Perception of Educational Stakeholders on Utilization of e-Learning Technology for Quality Instructional Delivery in Universities in Nigeria

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Abstract: The study was conducted in Rivers State, South-South, Nigeria. Descriptive survey design was adopted for the study, which comprised 168 subjects (44 lecturers and 124 students). Two research questions were posed by the researchers to guide the study. The study used questionnaires to elicit information from respondents. Mean and standard deviation were descriptive statistical tools used to answer the research questions. The findings of the study revealed, amongst others, that many universities in Nigeria lacked digital facilities for quality e-teaching and learning and, again, university lecturers and students required core digital skills for effective e-learning. Based on these findings, it was recommended, amongst others, that the Nigerian government, in collaboration with university authorities, should ensure adequate provision of ICT equipment and facilities in universities for quality e-teaching and learning. Furthermore, adequate ICT training programmes should be set up for the training of lecturers and students in digital technology in order to realise effective e-learning in the Nigerian university system.

Keywords: ICT facilities, e-teaching, e-learning, university education, digital skills development.

Introduction

All over the world, education is regarded as the bedrock of meaningful development in any society. Education is seen as an aspect of socialization which involves the acquisition of knowledge and learning of skills capable of shaping beliefs and moral values. According to Castle (as cited in Adiele et al, 2010), education is all that happens to us from the day we are born to the day we die. Education, therefore, could be seen as the process by which every society attempts to preserve and upgrade the accumulated knowledge, skills and attitudes in its cultural setting and heritage in order to foster continuously the well-being of mankind and guarantee its survival against the unpredictable (Owo, 2020).

According to the national policy on education (NPE) (Federal Republic of Nigeria, 2013), formal education in Nigeria is categorised as universal basic education, secondary education and tertiary education. All educational programmes administered in monotechnics, polytechnics, colleges of education and universities are referred to as tertiary education. This implies that all formal educational programmes beyond the basic and secondary education in Nigeria, including university education, are referred to as tertiary education.

All over the world, universities are tertiary institutions established to offer quality educational training to citizens for their all-round development. Thus, universities exist to teach, conduct research and engage in community services (Ogbulogo, George & Olukanni, 2014). A university is an educational institution established primarily to champion human capacity development through quality teaching, research and community services (Owo & Ajie, 2020). According to Amadi and Urho (2015), the major dream of any university is to become a pace-setting institution in learning, character building and service to humanity with a duty to produce competent, reliable and creative graduates of high moral standards in society as well as championing a complete development of men and women in an enabling environment through appropriate teaching, research and service to humanity. Similarly, Owo and Ajie (2020) opined that a university is an educational institution established primarily to champion human capacity development through quality teaching, research and community services. Hence, a university is a citadel of excellence in teaching, learning and research for human and societal development.

Universities contribute significantly to the development of society in all aspects and ramifications. Universities are usually in the lead in the event of any social, economic and political challenges, by using the power of research to focus on capacities that will promote human development as well as solving existential problems (Oyeniran et al, 2020).

Instruction in universities is delivered to students by university teachers (lecturers). A lecturer is someone who works in a tertiary institution as an academic staff member. A lecturer is an academic staff member within a programme with a minimum qualification of a first degree not below second class, lower division (Bakare, 2014). A university lecturer is one who teaches and conducts research in universities and other research institutes as well as engaging in community services to foster societal development (Owo & Ajie, 2020). A lecturer, in the statement of Encarta (2009), is a teacher in a college or university who teaches students and carries out research activities to solve identified problems in society.

Lecturers, as chief facilitators of the educational processes at tertiary educational level, are expected to employ measures that would impact students' lives positively while engaging in their normal classroom activities (Bakare, Onah & Okereke, 2018). Due to the demanding nature of the job of university lecturers, it becomes necessary for them to be more flexible, intelligent, unassuming, resourceful and competent so as to render their services diligently. Quality university teaching and learning controlled by competent lecturers leads to the production of competent graduates.

