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Adopting e-learning technology as a mode of instruction: How prepared are tertiary institutions in Cross River State, Nigeria?

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Abstract

This study investigates the level of preparedness among tertiary institutions for adopting e-learning as a mode of instruction in Cross River State, Nigeria. This study investigated institutional preparedness to adopt e-learning mode instruction based on the following indices: availability and accessibility of e-learning facilities, staff acquisition of e-learning skills, institutional provision for staff e-learning needs and institutional maintenance of e-learning facilities. This study adopted a descriptive survey research design and data was collected from 400 lecturers from the four tertiary institutions in Cross River State. The validated instrument was titled "Preparedness of Tertiary Institutions for E-Learning Technology Instruction Mode Questionnaire" (PTIETIMQ)." Descriptive statistics, percentages, mean and standard deviation) were used to answer the research questions while the population t-test of one sample mean was used to analyze the hypotheses. The results obtained from the analysis showed that some technologies required for implementing e-learning modes of instruction were mostly unavailable. However, the few available ones were inaccessible due to their disproportionate ratio to the student population and poor maintenance of the available e-learning facilities. Teaching staff proficiency in e-learning-related activities and institutional provision for their e-learning needs is significantly low suggesting that tertiary institutions are unprepared for e-learning modes of instruction. We recommend that institutional heads provide an enabling environment for e-learning technology to be embraced by teaching staff and students as a mode of instruction in line with global best practices.

Keywords: Adopting, E-learning technology, Mode of instruction, Prepared, Tertiary institutions.

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Contents

Contribution of this paper to the literature

This study contributes to knowledge because it has not been carried out in geographic specifics, the variables of the study are different from what other researchers have used and the design, population and sample have not been used by other authors as used in this study.

1. Introduction

The world is undergoing a tremendous transformation where the information age has taken center stage with technology as the leading light. It is reshaping the way and manner in which humans live, interact with one another and undertake their general activities. Therefore, the world has become technology-compliant in every sphere of its activities and tertiary institutions must key in and flow with the unfolding events if their organizations must remain relevant and fulfil their mandates. According to Drucker, cited in Obanyan (2015):

> We live in a time of rapid change. This implies that the chances of getting results and opportunities for improvement are also changing rapidly. Impossible and undesired things yesterday have suddenly become possible as well as desired and senseless things (p.1).

It follows that we cannot use yesterday's methods to achieve impressive results today. We must adhere strictly to methods that are in consonance with and in compliance with today's realities to achieve realistic results today. Therefore, we must follow the currency of events as they unfold if we are to reap the accompanying results. The present crop of tertiary institution students must be adequately trained to effectively use information and communication technology for their academic work and professional development. Otherwise, education worldwide and in Nigeria will remain meaningless.

In the last two decades, the education system has experienced tremendous improvements because of the application of technology. It has enhanced all aspects of education such as management (administration), teaching and learning, supervision, training, research and development. Technology is so important in education that it is used at primary, secondary and tertiary levels and is included in the curriculum as an integral part (Federal Republic of Nigeria, 2014). Interestingly, the wind of change pervading the world occasioned by technology has made remarkable in-roads in Nigeria especially in communication and information sharing, collaborations, social engagements, managing humans, resources, economy, politics and educational processes but its impact in education especially classroom instruction is a subject of intense debate because there is a clamor for full integration of technology in teaching and learning in and outside the classroom but little or nothing is done to back up the call. Undoubtedly, education is known to hold the key to development in all its ramifications and this can only be evident if teaching and learning which constitute an integral aspect are made to be qualitative, functional, and effective. However, classroom instruction (teaching and learning) cannot produce tangible results if the requisite facilities and resources are poorly provided and in most cases, unavailable.

Classroom instruction in our climate's tertiary institutions has been more of the traditional method where lecturers meet face-to-face with the students. The pandemic led to disruptions and outright cancellations of academic sessions thereby elongating students' graduation periods. Therefore, it means that something must be done to rescue teaching and learning processes in the tertiary education system from unnecessary interruptions, delays and cancellations. The adoption of e-learning technology as a mode of instruction has become imperative.

