



Utilization of e-Learning Facilities for Effective Teaching and Learning in Colleges of Education in Adamawa State, Nigeria

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ABSTRACT: *The Government is committed to implementing e-learning for effective teaching and learning in our educational system, but the utilization of facilities for e-learning seems to be below standard. It is against this backdrop that this study was designed to investigate the utilization of e-learning facilities for effective teaching and learning in colleges of education in Adamawa State, Nigeria. Three objectives and three Research questions were raised to guide the conduct of the study. The study adopted a descriptive survey research design. Where a sample of 28 lecturers, 350 students, four e-library staff and two staff of ICT Centers were sampled randomly from the two colleges of education in Adamawa State and used as respondents for the study. A 23-item structured questionnaire known as the Utilization of E-learning Facilities Opinion Questionnaire (UELFOQ) was used to obtain data from respondents for the study. The simple percentage method of data analysis was used to analyze respondent's bio-data while the Mean score method of data analysis was used to analyze the data collected for answering the research question raised in the study. The findings of the study revealed that the fair utilization of e-learning facilities in Colleges of Education as found out by this study presents numerous benefits that contribute to effective teaching and learning. Enhanced accessibility, improved engagement through interactivity, and cost-effectiveness are key advantages that support this mode of education. However, addressing the challenges associated with the utilization of e-learning facilities in colleges of education is crucial for maximizing the potential benefits. It is in line with the above that this paper recommends the following: There is the need for Continuous professional development for educators to effectively utilize the e-learning facilities and there is the need for investment in e-learning facilities by government, non-governmental organizations and private individuals interested in education at the college of education level.*

KEYWORDS: *Utilization, E-Learning Facilities Effective, Teaching, Learning, Colleges of Education.*

INTRODUCTION

With a network of computers that allows one to access pertinent information for certain reasons, the world is traveling along the information superhighway (Onuigbo & Onuigbo, 2006). The adoption and adaption of these new instruments also deserve attention, as the sector of education in particular depends on the information superhighway and new and developing forms of technology. According to Almekhlafi and Almeqdadi (2010), education has grown over the past few decades, and numerous scholars have been examining the different ways to increase its effectiveness. Research has also shown that computers are becoming a common

instrument in classroom instruction, regardless of subject, with lectures being given online (Al-Khathlan referenced in Alsharidah, 2018). Online instruction delivery, or e-learning, is becoming more and more popular worldwide, particularly in places with security issues and during pandemics when teachers and students are unable to attend or remain in classrooms without fear of attack, kidnapping, or infection. Some international institutions have started offering online courses throughout the last 20 years. However the majority of colleges, universities, and institutions do not use this style of instruction, and their employees are unaware of what e-learning entails. Scholars' knowledge of online learning and its implications has grown thanks to MOOCs (Massive Online Open Courses) (Lynch, 2004).

A multimedia teaching package is an e-learning resource that incorporates all of the information technology (IT) needed for classroom training. According to Johnson (2007), schools today have the difficulty of meeting the complex and evolving needs of society while doing more with fewer resources. He asserts that educators now discover that the conventional approach to school management and knowledge and skill transmission is rapidly becoming insufficient to handle the rapid changes in the educational system. As a result, making efficient use of the vast array of resources provided by "ICT" creates previously unheard-of chances to enhance classroom instruction and learning while raising student achievement in coursework. When paired with in-person instruction, e-learning allows teachers to work with more students while still ensuring learning outcomes, high-quality instruction, and effective learning—all of which may be of a better caliber (Al-Hassan, n.d). In the era of information and communication technologies, e-learning allows for different methods of curriculum delivery. Through the use of computers, smartphones, and personal digital assistants (PDAs), curriculum implementers at the college of education level can motivate and sway students to learn through e-learning.

An institution must make use of the e-learning resources in order to embrace and modify e-learning, claims Pirani (2004). The first thing that springs to mind is whether or not e-learning resources are being used for efficient teaching and learning in education colleges since the National Information Technology Policy (NITP) was approved and the National Information Technology Development Agency (NITDA) was established. This study examined how e-learning resources were used in Adamawa State, Nigerian colleges of education in an effort to address this concern.