Furthermore, Bakare, Onah and Okereke (2018) opined that the rate at which university students attain academic excellence therefore depends primarily on the mode of teaching, personality of lecturers and the teaching methods and strategies adopted by lecturers. It is worth noting, therefore, that when university teachers are well-grounded in their various areas of specialization, adopt appropriate modes of instruction, are knowledgeable in the usage of modern educational technology tools for instructional delivery as well as taking part in continuous professional development for career advancement and embarking on quality research, they will be well-positioned to deliver effective lessons to students capable of creating a positive impact using flexible modes of instruction, such as face-to face interactions, on-line teaching, and open-distance learning among others. A 21st-century university teacher, therefore, is expected to be conversant with all modern instructional

delivery modes applicable to university education across the globe, so as to apply them appropriately when situations demand global best practices.

Statement of the Problem

Due to rapid innovations in digital technology across the world, many universities adopt e-learning and e-teaching for instructional delivery in their institutions to complement face-to-face interactions. According to Owo and Ajie (2020), e-learning reduces travel time and the cost of infrastructural development in terms of buildings. Similarly, Arkorful and Abaidoo (2014) posited that the cost benefit of e-learning in training students is lesser than that of physical (face-to-face) contact after carefully considering some factors, such as the number of students trained, distance to be travelled, and time of training among other factors. In the same vein, Guragain (2016) posited that the value of face-to-face class contact content development, distribution and maintenance cost, are exclusively high as compared to e-learning which is of lower cost. Thus, e-learning usage tends to solve educational challenges especially at a time such as the COVID-19 pandemic era, when no physical contact is permitted among teachers (lecturers) and students (learners). Despite the prospects of e-learning, some university teachers and students do no not possess the ICT skills needed to achieve an effective online university education (Alexander et al, 2017; Wineburg et al, 2016). Furthermore, Owo and Ajie (2020) posited that one major constraint to quality e-learning education in Nigeria is lack of adequate ICT skills acquisition by university lecturers and students. Lecturers need ICT skills to assist learners to develop proficiency in using e-learning platforms for quality learning. Poor Internet connectivity and the high cost of data subscription and the high cost of e-learning training facilities constitute some major barriers to e-learning usage in Nigerian universities (Owo & Ajie, 2020; Akpomie, et al, 2020). This missing link, therefore, informed the authors' quest to carry out this study, entitled "Perception of Educational Stakeholders on Utilization of e-Learning Technology for Quality Instructional Delivery in Universities in Nigeria".

Purpose of the Study

In spite of the huge benefits derivable from using online education in university education, many universities in Nigeria are yet to tap into the vast opportunities associated with it. The reasons may not be far-fetched, as most of the institutions may not have the e-learning facilities needed to kick-start such laudable educational programmes. Additionally, the issue of poor ICT-skills development by some lecturers and students in universities as well as poor power supply are considered major setbacks in the use of e-learning technologies for quality instructional delivery in Nigerian universities. Consequent upon the foregoing, this observed missing link informed the researchers' desire to conduct this study entitled "Perception of Educational Stakeholders on the Utilization of e-learning Technology for Quality Instructional Delivery in Universities in Nigeria".

Objectives of the Study

Specifically, the study sought to fulfill these two objectives:

1. Determine the perception of lecturers and students of the ICT facilities available for quality instructional delivery via e-learning in universities in Nigeria.

2. Determine the perception of lecturers and students of the adequacy of ICT skills development among teachers and learners for the of utilization e-learning technology in universities in Nigeria.

Research Questions

1 What are the perceptions of lecturers and students of the adequacy of ICT facilities available for quality instructional delivery via e-learning in universities in Rivers State, Nigeria?

2 What are the perceptions of lecturers and students of the adequacy of ICT skills development among teachers and learners for the utilization e-learning technology in universities in Nigeria?