The necessity of e-learning modes of instruction in tertiary institutions is to inject effectiveness and efficiency in curriculum implementation to foster system productivity with the utilization of material devices such as computers, computer laboratories, digital libraries, digital classrooms internet and e-mail facilities, fax and wireless applications, multimedia systems and multimedia courseware development, videophone systems and teleconferencing devices (Tijani, 2017; Tijani, Abdullahi, & Omosidi, 2022). E-learning is structured system of instruction that applies electronic technologies to access the curriculum content and enhance its delivery outside the traditional classroom setting, anytime and anywhere at the convenience of teachers and learners for the purpose of achieving educational objectives. Nwafor and Abuka (2015). E-learning is the application of the internet to support knowledge that uses a comprehensive approach that may not be limited to a particular course. According to Tijani et al. (2022), e-learning is a computer-based, web-based or online learning that encompasses all teaching and assessment methods using technologies like blogs, podcasts, Wikis and learning management systems such as web connectivity and the internet to improve teaching-learning knowledge and research work. It uses electronic machines and media to facilitate learning.

The advent of e-learning in Nigeria occurred in 1886, when the electronic cable connection was introduced by the colonial masters to serve as a medium for sending information from Lagos to the London office (Anyira, 2011). With Nigeria's independence on October 1, 1960, the Post and Telecommunication (P &T) department of the Ministry of Communications in conjunction with Nigeria External Telecommunications Limited (NET) established in 1962 took over the responsibility of providing telecommunication services. These bodies metamorphosed into Nigeria Telecommunication (NITEL) in December 1984 and commenced operations on 1st January 1985 as the sole providers and controllers of telecommunication services until the 2000's when the Federal Government of Nigeria liberalized communication industry policy leading to the ushering in different telecommunication service providers such as Airtel, 9mobile, Global COM and Mobil Telephone Network. Drastic developmental changes have been witnessed in the information and communication industry with more companies approved to provide internet services.

E-learning has the capacity to facilitate the teaching and learning process by making independent learning achievable, offering learners and lecturers control over content, pace of learning, learning sequence, period and most often media allowing them to channel their experiences to satisfy their personal learning objectives (Ezeabii, Ile, & Ezugwu, 2018). The Minister of Education and House of Representatives in 2020 urged tertiary institutions, particularly universities to adopt e-learning modes of instruction as a way of ensuring that the COVID 19 pandemic did not disrupt academic programmes to underscore the importance of e-learning technology. Although these calls were praiseworthy, it is unclear if higher education institutions in Cross River State, a crucial region of Nigeria are ready to embark on this project. It started the pursuit of this research.

1.1. Statement of the Problem

The inability of tertiary institutions to meet up with the realities of the information age is well known and documented. Continuous closures and disruptions of teaching and learning activities have become essential characteristics of tertiary institutions. These have resulted in the elongation of academic programmes making students spend more years than the stipulated periods. A lot of concern has been expressed over this anomaly in tertiary institutions. There is a growing call for the utilization of technology as a solution of which e-learning is an integral part. Undoubtedly, this mode of learning has far-reaching advantages. However, one thing is to adopt it; the other is to make it functional. Few people have studied the integration of e-learning technology in classroom environments despite the rapid spread of technology in teaching and learning at the tertiary institution level in other parts of the country. The level of preparedness of Cross River State tertiary institutions in adopting e-learning technology as a mode of instruction as a way of providing a solution to unnecessary delays in the graduation of students is not yet known. Hence, it has become imperative to examine this problem. What is the level of preparedness of tertiary institutions in Cross River State to adopt e-learning technology as a mode of instruction?

1.2. Objectives

The main objective of this research is to ascertain the level of preparedness of tertiary institutions in Cross River State to adopt e-learning technology as a mode of instruction. The study will determine:

i. The availability of e-learning facilities in tertiary institutions in Cross River State.
ii. Staff accessibility to e-learning facilities.
iii. Staff acquisition of e-learning skills.
iv. Institutional provision for staff e-learning needs.
v. Maintenance of e-learning technology facilities.

1.3. Research Questions

1. What is the level of availability of e-learning facilities in tertiary institutions?
2. What is the level of staff accessibility to institutional e-learning facilities?
3. What is the extent of the maintenance of institutional e-learning facilities?

1.4. Hypotheses

1. *Teaching staff proficiency in e-learning-related activities is not significantly low.*
2. *The level of institutional provision for teaching staff e-learning needs is not significantly low.*

2. Literature Review

Since the advent of technology, educational delivery has witnessed drastic changes that have made it more affordable, result-oriented and beneficial to teaching staff. The teaching and learning process is especially significant since technology has transformed it to a level where it may now occur anytime and anywhere outside of traditional classroom settings. An essential objective of technology is to help teaching staff transform their teaching activities through the application of nascent technologies in lesson delivery situations aimed at improving educational content and delivery. There is research evidence (Tijani et al., 2022) that e-learning serves as an innovative approach to teaching service delivery that is being progressively embraced by Nigerian higher institutions because it can encourage active learning, support teaching, explore other teaching and learning activities anywhere as well as conduct research activities. This means that e-learning technology has the capability to make immense contributions to education anytime, anywhere at any time.

