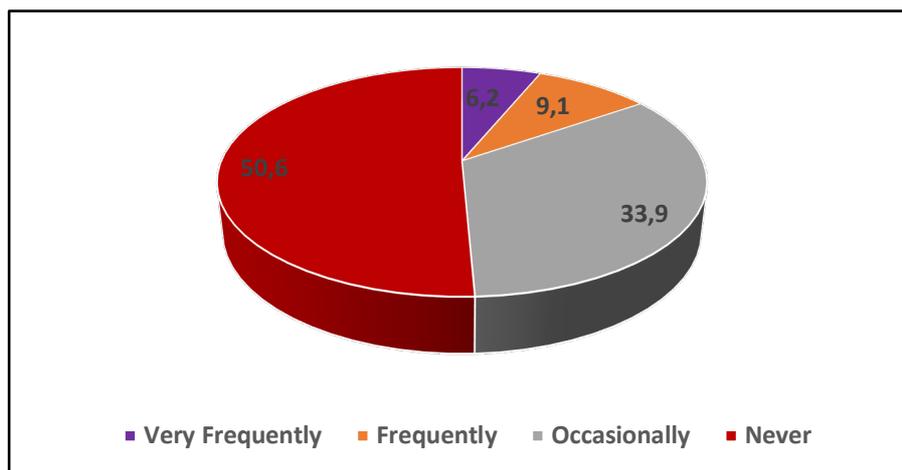


Figure 2 Frequency of using online teaching before Covid-19 era.

A further analysis by gender shows that only 40 per cent of female lecturers participated in online teaching before the Covid-19 era, whereas 57 per cent of male lecturers participated in online teaching. The details are in Fig. 3:

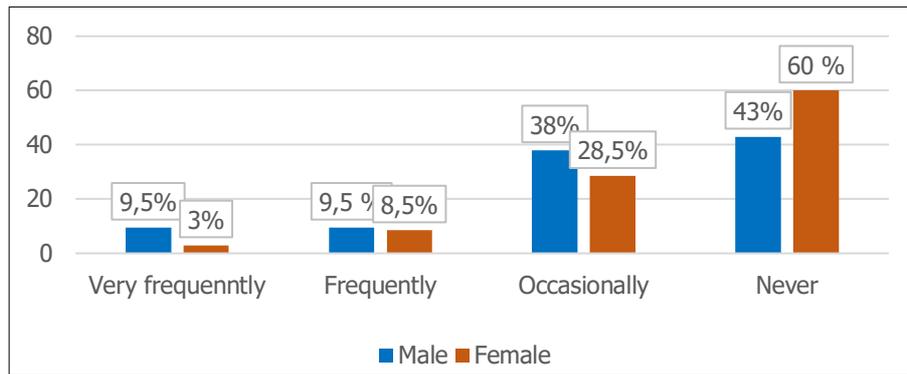


Figure 3. Gender differences in frequency of teaching online before Covid-19 lockdown

RESEARCH QUESTION 3. To what extent is the university ready for online instructional delivery?

To answer Research question 3, the responses were converted to simple percentages. Google Forms does this automatically. From the responses, 48 per cent reported that the institution was not ready at all for online instructional delivery, while 36 per cent reported minimal readiness. However, only about 8 per cent reported optimal readiness. This is visualised in Fig. 4.

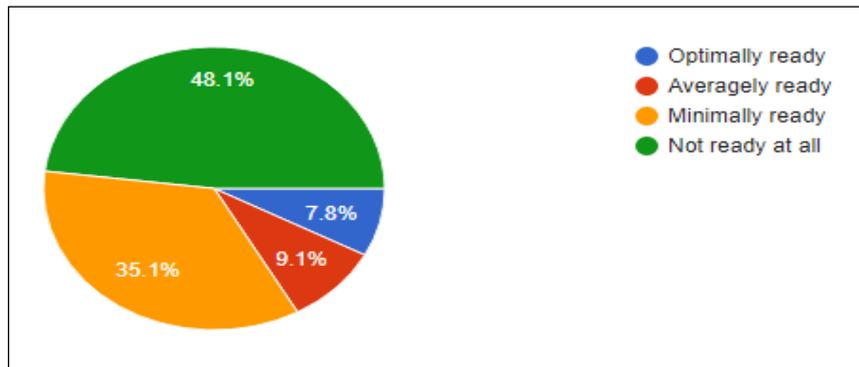


Figure 4. Pie-chart of institutional readiness for online teaching.