Literature Review

Traditional Mode of Teaching (Face-to-Face Interactions)

From its inception, the Nigerian university system used face-to-face interactions as the chief mode of instructional delivery. Here, both lecturers and students meet in the classroom where the former deliver educational instructions to the latter for a meaningful learning exercise. In any face-to-face interactive class, students are able to observe their teachers while teaching using words, actions and non-verbal clues (body language) when necessary to transmit information to them. Sometimes, this mode stimulates easy understanding and quick accessibility to primary educational information.

However, other researchers argue that face-to-face interaction causes students to depend solely on their teachers for every bit of information needed to progress academically, thereby, causing them to become academically lazy. In the words of Benson and Brack (2009), recent development in educational technologies provides diverse opportunities for students to collaborate, access information and interact with educational content and materials electronically for their individual empowerment. The emergence of information and communication technology (ICT) and its application in education empowers teachers (lecturers) to advance from traditional face-to-face classroom interactions and activities to online classrooms, and also to bring in some aspects of online activities in the traditional classroom that encourage e-teaching and e-learning (Mohammad, 2102). E-learning, therefore, is seen by some educational technology experts as crucial since it plays complementary roles to face-to-face classroom interactions.

Corona Virus Pandemic and the Need for E-Learning Application in Universities in Nigeria

The swift appearance of an infectious disease known as corona virus (COVID-19) has forced educational institutions, especially universities, around the world to adopt the use of e-teaching and e-learning for instructional delivery. According to Adeoye, Adanikin and Adanikin (2020), the fast advent of COVID-19 posed some negative effects on many sectors of the Nigerian economy including the education sector, as academic activities were paused by the Nigerian Federal Ministry of Education in order to restrict further spread of the virus in educational institutions in the country.

The United Nations Education Scientific and Cultural Organization (UNESCO) (2020) reported that the global closure of educational institutions has affected over 91% of the student population across the globe. The negative effects of coronavirus (COVID-19) were felt by all educational stakeholders in Nigeria including parents, teachers, students and administrators in primary, secondary and

universities as academic sessions and programmes were disrupted after the coronavirus was declared a global pandemic by the World Health Organization on March 11, 2020. Universities around the world, including those in Africa, agreed to seek better ways to cope and adapt to the academic changes occasioned by the pandemic (Adeoye, Adanikin & Adanikin, 2020).

Meanwhile, as the pandemic affected the academic calendars of universities, all forms of face-to-face interactions in schools were prohibited by the Nigerian government and, consequently, lecturers and students were compelled to seek an alternative means of carrying out teaching and learning activities that would not warrant physical contact. Thus, the use of e-teaching and learning as an alternative mode of instruction was adopted by some universities in Nigeria. Thus, the arrival of corona virus has caused educational stakeholders in Nigeria to embrace and appreciate electronic-teaching and learning also known as online education. Consequently, the present development has contributed to the advancement of online learning in Nigerian institutions mainly at tertiary level.

E-Teaching and E-Learning Technologies Application in Nigerian Universities

The use of information and communication devices, systems and tools by teachers for meaningful teaching is known as e-teaching. E-teaching encompasses the use of digital technology in presenting a concept, placing the concept in various contexts, creating links with existing knowledge and leading discussion that probes students' understanding of the concept and its context (Nakajima & Hori, 2016). According to Naidu (2006), e-teaching is commonly referred to as the use of networked information and communication technology for teaching by the teacher. Similarly, Carmona (2006) posited that e-teaching is the use of information and communication technologies (ICTs) to enhance the art of teaching.

E-teaching is a platform enabling teachers and students to collaborate and interact in real time (synchronous) and asynchronous modes (Economy, Finance, Technology, 2009). E-teaching simply involves the use of computers, the Internet and other electronic devices and media to transfer knowledge and skills from a teacher to learner(s). E-teaching is basically fun and attention holding especially when used to teach young people. E-teaching in higher education covers multiple possibilities, including the interactions between the learners, teacher and a growing range of technologies available (Donnelley & McSweeney, 2009). E-teaching enables students to exercise full control of their own learning. Bakare, Onah and Okereke (2018) reported that in e-teaching, the teacher serves as an interface between e-teaching facilities and the learners for meaningful academic instruction.