According to Taja-on, Miras, and Jurolan (2021), e-learning possesses and stores varied information, knowledge, presentation, and communication which not only improves educational delivery but also enhances the capacity of the educational industry to cope with and adjust to changing realities and times. Welsh, Wanberg, Brown, and Simmering (2003) highlighted six benefits of e-learning as follows:

a. Improves learners' convenience.
b. Provide consistent and worldwide training.
c. Increase learner comfort.
d. Reduce information overload.
e. Reduces the expense of educational costs.
f. Improve tracking learners' activities.
g. Improve tracking learners' activities.
h. Reduce the delivery cycle time.

Major (2020) opined that the necessity of offering instruction is fostering the invention of nascent ways of lesson delivery in tertiary institutions in times of crisis while insisting that schools need to be ready to cover the support needed by the faculty to do this innovative and outstanding work leading institutions into the future. E-learning is yet to make a remarkable impact in this clime (Nigeria) despite these possibilities. This can be attributed to these factors: availability, accessibility, competence and other complexities inherent in our education system, especially at the tertiary level.

A study by Oluwalola and Omotayo (2019) found that e-learning facilities were moderately available while utilization for teaching and learning activities was occasional in management and business courses at selected universities in Kwara State, Nigeria. Similarly, Cabero-Almenara, Guillén-Gámez, Ruiz-Palmero, and Palacios-Rodríguez (2021) found medium and low levels of digital competence among teaching staff especially in the higher education stage and called for urgent needs in their training in digital resource utilization. Abdul-Rahman and Dalshad Abdullah (2017) reported in an empirical study that e-learning competence among teaching staff was at prominent levels in Koya University and that gender was not a factor in e-learning competence among lecturers. Madu and Pam (2011) found that only a few e-learning facilities were available for teaching and learning in universities. Kiilu, Nyerere, and Ogeta's (2018) study revealed that most of the institutions have not acquired e-

learning infrastructure and staff do not have basic Information and Communication Technology (ICT) skills. In addition, Navani and Ansari (2016) found that university faculty are ready to use e-learning modes of instruction but need slight improvement in the process.

In an empirical study, Nwagwu (2020) found that Nigerian university teaching staff considered e-learning an add-on and were unable to integrate e-learning into their present duties and had limited time to do so. Their opinion on Nigerian universities' readiness to adopt e-learning modes of instruction was not influenced by human resources readiness. They indicated that their institutions have the capacity of adopting e-learning and the personnel to do so but finance, training, ICT equipment, materials or content were significant factors for e-learning readiness which were inadequate. Findings also indicated that routine maintenance plans for e-learning facilities were hindered by inadequate funding and staffing, reduced job enthusiasm and bureaucratic procedures (Adegoroye & Okiki, 2018).

Nwagwu (2020) also highlighted that organizations' e-learning readiness is based on the resources and skills they possess and their attitudes related to technology, people and self-development. Though these factors have more organizational cultural characteristics, they could be effective in countries like Nigeria. Soomro, Kale, Curtis, Akcaoglu, and Bernstein (2020) found that physical access to ICT is poor suggesting that access to ICT do not meet the need of university faculty in Pakistan and their access to adequate ICT infrastructure is limited. The faculty's use of ICT to support their instructional practices such as lesson planning, learning materials, delivering, evaluating learners' performance and encouraging collaboration among students was comparatively low. This finding points to the fact that developing countries tend to have similar e-learning and ICT challenges bedeviling their universities.

A study by Dzikite, Nsubuga, and Nkonki (2017) found that teaching staff had limited ICT knowledge and skills for teaching their courses implying inadequate pedagogical content knowledge required for effective functioning in a digital society. Bakare, Onah, and Okereke (2018) revealed that most teaching staff in Nigerian tertiary institutions needed capacity for effective operation of computers, uploading text on the internet and using teleconferencing for effective e-teaching and indicated readiness among them to receive training on e-teaching to integrate and use it for instructional delivery in their various institutions.