The analysis, using simple percentages show that only 7.9 per cent of the participants reported that their institution was optimally ready. Those who said the institution was not ready at all constituted 48.1 per cent.

RESEARCH QUESTIONS 4. To what extent did female and male lecturers teach online during the lockdown?

The result shows that 82 per cent of female lecturers and 81 per cent of male lecturers did not teach online during the lockdown. So, male and female lecturers did not seem to differ much in their participation in online teaching. Less than 10 per cent of the lecturers participated in online instructional delivery. This is visualized in Fig. 5.

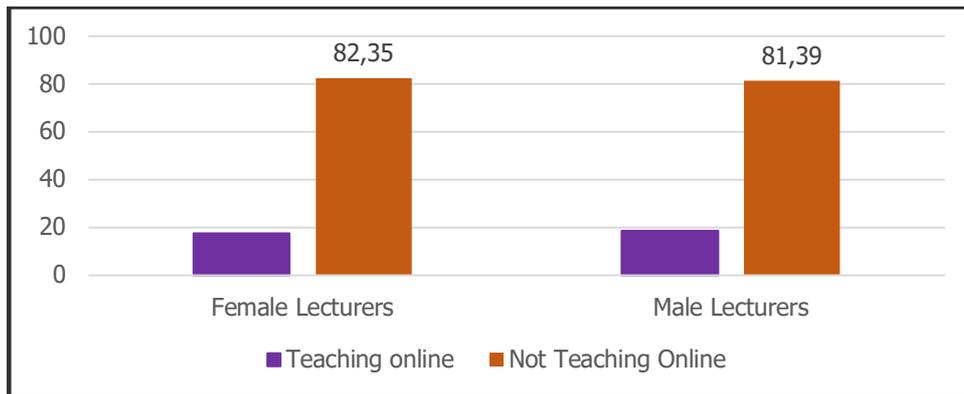


Figure 5. Female and male lecturers' online teaching status during the lockdown

Research question 5. What are the major hindrances to the use of online platforms for instructional delivery in the University?

This question was open-ended and respondents were encouraged to comment freely. The Google form generated csv file was downloaded and saved as an Excel file. The textual responses were copied into Word and each line was numbered using the Microsoft Word menu for line numbering. The researcher read the transcripts carefully line by line, and used colors to highlight similar meaningful phrases. Afterwards, similar expressions were grouped into themes. Then the Text Analyzer online software was used to check the frequency of keywords and phrases. This information was used in visualizing the data and creating a bar chart of the frequency of the occurrence of themes. This is presented in Fig. 6.