OBJECTIVES OF THE STUDY

The study's primary goal is to investigate how colleges of education in Adamawa State, Nigeria, use e-learning resources to enhance instruction and learning. The study's specific objectives are to:

1. Assess how well Adamawa State's colleges of education use e-learning resources for instruction and learning.
2. Assess the effects of using e-learning resources for efficient instruction and learning in Adamawa State's educational colleges.
3. Determine the obstacles preventing Adamawa State's colleges of education from using e-learning resources for efficient instruction and learning.

RESEARCH QUESTION

To direct the investigation, the following research questions were posed:

1. To what degree do Adamawa State's colleges of education make use of e-learning resources for efficient instruction and learning?
2. What effects does the use of e-learning resources have on efficient instruction and learning in Adamawa State's colleges of education?
3. What obstacles prevent Adamawa State's colleges of education from using e-learning resources for efficient instruction and learning?

REVIEW OF RELATED LITERATURE

Ugwu and Aleke (2012) define e-learning as the use of electronic technology to provide training and educational materials. It describes the technology used to gather, store, alter, and transmit data in different formats. According to a study by Akanbi (2020) on the "availability and utilization of e-learning facilities in the teaching of senior secondary school physics in Ilorin," practically all of the e-learning resources found in the study were insufficient, and teachers were not making effective use of the available ones. The "use of e-learning facilities in the education system of a university" was examined by Eze *et al.* (2018).

The study discovered that instructors at the sampled university made good use of sufficient and accessible e-learning resources. "E-learning facilitated studies significantly improved students' academic performance, learning process, and self-development," according to Fayomi *et al.* (2015), who looked at the "impact of e-learning in facilitating students' performance among private secondary schools and tertiary institutions in Ota."

According to Malale, Gomba & Dichaba (2018) and Meskhi, Ponomareva & Ugnich (2019), e-learning is advantageous in multiple aspects, including Meeting the diverse needs of students, supporting individuals with disabilities, engaging learners who do not respond well to traditional educational settings, offering opportunities for gifted and talented learners to enhance their learning, and fostering the development of independent learning skills through professional learning experiences.

The imperatives of e-learning in Colleges of Education are numerous, but the major ones according to Kwache (2007), Aduwa-Ogiegbaen and Iyamu (2005), Ajayi and Ekundayo (2009) are: E-learning Provides Access to Huge sources of Information, E-learning Improves the Quality of Teaching and learning, E-learning, Reduces the Burden of the Teachers, E-learning challenges Students to Learn Independently. E-learning Improves the Quality of Data Available to both lecturers and Students, e-learning motivates Learners to Learn.

Notwithstanding the critical roles that e-learning plays in educational institutions across the globe, the majority of developing countries, including Nigeria, have not yet fully realized its potential. Aduwa-Ogiegbaen and Iyamu (2005) discuss the epileptic power supply, Dabesaki (2005) discusses the high cost of equipment, Ajayi and Ekundayo (2009) discuss resistance to change, and Nwite (2007) and Okebukola (2005) discuss the lack of skilled manpower to manage available systems and inadequate training facilities for "e-learning in the tertiary level, among other obstacles."

Technophobia, framework disappointment, poor maintenance of available facilities for sustainability, irregular power supply, poor bandwidth connectivity, and a lack of knowledge about electronic learning resources for instruction are additional challenges (Warschauer & Matuchniak, 2010, Okoli, 2012, Aboderin, 2015; Aminu & Rahaman, 2014; Eze, Chinedu-Eze, & Bello, 2018 & Olowonisi, 2016).

RESEARCH METHODOLOGY

The descriptive survey research design was adopted for this study. The descriptive survey research design was adopted because the survey design aids the collection of huge data within a short period at a good point (Elisha *et al.*, 2024). In addition, it's cost-effective and good for collecting information for both quantitative and qualitative analysis (Bostley (2019). The area of study is Adamawa State, Nigeria. With a focus on Federal College of Education Yola and Adamawa State College of Education Hong.