Some researchers are of the view that the integration of technology into instruction, if appropriately implemented, would bring about a positive impact on students' academic achievements. Computers, electronic white boards, internets, social media platforms, among others are vital tools and avenues adopted in the transmission of information in e-teaching. These devices are effective media in e-teaching. Similarly, Glover and Miller (2002) stated that one important feature of e-teaching is its similarity to the multi-media, sensory and faceted styles which makes it a standard for multi-literacy teaching and learning.

Furthermore, McCormick and Scrimshaw (2001) remarked that e-teaching makes reliable teaching contents readily available everywhere and every time at an affordable rate. Also, Allen and Seaman (2008) said that e-teaching enables a lecturer to repeat one lesson to different groups of students at

different times and locations. It also streamlines the delivery cycle for lecturers and lowers expenses incurred at each period of their service delivery. In the view of Nagy (2008), e-teaching enables a teacher to reach students in different schools at their locations in his or her teaching and practice using relevant digital devices and platforms.

The essence of e-teaching is to motivate and direct teachers to teach cheerfully and effectively (Nakajima & Hori, 2016). On their part, Bakare, Onah and Okereke (2018) stipulated that the e-teaching process and application include web-based teaching, computer-based teaching, video conferencing, teleconferencing and digital collaboration. Diverse approaches and platforms could be used to deliver e-teaching instructions. For instance, e-teaching could be delivered through the Internet, audio-tape, satellite television, CD-ROM, YouTube, video tapes, social media platforms, etc. Most institutions of higher learning across the globe adopt e-technologies primarily to serve complementary purposes and not as substitutes for face-to-face interactions or for intensive web-enhanced teaching (Bates & Sangra, 2011; Guri-Rosenblit, 2010; Guri-Rosenblit & Gros, 2011). E-teaching works simultaneously with e-learning.

E-learning refers to the act of transmitting and receiving educational instructions by students for knowledge accumulation via electronic media aimed at providing a platform for quality educational contributions that can advance academic pursuits (Owo & Ajie, 2020). According to Adeoye, Adanikin and Adanikin (2020), e-learning specifies an electronic method of learning associated with online learning in an interactive interface at the convenience of both the learners and lecturers. Furthermore, Oyeniran et al, (2020) view e-learning as the introduction of new communication technologies in higher education in Nigeria for positive interactions between lecturers and students for progressive educational activities at different locations.

According to Akpomi, et al, (2020), e-learning encourages students' knowledge upgrading without difficulty, since they can access educational materials online right in the comforts of their residence. Thus, the global implementation of digital technologies in higher educational institutions are directed towards students' active learning (Alexander et al, 2017; Andrews & Haythornthwaite, 2009; Bates & Sangra, 2011; Guri-Rosenblit, 2009; Harasim, 2000; Johnson et al, 2016).

Although we cannot rule out the need for traditional education in higher education, e-learning has numerous benefits such as continuous learning outside the school campus, sharing of academic experiences from peers and colleagues, easy access to important educational information at any point in time, and quality research among others. According to Eze, Chinedu-Eze and Bello (2018), e-learning education is concerned with the all-inclusive integration of modern telecommunication equipment and ICT resources into the education system for quality teaching, learning and research. Consequently, e-teaching and e-learning usage in Nigerian universities are channeled towards the establishment of an educational digital framework, in which both teachers and students interact and communicate effectively for the purpose of continuous learning and research in the Nigerian university system for quality human capacity development. While e-learning focuses on the students' academic achievements through personal involvement and commitment, e-teaching is directly used by teachers to pass academic instructions to learners.