Though this literature review highlighted the fact that preparedness and readiness for adopting e-learning technology in tertiary institutions are far from ideal, there is a desire for it among the faculty, students, and institutions. Availability of facilities, accessibility, acquisition of skills, provision for e-learning needs and capacity building needs were not ideal signifying that they were not able to meet the desired needs. These challenges had common characteristics among universities and other tertiary institutions in Nigeria and elsewhere. E-learning technology does not stand a chance to make the required impact in teaching and learning situations especially during the Corona virus pandemic.

However, though the reviewed literature painted a gloomy picture of the capability of tertiary institutions to adopt e-learning technology as a mode of instruction in other parts of Nigeria and elsewhere, it did not extend to Cross River State. No research has focused on finding out how prepared tertiary institutions in Cross River State Nigeria are to adopt e-learning technology as a mode of instruction. This gave impetus to this study.

3. Methodology

The setting for this study was a tertiary institution in Cross River State. This state is in the southern geopolitical zone of Nigeria constituting a part of the crude oil rich Niger Delta region of Nigeria. Its political and economic capital is Calabar.

The research design adopted was a descriptive survey where descriptive statistics (percentages, mean and standard deviation) were used to answer the research questions while population t-test of one sample mean was used to analyze the hypotheses. The population comprised tertiary institutions made up of the University of Calabar, the University of Cross River State (formerly Cross River University of Technology), the Federal College of Education Obudu and the Cross River State College of Education, Akamkpa. A census sampling approach was adopted where all the tertiary institutions comprised the sample and 100 lecturers from each tertiary institution provided the data on behalf of the institutions. The researchers constructed instruments called the "Preparedness of Tertiary Institutions for E-learning Technology Instruction Mode Questionnaire" (PTIETIMQ) which was used for data collection. The instrument was validated by experts in technology education, measurement and evaluation, a measure that established its validity and the reliability estimate was .87, a figure that indicated that the instrument is reliable to achieve this study's objective.

4. Results

4.1. Research Questions

1. What is the level of availability of e-learning facilities in tertiary institutions? Descriptive statistics involving percentages and bar charts represented the results of the analyses. Summaries of this information were presented in Table 1 and Figure 1.

Table 1. Availability of institutional e-learning facilities.

N=400				
Variables	**Available**		**Not available**	
	(N)	**%**	**(N)**	**%**
Interactive white board	131	32.7	269	67.3
Electronic chalkboard	19	4.8	381	95.2
Radio player	46	11.5	354	88.5
Flash drive	125	31.2	275	68.8
Routers	80	20.0	320	80.0
Video recorder	56	14.0	344	86.0
Instructional television	48	12.0	352	88.0
CD-ROM	184	46.0	216	54.0

N=400				
Variables	**Available**		**Not available**	
	(N)	**%**	**(N)**	**%**
Laptop computer	145	36.3	255	63.7
Scanner machines	156	39.0	244	61.0
Printer	208	52.0	192	48.0
Desktop computers	202	50.5	198	49.5
Internet facilities	124	31.0	276	59.0
Video conferencing facilities	32	8.0	368	92.0
Audio conferencing facilities	40	10.0	360	90.0
E-library	180	45.0	220	55.0
Mobile telephone	192	48.0	208	52.0
Multi-media-audio visual center	90	22.5	310	77.5
Power Point projector	101	25.2	299	74.8
Database resources	176	44.0	224	56.0
Internet connectivity	119	29.8	281	70.2
Computer software	250	62.5	150	37.5
Fax machine	219	54.8	181	45.2