The target population for this study is 9, 624 which comprised of all the 693 Lecturers (369 in FCE, Yola and 324 in COE Homg), all the 8, 901 students (6, 118 in FCE Yola and 2,783 in COE, Hong) and all the 17 staff of e-library (8 in FCE, Yola and 9 in COE, Hong) and all the 13 staff of ICT Centers, (6 in FCE, Yola and 7 in COE Hong). Due to the large number of the target population. The Taro Yamane method of sampling techniques was used in sampling the respondents for the study which is 384 comprising 28 lecturers, 350 students, 4 e-library staff and 2 staff of ICT Centers.

A 33-item structured questionnaire known as 'Utilization of E-learning facilities Opinion Questionnaire (UELFOQ)' was used to obtain data from respondents for the study. The questionnaire will be divided into two sections (A and B). Section A will focus on the respondent's bio-data while section B will focus on the three objectives of the study. The questionnaire will be designed using a four-point rating scale of:

- (i) Adequately Utilized (AU), Fairly Utilized (FU), Rarely Utilized (RU) and Not Utilized (NU) for objective one
- (ii) Strongly agree (SA), Agree (A), Disagree (D) and strongly disagree (SD) for objectives two and three.

The instrument was validated by two experts one in ICT and the other in educational psychology for both face and content validity. The experts were requested to make some corrections, criticisms and possible suggestions on the language, content and ambiguity of the instruments. The series of corrections and suggestions on the simplicity of wordings used in structuring items of the instruments made by the two experts helped the researcher in restructuring the items of the instrument.

To ascertain the reliability of the instrument, a pilot study was conducted to establish the reliability of the instrument. The researchers administered 50 copies of the questionnaire to 24 students, 20 lecturers, 3 staff in the e-library and 3 staff in ICT centers in Taraba State College of Education, Zing, which did not form part of the main study but possess similar characteristics as those of the current study area based on objectives, mandate and geographical location. The 50 copies of the questionnaire given to the selected respondents to answer were collected back by the researchers the same day.

Data collated were analyzed for reliability using Cronbach Alpha Statistic. Cronbach Alpha Statistics was used because it helped the researchers to determine the internal consistency of items of the instrument. The overall coefficient of 'the instrument' yielded 0.787. This total reliability coefficient of 0.787 for 'the instrument' was considered high enough and reliable to be used for the study.

Two methods of data analysis were used for analyzing data for the study:

- (i) The simple percentage was used for analyzing respondent's bio-data;

- (ii) The mean score methods of data analysis were used to answer the research questions that were raised in the study.

RESULT AND DISCUSSIONS

Questionnaire Return Rate

Table 1: Questionnaire Return Rate

Questionnaire	Frequency	Percentage
Total Questionnaire Distributed	384	100
Returned and well-filled	359	93.5
Not Returned or not well Filled	25	6.5

[Source: Research Survey 2024]

From the analysis in Table 1, it is clear that even though 384 questionnaires were distributed to the sampled population for the study in the two Colleges of Education in Adamawa State, it is obvious that only 359 questionnaires (93.5 percent) were returned and well filled while 25 questionnaires (6.5 Percent) were either not returned or not well filled.

Table 2: Distribution of Respondents by Gender

Gender	Frequency	Percentage
Male	107	27.9
Female	277	72.1
Total	384	100

[Source: Research Survey 2024]

From the analysis in Table 2, it is clear that; 107 respondents (27.9 percent) are male respondents while 277 respondents (72.1 percent) are female respondents.

Table 3: Distribution of Respondents by Department / Unit

Dept. / Unit	Frequency	Percentage
Academic	28	7.3
ICT Staff	02	0.52
E-Library Staff	04	1.04
Student	350	91.1
Total	384	100

[Source: Research Survey 2024]

The analysis in Table 3 shows that in the respondents for the study, there are 28 lecturers (7.3 percent), 2 ICT Staff (0.52 percent), 4 E-Library staff (1.04 percent) and 350 students (91.1 percent).

Answering the Research Questions

Research Question One: To what extent do Adamawa State's colleges of education make use of e-learning resources for efficient instruction and learning?

Following analysis, the data used to address the first study question is summarized in Table 4.