Theoretical Framework

This study which is titled "Perception of Educational Stakeholders on the Utilization of e-learning Technology for Quality Instructional Delivery in Universities in Nigeria" was anchored in the theory of connectivism. Connectivism theory is considered most appropriate to the present study as it involves the integration of digital technologies into educational pedagogy with a view to making teaching and learning more vibrant, accessible and cost-effective. Connectivism theory is one that explains the utilization of technology in education. It is a pedagogical approach that afford learners the opportunity of connecting with one another via technologies, internet networks and teamwork tools. Connectivism is an epistemological approach grounded in the interactions within networks (Downes, 2012).

Thus, since connectivism theory sees learning as a process of connecting information sources or specialised nodes for knowledge acquisition and information sharing, it, therefore, has direct application to the present study. Downes studied connective knowledge and characterised it as interactive knowledge of a connection within a network (Downes, 2005). Connectivism, therefore, is seen as a network theory for teaching and learning in a connected world (Bell, 2009). Siemens (2004) suggested connectivism as a learning theory for the digital age. Siemens further posited that connectivism is a theory that succeeds the earlier learning theories of behaviourism, cognitivism and constructivism.

The concept of network is prominent in the theory of connectivism that characterises knowledge as a flow through a network of humans and non-humans (artefacts). A network comprises connections between entities (nodes), where the nodes can be individuals, groups, systems, fields, ideas, resources or communities. Online learning has a long history reaching back to the first online technologies such as electronic mail and computer conferencing systems, and this formed the basis of modern digital education also known as e-learning. Siemens (2004:3) summarises the main principles of connectivism thus:

- Learning and knowledge rests in diversity of opinions.
- Learning is a process of connecting specialised nodes or information sources.
- Learning may reside in non-human appliances.
- Capacity to know more is more critical than what is currently known.
- Nurturing and maintaining connections is needed to facilitate continual learning.
- Ability to see connections between fields, ideas, and concepts is a core skill.
- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
- Decision-making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.

Consequently, Siemens and Downes further stated that connectivism proposes that knowledge is distributed across a network of connections, and, therefore, learning consists of the ability to construct and traverse those networks. The attractiveness and accessibility of the theory of connectivism makes it a good option for structuring innovation by educators in their practice. One implication of students

becoming connected learners is that learning will neither be confined to the physical classroom nor to the virtual classroom, within the institutional virtual learning environment (Barnett, et al, 2013). This implies that students and teachers do not necessarily need to be in the same place for teaching and learning to take place. Students can be engaged as they acquire the 21st-century learning skills that are needed to make effective use of technologies that are emerging for use within classrooms and the workplace (Educause, 2008). Another benefit of connectivism, according to Cormier (2008), is that it permits a community of people (working with learning technologies) to legitimise what they are doing. Educators wishing to extend the use of social media within their practice can refine and spread knowledge more quickly through membership of multiple online communities. Another implication of connectivism is that educational resources are open and available to use, often with Creative Commons Licenses that permit sharing, creating and remixing media (Bell, 2009).

According to Bell (2009:7), the following six steps will help any educator/teacher who wishes to adopt connectivism theory to achieve effective results in any form of online education:

- Follow the blogs of those who innovate/advance with educational technologies.
- Experiment (within your comfort zone) with web services and tools that might enrich teaching and learning in your practice.
- Use, publish and share resources through blogs, wikis, photo and video sharing sites.
- Encourage students to use the web for scholarly resources — being critical and selective, and attributing sources.
- Assign students, activities that empower effective use of media to report process and, where appropriate, outcomes.
- Make explicit the concept of connectivism in student support activities so that they can exploit it in their own independent learning.

Thus, from the foregoing, we can truly see that the theory of connectivism had a direct bearing with the present study, which is anchored in the perception of educational stakeholders on the utilization of e-teaching and learning for university education in Nigeria. Thus, for lecturers and students to actively apply digital technology quality instruction and learning interactions in Nigerian universities, the requisite ICT (digital) facilities must be made available in the universities. Also, both lecturers and students must possess adequate communication technology skills capable of enhancing their operational efficiency in digitalised learning for knowledge acquisition and transfer through interconnected systems.