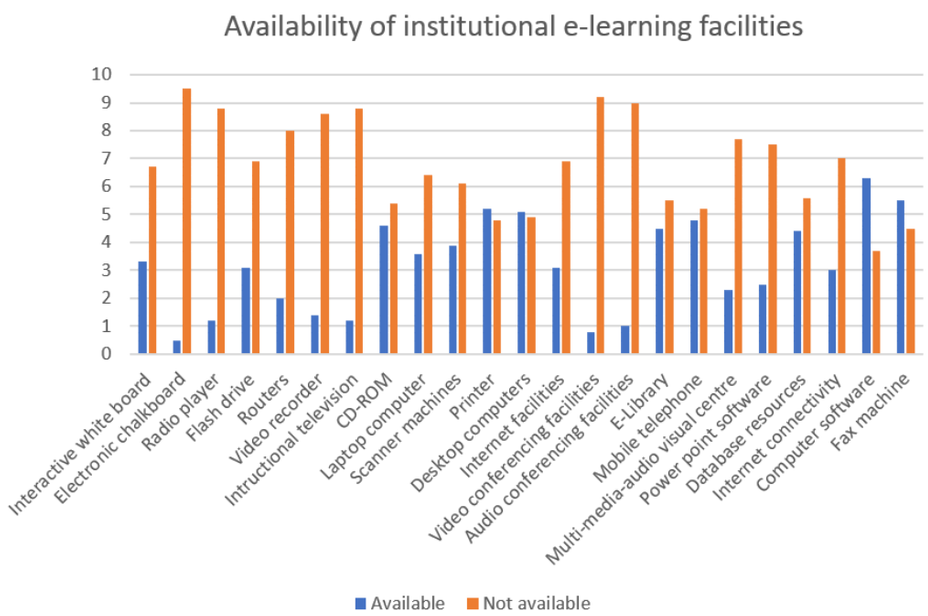

Figure 1. Graphical representation of the availability of institutional e-learning facilities.

Table 1 and Figure 1 revealed that most of the facilities required to embark on e-learning mode of instruction were unavailable and therefore lacking. However, the results show that e-learning facilities such as printers, desktop computers, fax machines and computer software's availability were slightly above average.

2. What is the level of staff accessibility to institutional e-learning facilities? The results from the data analysis were presented in percentages and bar charts. Summaries of the results are displayed in Table 2 and Figure 2.

Table 2. Staff accessibility to institutional e-learning facilities.

N=400				
Variables	**Accessible**		**Not accessible**	
	(N)	**%**	**(N)**	**%**
Interactive whiteboard	104	26.2	296	74.8
Electronic chalkboard	22	5.5	378	94.5
Radio players	51	12.8	349	87.2
Flash drive	96	24.0	304	76.0
Routers	48	12.0	352	88.0
Video recorders	37	9.2	363	90.8
Instructional television	46	11.5	354	88.5
Compact disc read-only memory	110	27.5	290	72.5
Laptop computers	174	43.5	226	56.5
Scanner machines	141	35.3	259	64.7
Desktop computers	160	40.0	240	60.0
Internet facilities	90	22.3	310	77.7
Video conferencing facilities	45	11.2	355	88.8
Audio conferencing facilities	40	10.0	360	90.0
E-library	11	28.2	287	71.8
Mobile telephone	189	47.3	211	52.7
Printer	159	39.7	441	60.3
Multimedia audio-visual center	60	15.0	340	85.0
Power Point projector	101	25.3	299	74.7
Database resources	76	19.0	324	81.0
Internet connectivity	122	30.5	278	69.5
Computer software	128	32.0	272	68.0
Fax machine	143	35.8	257	64.2

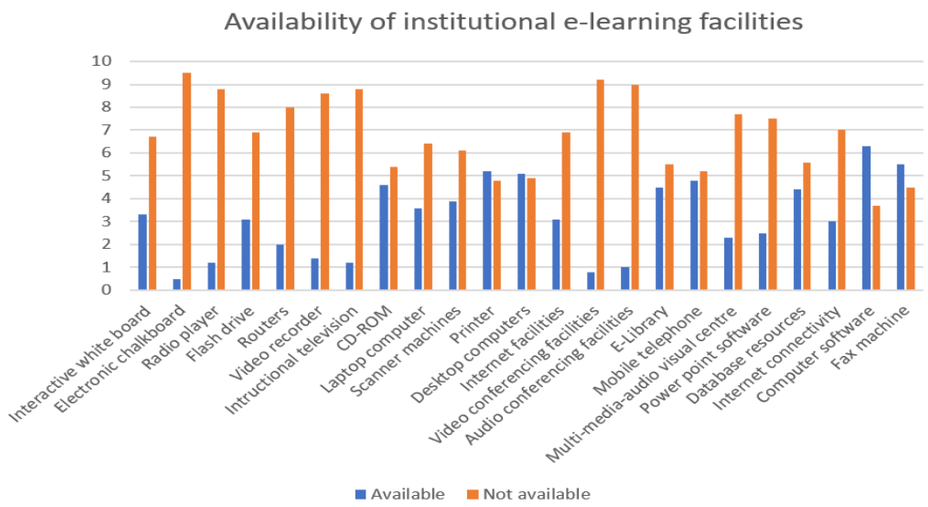

Figure 2. Graphical representation of staff accessibility to institutional e-learning facilities.