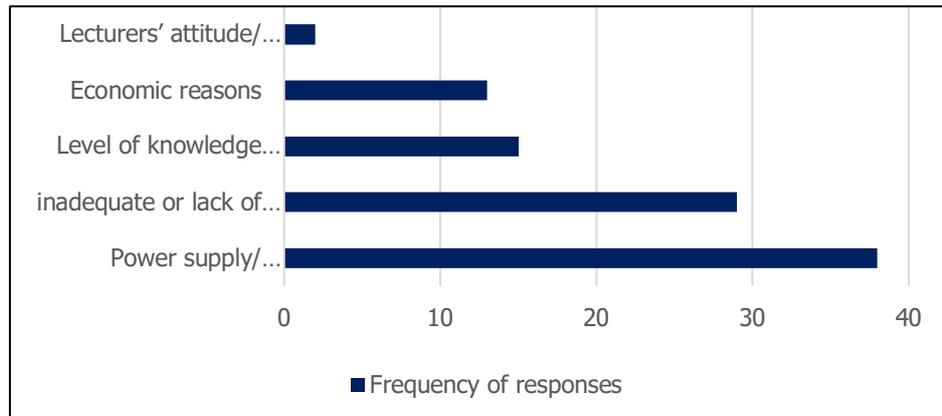


Figure 6. Bar chart of hindrances to online teaching

From the thematic analysis, the most prominent hindrance to lecturers' engagement in online course facilitation was inadequate or lack of electric power supply. The second most mentioned hindrance was inadequate access to or lack of internet connectivity and online infrastructure. Respondents also frequently mentioned lecturers' lack of skills in the use of digital devices and learning management systems. Another factor that hindered lecturers' use of online platforms for teaching was cost of internet bundles. This is understandable because many lecturers are owed several months salaries in Nigeria.

HYPOTHESIS 1

Ho: There is no significant relationship between lecturers' years of experience and frequency of using online platforms for instructional delivery.

H_i: There is a significant relationship between lecturers' years of experience and frequency of using online platforms for instructional delivery.

The Pearson Product Moment Correlational analysis was used to test the hypothesis at an alpha level of .05. The data analysis showed that there is a strong relationship ($r = .79$) between lecturers' years of university teaching experience and frequency of using online platforms for teaching. The relationship is significant since the P -value (.00001) is less than the α . (.05). The detail is presented in Table 1.

TABLE 1. Pearson Product-Moment Correlation Analysis of the relationship between lecturers' years of university teaching experience and frequency of using online platforms for teaching.

Correlates	N=77	Σ	Mean	X Y	$\Sigma(X - M_x)^2$	$\Sigma(Y - M_y)^2$	r	P
X Values		264	3.429					
Y Values		194	2.519	204.857	145.857	163.221	0.7977*	.00001

*Significant @ 0.05

DISCUSSION OF FINDINGS

Since the Covid-19 pandemic had very high level of contagion through physical and social contacts, the globally adopted protocol as recommended by the WHO was social distancing. As the number of cases began to increase, the Nigerian government announced a lockdown on 30th March in major cities. This led to the closure of schools in some cities. However, the federal government did announce the closure of all public universities (University World News, 20th March, 2020). Consequently, academic institutions, in order to keep having learning contacts with their students, migrated to the online platforms for instructional delivery.

This study used an online survey to examine the extent to which lecturers in the Faculty of Education in a public university in Southern Nigeria engaged in distance education using the internet before and during the pandemic. Seventy-seven participants responded to the survey. From the responses, simple percentages were used to answer four research questions, while the Pearson Correlation Coefficient was used in testing one hypothesis.

One of the findings of the study is that the majority of lecturers (nearly equal percentage of female and male) had the requisite training to conduct online teaching. The findings tend to contradict Bassi and Camble (2011), Ojeniyi & Adetimirin (2013) and Obasuyi (2015) who had observed gender disparity in digital literacy in favour of males. However, the finding could be a result of the level of education of the lecturers that provides them with economic leverage to own digital devices and fund internet-based operations. Also, work and research requirements may force women lecturers to upgrade their skills in order to compete well at their workplace.

The study further found that while about 50 per cent of the lecturers never taught online before the pandemic, and about 30 per cent taught only occasionally, extremely few lecturers (10%) did any online teaching during the lockdown. These findings align with Gratz and Looney (2020) who observed a reluctance by faculty to use e-learning. In the Nigerian context, this may have been the consequence of number of factors. First, lack of infrastructure could hinder and discourage the use of e-learning (Adegore & Adegore, 2021; Nwagwu, 2020). Secondly, some students might not have had digital devices to make distance learning possible. Thirdly, there may not have been a need for teaching online since the university did incorporate it in her academic system. Therefore, the few who did so only did it out of personal initiative.

With reference to the small percentage of lecturers who did online teaching, a possible explanation could be the strike by the Academic Staff Union of Universities, a trade union before the lockdown.

Although some lecturers refused to comply with the strike, the national chairman of the Union also had released a memo calling on her members not to teach online as that was unconstitutional (Ogunfowo, 2020). Therefore, the few lecturers who reported teaching online may very well have been non-members of the union or those who also taught part-time in private universities. Another reason may have been the absence of requisite skills. It could also be the lack of online instruction infrastructure, as commented about by the ASUU chairman in his memo (Ogunfowo, 2020). The ASUU chairman had given as one of the reasons why lecturers should not participate in online teaching the absence of e-learning infrastructure in most public universities.