Research Framework

In this research, the following ICT facilities were considered: PC computers, laptop computers, Internet accessories and services, printers, scanners, e-library, ICT centres, overhead projectors, webcam, interactive board, video conferencing media, wireless technology, e-mailing platforms, computer laboratories, iPads, power supply plant, A-4 paper, light pen, and wireless microphones, among others. Similarly, the ICT skills considered to be vital in the utilisation of e-learning technologies in instructional delivery in Nigerian universities include general computer appreciation skills, data analytical skills, e-conferencing skills, online seminar presentation skills, skills in the use of MS Word, MS Excel, MS PowerPoint, MS Access, browsing skills, photo shopping skills, e-library

skills, blog development skills, social media and networking skills, Zoom and Google Scholar application skills, document scanning, conversion and resizing skills, among others.

Methods

Research Design

This study adopted descriptive survey design. In descriptive design, as in this study, there was no manipulation of the independent variables (Akaninwor, 2014).

Sampling and Sampling Techniques

Purposive sampling was used to select a total of 34 lecturers and 138 final-year students of technology education from Rivers State University, Port Harcourt and Ignatius Ajuru University of Education, Rumuolumeni, Port Harcourt, Nigeria as the sample of the study.

Data Collection Instruments

The research instrument for data collection was a 25–item, self-structured questionnaire designed by the authors and titled "Perception of Educational Stakeholders on E-learning Utilization in Universities Questionnaire (PESEUUQ)", constructed on a 5-point mean rating scale of Very Adequate (VA), Adequate (A), Undecided (U), Inadequate (IA) and Very Inadequate (VI) with corresponding numerical values of 5, 4, 3, 2 and 1, respectively. The questionnaire was made up of two parts. Part one elicits information on the personal data of respondents as well as their categories, while part two contains direct structured questions on ICT facilities present in Nigerian universities as well as ICT skills possessed by lecturers and students in Nigerian universities for quality e-learning.

Validity of the Instruments

The questionnaire was face and content validated by two experts in technology education from Nnamdi Azikiwe University, Awka, Anambra State and University of Uyo, Akwa Ibom State, Nigeria.

Reliability of the Instrument

The reliability of the instrument was ascertained via test re-test method. Simple Random Sampling Technique was used to select 12 technology education lecturers and 16 technology education students from the population which are not part of the sample. Copies of the instrument were administered to the 12 lecturers and 16 students. After two weeks' interval, the same instrument was re-administered to the same group. The initial test and re-test scores of the sample were correlated using Cronbach's Alpha method. Reliability coefficients of 0.94 and 0.78 respectively were established for the two sections of the instrument. Thus, these figures proved that the instrument was reliable.

Data Collection Procedures

A total of 172 copies of the research instrument (questionnaire) were distributed to the respondents by the researchers and two research assistants. Out of the total questionnaires administered, 168 (44 lecturers and 124 students), representing 97.7%, were retrieved from the respondents after being duly filled out. The research assistants helped the researchers in distributing the questionnaire as well as retrieving same after being duly filled out by the respondents.

Results

Data for answering the two research questions were analysed using the Mean and standard deviation. The decision to accept or reject any item in the questionnaire was based on the Mean rating of the item. Analysing the research questions, any item in the questionnaire with a calculated Mean value equal to or greater than 3.00 was accepted, while any item with a calculated Mean value less than 3.00 was rejected. Standard deviation values that were close or wide apart were used to determine homogeneity in the responses of the respondents.

Research Question 1: What are the perceptions of lecturers and students of the adequacy of ICT facilities available for quality instructional delivery via e-learning in universities in Nigeria?