According to Table 2, the results in all ramifications indicated that available institutional e-learning facilities were not accessible to staff. This same scenario is reflected in the bar chart which appears in Figure 2.

3. What is the extent of the maintenance of institutional e-learning facilities? The results of the analysis were presented in percentages and bar charts. They can be viewed in Table 3 and Figure 3.

Table 3. Maintenance of institutional e-learning facilities.

N=400				
Variables	**Maintained**		**Not maintained**	
	(N)	**%**	**(N)**	**%**
Interactive white board	71	17.8	329	82.2
Electronic chalkboard	24	6.0	376	94.0
Flash drive	64	16.0	336	84.0
Radio players	51	12.7	349	87.3
Routers	39	9.8	361	90.2
Video player	54	13.5	346	86.5
Instructional television	51	12.8	349	87.2
CD-ROM	83	20.8	317	79.2
Laptop computers	125	31.3	275	68.7
Scanner machines	112	28.0	288	72.0
Desktop computers	130	32.5	270	67.5
Internet facilities	93	23.3	307	76.7
Video conferencing facilities	55	13.8	345	86.2
Audio conferencing facilities	51	12.8	349	87.2
E-library	119	29.8	281	70.2
Mobile telephone	148	37.0	252	63.0
Printer	154	38.5	246	61.5
Multimedia audio visual center	63	15.8	337	84.2
Database resources	62	15.5	338	84.5
Power Point projector	64	16.0	336	84.0
Internet connectivity	78	19.5	322	80.5
Computer software	111	27.8	289	72.2
Fax machine	162	40.5	238	59.5

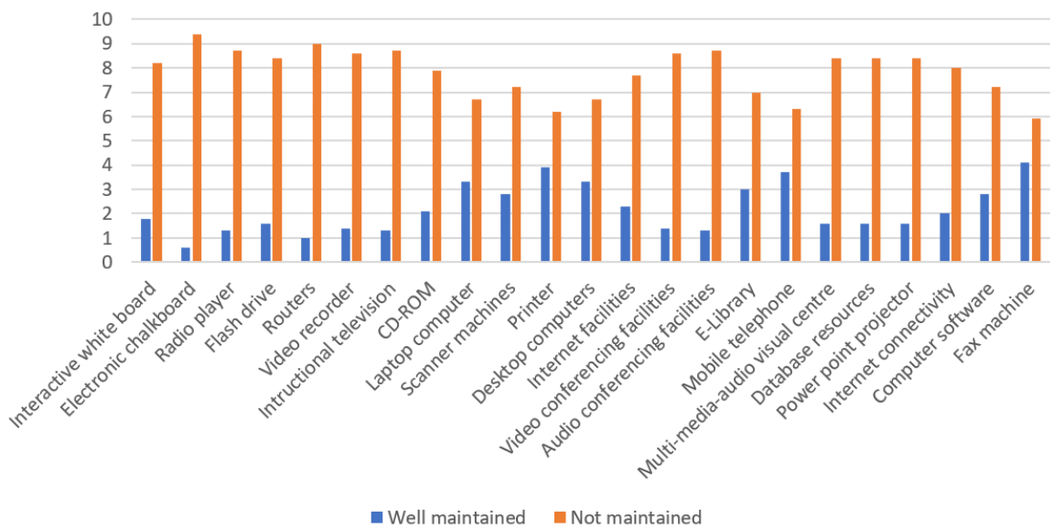

Figure 3. Graphical representation of the maintenance of institutional e-learning facilities.

According to Table 3, the institutional facilities available for e-learning modes of instruction were poorly maintained as evidenced by the higher percentages of respondents. This result is presented graphically in Figure 3.

4.2. Hypotheses

1. Teaching staff proficiency in e-learning-related activities is not significantly low. Teaching staff proficiency in e-learning-related activities is the observed variable. The data from this hypothesis were analyzed with population t-test of a single mean. The results in summary form are presented in Table 4.

Table 4. Teaching staff proficiency in e-learning-related activities.