The study also found that about half the participants believed that the university was not ready at all for online teaching, while about 40 per cent believed that the university was only "minimally" ready for online teaching. This finding agrees with Adegore and Adegore (2021) and Nwagwu (2020) who observed inadequate e-learning infrastructure as a barrier to the application of e-learning in universities. Infrastructure inadequacy in Nigerian universities generally has been one of the major reasons for the industrial disharmony between lecturers and the Federal Government of Nigeria. Therefore, even when lecturers are willing to teach online, there may be no ICT infrastructure to realize such willingness.

From the only hypothesis that was tested, using the Pearson correlational analysis, a high positive relationship was found between years of university teaching experience and frequency of undertaking online teaching before the pandemic. The positive relationship implied that the more the number of university teaching experience, the more frequently the lecturers used online instructional delivery. The finding agrees with Zalat, et al (2021) and Veletsianos. (2021) who found that teachers experience was one of the most important determinants of teachers teaching online. In their case, however, it seemed that the younger academics were more likely than the older ones to utilise online instruction because of the tendency for younger people to be more adept at the use of digital technologies (Zalat et al, 2021). A possible explanation could be that more senior academics may have more opportunities to be engaged as visiting lecturers with foreign universities or indigenous private universities where learning management systems would be available financial. Perhaps, the more senior academics, by virtue of their bigger salaries may be able to own digital devices like laptops, modem, routers and sustain internet-dependent teaching, consequently.

From the qualitative data analysis, the following were the key hindrances to e-learning in the university: electricity power supply, inadequate or lack of internet connectivity and infrastructure, level of knowledge by lecturers, cost of ICT devices and digital technologies, and lecturers' attitude/ resistance to change. The findings syncs with the findings of Zalat et al (2021). The authors found that the greatest barriers to e-learning were poor internet connectivity inadequate computers, and lecturers inexperience, among others.

LIMITATION OF THE STUDY

Since the study was conducted in one Faculty in one university, it might be difficult to generalize the findings to other universities. Moreover, the sample was rather small. Perhaps a larger and more diverse sample would have made generalization more feasible.

CONFLICT OF INTERESTS

The researcher reports no conflict of interest. This research was self-sponsored.

CONCLUSION

The study investigated university lecturers' deployment of e-learning during the Covid-19 pandemic. The study found that although the majority of the lecturers had requisite training to conduct online teaching, very few actually did so before and during the Covid-19 lockdown. Gender difference in the possession of requisite training was not significant, but a slightly more disparity in favor of male lecturers was found in the use of online platforms for teaching before Covid-19 lockdown. However, a strong positive relationship was found between lecturers' years of university teaching experience and engagement in online teaching before the Covid-19 lockdown. In addition, participants believed that their institution is not sufficiently ready for online teaching.

It is, therefore, recommended that university lecturers explore available opportunities to acquire and update their online facilitation skills. e-Merge Africa in collaboration with the University of Cape Coast, South Africa provides free training on online course facilitation. Also, universities as well as government should explore alternative and sustainable sources of power supply. In addition, the Nigerian government should subsidize the cost of digital devices and internet bundles so that Nigerian students and lecturers could have easier and less expensive access to the internet and related technologies for online learning.

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BIODATA and CONTACT ADDRESSES of the AUTHOR



Dr. Alexander Essien Timothy is a senior lecturer in the University of Calabar, specializing in English Language Education. Before joining the University, he had taught English Language and Literature – in – English at the secondary school level. He is the Deputy Director, Centre for Educational Services in the University. He heads a postgraduate research team of five: two PhDs and three masters. His research interests include digital literacy, reading instructional strategies and gender responsive pedagogy.

Alexander Essien Timothy (Dr)
Arts Education Department,
University of Calabar,
Calabar,
Nigeria.
+2347037731963
profalext@gmail.com