Table 1: Perceptions of Lecturers and Students on the Adequacy of ICT Facilities in Universities

S/N	Item Statement	Lecturers			Students		
		$\overline{X}_1$	SD₁	Decision	$\overline{X}_2$	SD₂	Decision
1	Universities in Rivers State have well-equipped e-libraries.	3.76	0.58	Agree	4.08	0.97	Agree
2	Universities in Rivers State have functional ICT centres.	4.21	0.91	Agree	3.72	0.81	Agree
3	Universities in Rivers State have steady internet services.	2.48	0.81	Disagree	2.11	0.95	Disagree
4	Universities in Rivers State have computer laboratories.	4.22	0.79	Agree	3.94	0.83	Agree
5	Universities in Rivers State have adequate video conferencing media.	3.04	0.63	Agree	2.97	1.05	Disagree
6	Universities in Rivers State have/do not have constant power supply	4.01	0.77	Agree	3.26	0.91	Agree
7	Universities in Rivers State have interactive board.	2.65	0.74	Disagree	2.82	1.02	Disagree
8	Universities in Rivers State have public address systems.	3.68	1.14	Agree	3.96	1.05	Agree
9	Universities in Rivers State have computer accessories such as power cords, scanners, printers, flash drives, etc.	3.53	0.88	Agree	4.06	1.11	Agree
10	Universities in Rivers State have an adequate number of overhead projectors.	2.32	1.30	Disagree	2.88	0.63	Disagree
11	Universities in Rivers State have functional e-mailing platforms.	4.74	1.08	Agree	4.26	1.24	Agree
12	Universities in Rivers State have a well-equipped computer studio.	2.41	1.35	Disagree	2.24	1.03	Disagree
	Grand Mean and Standard Deviation	**4.11**	**1.10**		**4.03**	**1.16**	

Source: *Researchers' Field Survey, 2020.*

Table 1 shows that both lecturers and students believed that universities in Nigeria have adequate computer laboratory, e-library, public address systems, and functional e-mailing platforms. This is seen from the Mean responses of both categories of respondents which are above the cut-off Mean of 3.00. Similarly, both lecturers and students were of the view that universities lack a constant power supply, Internet services, overhead-projectors, a computer studio, and interactive boards, among others. This was evidenced by the Mean of these items, which fell below the cut-off Mean of 3.00. On the other hand, the lecturers and students differ in their views about the availability of e-conferencing media in universities in Nigeria. While lecturers responded positively with an average Mean of 3.04, the students responded negatively with an average Mean of 2.97.

Research Question 2: What are the perceptions of lecturers and students on the adequacy of ICT skills development among teachers and learners for the utilization e-learning technology in universities in Nigeria?

Table 2: Perceptions of Lecturers and Students on the Adequacy of ICT Skills Development among Teachers and Learners

S/N	Item Statement	Lecturers			Students		
		$\overline{X}_1$	SD$_1$	Decision	$\overline{X}_2$	SD$_2$	Decision
1	I present academic seminars online.	3.76	0.83	Agree	2.74	0.67	Disagree
2	I participate in e-conferencing.	4.21	0.98	Agree	2.40	0.93	Disagree
3	I use computers for file formatting and document preparations.	3.88	0.81	Agree	4.06	0.89	Agree
4	I use computers for mathematical computations and data presentations.	4.15	0.78	Agree	4.65	0.71	Agree
5	I use computers for browsing and information gathering.	3.94	0.89	Agree	4.84	1.05	Agree
6	I actively participate in online group discussions platforms like blogs.	3.32	0.77	Agree	4.26	0.92	Agree
7	I use interactive boards for information sharing and discussion.	2.65	0.98	Disagree	2.82	1.22	Disagree
8	I can do photo-shopping and file transfers as well as document sharing.	2.78	1.14	Disagree	3.96	1.05	Agree
9	I send mails electronically to people.	4.53	1.24	Agree	4.46	1.23	Agree
10	I use educational platforms like Academia, Research Gate, Google Scholar, etc.	3.42	1.15	Agree	2.73	1.08	Disagree
11	I make good use of social media for learning and information sharing.	3.84	1.09	Agree	4.66	1.24	Agree
12	I use the Internet for online education and skills acquisition.	3.41	1.35	Agree	3.79	1.13	Agree
13	I can perform window operations on personal computers and laptops.	3.92	0.88	Agree	4.22	1.05	Agree
	Grand Mean and Standard Deviation	**4.78**	**1.23**		**4.96**	**1.32**	