N=400				
Items	**X**	**SD**	**t**	**Sig.**
Operation of computers	3.74	1.16	64.65	0.000
Surfing the internet	3.56	1.17	61.11	0.000
Exposing students to e-learning skills	2.82	0.78	46.45	0.000
Use of online application	3.28	1.22	53.54	0.000
Use of social media	3.62	1.28	56.54	0.000
Managing an online blog	2.74	1.24	44.27	0.000
Teaching with an interactive white board	2.95	1.29	45.77	0.000
Online presentation	2.77	1.35	41.05	0.000
Data mining skills	2.78	1.30	42.88	0.000
Online assessment of students works	2.97	1.39	42.72	0.000
Capacity to engage students online	2.89	1.36	42.29	0.000
Time management	3.38	1.30	51.89	0.000
Instructional communication	3.31	1.20	55.34	0.000
Online content creation	2.77	1.22	45.33	0.000
Creating a stimulating virtual learning environment	2.77	1.32	41.98	0.000

This table shows that the computed t-values at the 0.05 level and 399 degrees of freedom were significant. According to these results, it is deduced that teaching staff proficiency in e-learning-related activities is significantly low.

The level of institutional provision for teaching staff e-learning needs is not significantly low. The variable in this hypothesis is the level of institutional provision for teaching staff e-learning needs. Table 5 presents an overview of the data analyzed for this hypothesis using the population t-test of a single mean.

Table 5. Institutional provision for staff e-learning needs.

N=400				
Items	**X**	**SD**	**t**	**Sig.**
Computer operation training	3.07	1.27	48.18	0.000
ICT gadget manipulation	2.88	1.15	49.95	0.000
Well-equipped computer laboratory	2.89	1.30	44.37	0.000
Online presentation training	2.47	1.18	41.97	0.000
Searching for material on the internet	2.99	1.31	45.73	0.000
Acquisition of data mining skills	2.69	1.18	45.48	0.000
Utilization of online application training	2.82	1.17	48.42	0.000
Online content creation tutorials	2.46	1.20	40.82	0.000
Time management skills acquisition	2.64	1.19	44.22	0.000
E-mail creation	3.02	1.31	46.08	0.000
E-mail utilization	3.00	1.21	49.60	0.000
Online communication skills	3.08	1.32	46.53	0.000
Adopting online safety tips	2.78	1.23	45.17	0.000
Effective online engagement skills	2.76	1.18	46.59	0.000
Free campus-wide wireless internet hotspot	2.38	1.25	38.09	0.000

This table's results show that the calculated t-values were observed to be significant at .05 and 399 degrees of freedom. It is therefore inferred that institutional provision for teaching staff e-learning needs is significantly low.

5. Discussion

The results of the analysis of research question 1 stated that the facilities required for institutional e-learning were mostly not available. This suggests that the requisite facilities for e-learning were not available in the required quantity. This scenario is not surprising because they are facilities that require a huge capital outlay which the tertiary institutions under survey may not be able to provide because of the poor funding they have been grappling with over the years. In corroboration, Madu and Pam's (2011) study revealed that only a few e-learning facilities were available for teaching and learning in universities. Available research evidence also indicates that most of the institutions have not acquired e-learning infrastructure and staff do not have basic ICT skills (Kiilu et al., 2018) meaning that both e-learning facilities and staff skills are acutely lacking. Therefore, it follows that starting an e-learning method of instruction becomes a major undertaking in places where these facilities are sparse, inaccessible, or deficient.

However, there are numerous facilities signifying that there are few, such as printers, desktop computers, computer software, and fax machines whose availability is slightly above average but whose availability is insignificant to warrant any remarkable impact in the e-learning mode of instruction. This finding arises from the fact that these facilities are common features in many of the offices in the institutions studied which might have prodded the respondents' view.

According to Table 2 and Figure 2, there is a revelation that available institutional e-learning facilities were not mostly accessible to staff at the required volume. This is an indication that the rate at which teaching staff have access to them is infinitesimal, thus confirming Soomro et al.'s (2020) finding and as such cannot warrant any tangible result in their application to e-learning modes of instruction. The beauty of facilities lies in their appropriate utilization. They can guarantee maximum contribution to the educational process at the tertiary level.

This outcome might be explained from the perspective that since there is no known institutional policy regarding teaching staff engagement in e-learning activities, there might be an opinion from top management that allowing teaching staff to access available e-learning facilities may not yield any dividend to the institution. Furthermore, institutions provide regulated access to available e-learning facilities because of the belief that not all teaching staff may be proficient in operating the facilities and as such granting them unfettered access might lead to damage to the facilities on the ground. Teaching staff that need to use e-learning facilities for instructional purposes rarely have access to them because the few available ones are meant to serve an exceptionally large staff and student population on campuses. Therefore, the desire for access may diminish with time.