Table 4: Utilization of e-learning facilities for effective teaching and learning in colleges of education

S/N	Items	Mean	Decision
1	Use of College website for teaching and learning activities	2.15	Rarely utilized
2	Use of Computers for teaching and learning	2.61	Fairly Utilize
3	Use of Digital Video Disk players for teaching and learning	2.23	Rarely utilized
4	Use of E-journals by both students and lecturers	2.52	Fairly Utilize
5	Use of Flash drives by both students and lecturers	2.52	Fairly Utilize
6	Use of ICT Centre for teaching and learning activities	3.54	Adequately Utilize
7	Use of Whiteboards for teaching and learning activities	3.12	Adequately Utilize
8	Use of Internet services in the college	2.53	Fairly Utilize
9	Use of Links to educational resources	2.25	Rarely utilized
10	Use of Multimedia projectors for teaching and learning	2.64	Fairly Utilize
11	Use of Television sets for teaching and learning	2.32	Rarely utilized
12	Use of E-Library for teaching and learning	3.15	Adequately Utilize
		2.63	Fairly utilized

[Source: Research Survey 2024]

From the analysis in Table 4, it is clear that with a calculated mean score of between 2.15 and 3.54 most of the available e-learning facilities in the colleges of education are rarely utilized or adequately utilized. On average, with a cumulative mean score of 2.65, the level of utilization of e-learning facilities for effective teaching and learning in Colleges of Education in Adamawa State is rated fairly utilized by the respondents.

Research Question Two: What effects does the use of e-learning resources have on efficient instruction and learning at Adamawa State's colleges of education?

The information used to address the second study question above was examined, and the results are shown in Table 5:

Table 5: Shows the effects of using e-learning resources for efficient instruction and learning at Adamawa State's colleges of education

S/N	Items	Mean	Decision
1	E-learning improved students' academic performance,	2.57	Agreed
2	E-learning facilitates the learning process	2.64	Agreed
3	E-learning facilitate self-development	2.67	Agreed
4	E-learning helps meet the diverse needs of students,	3.14	Agreed
5	E-learning helps in supporting individuals with disabilities,	2.78	Agreed
6	E-learning Provides Access to Huge sources of Information,	2.57	Agreed
7	E-learning Improves the Quality of Teaching and learning,	3.09	Agreed

8	E-learning, Reduces the Burden on the Teachers,	2.59	Agreed
9	E-learning challenges Students to Learn Independently.	2.74	Agreed
10	E-learning is essential because it allows for individualized learning	2.66	Agreed
		2.73	Agreed

[Sources: Research Survey 2024]

It is evident from the data in Table 5 that using e-learning resources has the following effects on teaching and learning in Adamawa State's colleges of education: The academic performance of students was enhanced via e-learning. In addition to helping students meet their varied needs, e-learning also supports people with impairments and facilitates the learning process and self-development. Access to vast information sources is made possible via e-learning. E-learning raises the standard of instruction and learning. E-learning lessens the workload for educators because it enables customized learning, e-learning is crucial and pushes students to learn on their own. These claims have a mean score range of 2.57 to 3.14 to substantiate them.

Research Question Three: What obstacles prevent Adamawa State's colleges of education from using e-learning resources for efficient instruction and learning?

Following analysis, the summary of the data used to address research question three is shown in Table 6:

Table 6: Obstacles to Lecturers' and Students' Effective Use of E-Learning Resources for Teaching and Learning in Education Colleges.

S/N	Items	Mean	Decision
1.	Funds are not sufficient for the development of e-learning infrastructures.	2.73	Agreed
2.	High cost is a factor that deters the use of the Internet by students and lecturers.	2.84	Agreed
3.	The high cost of Data' affects the use of Internet services.	2.56	Agreed
4.	The high cost of maintaining electronic gadgets discourages their use for Teaching and learning.	3.03	Agreed
5.	The high cost of purchasing relevant materials online discourages internet usage.	2.52	Agreed
6.	Lack of manpower to maintain Information Communication Technology (ICT) infrastructures affects their use.	2.53	Agreed
7.	Lecturers may lose class control if e-learning is encouraged.	3.01	Agreed
8.	Poor power supply affects the use of electronic devices for teaching and learning.	2.53	Agreed
9.	Relevant materials are difficult to find on the internet	2.74	Agreed
10.	Too many restrictions in accessing relevant educational materials.	2.61	Agreed
11	Use of electronic devices encourages laziness in students.	2.89	Agreed
		2.73	Agreed