Source: *Researchers' Field Survey, 2020.*

Table 2 reveals that both categories of respondents reported that they use computers for document preparation, mathematical computations, e-mailing, browsing and online discussions, and social media interactions, among others. This was seen in their Mean scores, which were above the criterion Mean of 3.00. Both groups of respondents also stated that they never use interactive boards for teaching and learning as seen in their Mean scores of 2.65 and 2.82, respectively.

However, they share contrary views concerning online seminars, e-conferencing, photo-shopping, educational platforms such as Google Scholar, Academia, Research Gate, Mendeley, etc.

Discussion

Availability of Information and Communication Technology Facilities in Nigerian Universities

The finding of the study, according to Table 1, reveals that both lecturers and students agreed that universities in Rivers State, Nigeria have effective e-libraries, functional information and communication technology centres, computer laboratories, public address systems, and e-mailing platforms among other ICT facilities. Thus, the result in Table 1 reveals that there is a bond between ICT facilities availability and usage in Nigerian universities. Consequently, both the lecturers and students believed that digital facilities are needed for effective online education in Nigerian universities. This finding agrees with Adeoye et al (2020) who stated that e-teaching and learning processes and application include Web-based teaching, computer-based teaching, video conferencing, teleconferencing and digital collaboration and, as such, would require that these digital facilities be available in universities for effective online education, which could be delivered via Internet; audio-tape; satellite television and CD-ROM. On the other hand, the finding, according to Table 1, was in contrast with Adeoye, Adanikin and Adanikin (2020) who posited that Nigerian universities lack an adequate power supply and other ICT facilities, which adversely affect e-learning. Thus, the Nigerian government and universities management should ensure an adequate supply of ICT facilities in universities as no effective e-learning (online education) activity can thrive without these facilities.

Information and Communication Technology Skills Development among University Lecturers and Students

Table 2 indicates that both lecturers and students lacked ICT skills in universities in Rivers State, Nigeria. Thus, the inadequate possession of ICT skills by lecturers and students negatively affect the use of e-learning platforms for instructional delivery in Nigerian universities. This finding agrees with Adeoye et al (2020) who submitted that one major challenge facing e-learning in Nigeria is the inability of lecturers to assist students to develop the requisite digital skills and training needed to make e-learning platforms effective, owing to their poor ICT skills development. Similarly, this finding corroborated the views of the Institute of Education, University of Nigeria, Nsukka (2013), which reported that the current trend of globalisation requires that university lecturers need to be ICT-compliant so as to produce graduates with skills and competencies needed in a digital workplace. Thus, since the theory of connectivism is preferred to other educational theories owing to its unrestricted accessibility to information and knowledge acquisition for manpower development, there is a great need for university lecturers and students to develop skills in ICT as without these digital technology skills, electronic teaching and learning will not thrive in the Nigerian university system.

Conclusion and Recommendations

E-teaching and e-learning are effective avenues for achieving online instructional delivery and interactions among lecturers and students in universities across the globe, especially during long school closures. Thus, it is important that universities in Nigeria adopt e-learning to complement the face-to-face interaction mode for quality teaching and learning, since the former provides unrestricted access to vast educational resources available on the World Wide Web, and it can actually boost human capacity development among educational stakeholders including university teachers and students, as learning can take place anywhere so long as Internet connectivity is established.

Based on the findings of the study, it was recommended that both the government and university authorities should provide adequate ICT facilities as well as engage in continuous professional development of lecturers for quality e-learning in Nigerian universities.

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