Table 3 indicated that a small percentage of the available e-learning facilities were well-maintained as opposed to the larger percentage that was not maintained. By implication, the respondents are of the opinion that the rate at which available facilities are not maintained is high meaning that available e-learning facilities were left unmaintained by the authorities in the institutions. As a result, this lack of maintenance might not ensure the optimal functioning of e-learning facilities. This signifies a potent danger to any quest for adopting e-learning modes of instruction. Maintenance of facilities makes them ready for use at any point. The possibility of achieving real progress in the use of e-learning as a mode of instruction can be shattered by any poorly maintained facility yielding unsatisfactory and inconsistent results.

This backdrop could be attributed to the poor maintenance culture of facilities prevalent in tertiary institutions resulting from the paucity of funds that has become ubiquitous in tertiary institutions over the years. This viewpoint was accentuated by Adegoroye and Okiki's (2018) finding which indicated that routine maintenance plans for e-learning facilities were hindered by inadequate funding and staffing, reduced job enthusiasm and bureaucratic procedures. Complaints of dearth of funds are a common feature among tertiary institution administrators. According to them, maintenance of e-learning facilities involves huge financial expenditure which overwhelms the available funds, thus, rendering them handicapped.

Findings of hypothesis 1 reported that teaching staff proficiency in e-learning-related activities is significantly low which means that teaching staff competency to engage in e-learning related activities is abysmally low. An explanation for this finding is that there are no laid down policies in the institutions specifying teaching staff engagement in e-learning-related activities. This has resulted in low digital literacy among them. Thus, while tertiary institutions in other climes are striving to make their academic programmes technology compatible, the ones under study appear to be lagging. As a result, maintaining e-learning infrastructure becomes incredibly challenging.

Implementing an online learning platform for teaching may seem unfeasible. The success of an endeavor like this is questionable if the teaching staff who are the primary causes of the e-learning form of instruction show deficiencies in the way they are considered to be the main elements of e-learning.

The findings of this study align with those of Dzikite et al. (2017) who found that digital competence among teachers in tertiary institutions tend to be extremely low. However, studies such as Cabero-Almenara et al. (2021) and Abdul-Rahman and Dalshad Abdullah (2017) reported intermediate and prominent level of digital and e-learning competence among higher institution teachers. While the present study found low e-learning competence among teaching staff others with similar and different outcomes took place elsewhere. This means that the Nigerian situation appears similar as well as contrary to what is available in other countries.

The second hypothesis's results indicate that there is inadequate institutional provision for the e-learning needs of teaching staff. This suggests that the extent to which institutions make provisions for meeting the needs of teaching staff to participate in e-learning modes of instruction is low. A failure to provide an enabling environment for adopting e-learning is an indication of unpreparedness.

The reason for this finding might be that tertiary institutions under study run their activities with little digital application. They seem not to have the financial resources to embark on full scale digitization of their activities including classroom instruction. Nigerian tertiary institutions would want to compete favorably with their peers to stay relevant in the information economy given the widespread use of technology as a means of delivering educational services worldwide. However, inadequacies occasioned by scarcity of funds and government reluctance to invest in the provision of quality tertiary education seem to be dragging them behind, thus rendering their desire for technology adoption far from being a reality. The findings are in tandem with Kiilu et al.'s (2018) study that many teachers training colleges in Kenya hardly put in place strategies to support e-learning needs of teaching staff and that acute shortage of basic e-learning resources such as interactive whiteboards, digital storage devices, database repositories, digital content for all courses and e-book for reference abound. Thus, Nigerian and Kenyan situations are similar being developing countries. However, Nigerian teaching staff indicated readiness for training on e-teaching and its integration for instructional delivery in their various institutions but decried a lack of institutional support (Bakare et al., 2018). Therefore, the inability to adopt e-learning modes of instruction is institutional.

6. Conclusion

The results of this research showed that most of the facilities needed for institutional e-learning were either unavailable or poorly maintained. Teaching staff proficiency in e-learning-related activities and institutional provision for their e-learning needs is significantly low suggesting that tertiary institutions are unprepared for e-learning modes of instruction. Therefore, they are far from reaping the benefits of e-learning technology by not harnessing the opportunities provided by it to beef up and reposition their classroom instruction in line with global best practices for better and improved results.

7. Recommendations

It is recommended that

1. Tertiary institutional heads should provide an enabling environment for e-learning technology to be embraced by teaching staff and students as a mode of instruction in line with global best practices.
2. Opportunities should be provided for teaching staff to be proficient in e-learning related activities. They will gain the skills to deploy e-learning technology to enhance their classroom instruction for improved student learning.

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