[Sources: Research Survey 2024]

The analysis's summary in Table 6 shows that inadequate funding, high e-learning facility costs, high data costs, high maintenance costs for electronic devices, the high price of buying pertinent resources online, insufficient personnel to keep up e-learning facilities, If e-learning is promoted, lecturers may lose control over the class. Inadequate power source, finding pertinent content online might be challenging. The main obstacles to lecturers and students using e-learning facilities for effective teaching and learning in education colleges are excessive limitations on accessing pertinent educational materials and the tendency for students to become lazy when using electronic gadgets.

Discussion of the Findings

It is evident from the study's results that the majority of the e-learning resources offered by education colleges are either infrequently or sufficiently used, with mean ratings ranging from 2.15 to 3.54. The respondents rate the use of e-learning resources for efficient teaching and learning in Adamawa State's colleges of education as being fairly utilized, with an average cumulative mean score of 2.65. These results were consistent with those of Akanbi (2020), who found that teachers were not making efficient use of the e-learning resources offered by educational institutions. The results also conflict with those of Eze *et al.* (2018), who looked into the "utilization of e-learning facilities in the education system of a university" and came to the conclusion that instructors at the sampled institution made good use of the sufficient and accessible e-learning resources.

According to the study's findings, using e-learning resources to support efficient teaching and learning in Adamawa State's colleges of education has the following effects: Students' academic performance was enhanced via e-learning, which also facilitated the learning process and allowed for self-development. E-learning facilitates the meeting of students' varied requirements, supports those with impairments, and gives access to a wealth of information sources. E-learning lessens the workload for teachers and enhances the quality of teaching and learning. Because it enables customized learning, e-learning is crucial and pushes students to learn on their own. With a mean score range of 2.57 to 3.14, these claims are validated. This finding agreed with the findings of Fayomi *et al.* (2015) whose studies found that "e-learning facilitated studies significantly improved students' academic performance, learning process and self-development" and Malale, Gomba & Dichaba (2018) and Meskhi, Ponomareva & Ugnich (2019), whose studies revealed that e-learning is advantageous in multiple aspects, including Meeting the diverse needs of students, supporting individuals with disabilities, engaging learners who do not respond well to traditional educational settings,

Inadequate funding, the high cost of e-learning facilities, the high cost of data, the high cost of maintaining electronic devices, the high cost of buying pertinent resources online, and insufficient personnel to keep up e-learning facilities, if e-learning is promoted, lecturers may lose control over the class. Inadequate power source, finding pertinent content online might be challenging. The main obstacles to lecturers and students using e-learning facilities for effective teaching and learning in education colleges are too many restrictions on obtaining pertinent educational materials and the tendency for students to get lazy when using electronic devices. This result was consistent with research by Aboderin (2015), Aminu & Rahaman (2014), Eze, Chinedu-Eze, & Bello (2018), and Olowonisi (2016), which found that the main obstacles to lecturers' and students' use of e-learning facilities for effective teaching and learning are: a lack of knowledge about the technologies available for instruction; erratic power supplies; poor bandwidth connectivity; and poor maintenance of available facilities for sustainability.

CONCLUSION

The fair utilization of e-learning facilities in Colleges of Education as found out by this study presents numerous benefits that contribute to effective teaching and learning. Enhanced accessibility, improved engagement through interactivity, and cost-effectiveness are key advantages that support this mode of education. However, addressing the challenges associated with the utilization of e-learning facilities in colleges of education is crucial for maximizing the potential benefits.

It is in line with the above that this paper recommends the following:

- (i) There is a need for Continuous professional development for educators to effectively utilize e-learning facilities.
- (ii) There is a need for investment in e-learning facilities by government, non-government organizations and private individuals interested in education at the college of education level.
- (iii) In order to guarantee that all colleges of education have access to high-speed Internet broadband, the Federal Government should move quickly to implement the National ICT Policy.
- (iv) The government needs to be ready to embrace the paradigm shift to e-learning without regard to party lines.
- (v) Enough money should be set aside by the government for the acquisition and upkeep of e-learning facilities.

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