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Availability and Adequacy of E-Learning Facilities for Effective Teaching and Learning in Colleges of Education in Adamawa State, Nigeria

[1]Yusuf Bakari (Ph.D.) and [2]Lawson Luka

[1,2] Educational Foundations Department, School Of General Education, Federal College Of Education, Yola, Adamawa State, Nigeria
Email: lawson.luka@fceyola.edu.ng

ABSTRACT

This study aims to examine the availability and adequacy of e-learning resources for effective teaching and learning in Colleges of Education in Adamawa State, Nigeria. Two research questions were raised to guide the study. The survey research design was utilized for this investigation. The study focuses on two colleges of education in Adamawa State, Nigeria: the Federal College of Education Yola and the Adamawa State College of Education in Hong. The target population includes 9,624 individuals, consisting of 693 lecturers, the entire 8,901 student body, all 17 e-library staff, and all 13 ICT center staff from the two institutions. Given the large size of the target population, the Taro Yamane sampling technique was employed to select respondents for the study, resulting in a sample of 384 individuals, including 28 lecturers, 350 students, 4 e-library staff, and 2 ICT center staff. A structured questionnaire composed of 24 items, and tagged "Availability and Adequacy of E-learning Facilities Opinion Questionnaire" (AaAELFOQ), was utilized to gather data from the participants in the study. The questionnaire features four-point rating scales. The instrument for the study was validated by two experts, one in ICT and the other in Education, to ensure both face and content validity. To determine the reliability of the instrument, a pilot study was carried out. The researchers distributed 50 copies of the questionnaire to 30 students and 20 lecturers at the Taraba State College of Education in Zing, who were not part of the main study but shared similar characteristics based on the objectives, mission, and geographical region (geopolitical zoning). The data collected were compiled and analyzed for reliability using Cronbach's Alpha statistic. The overall reliability coefficient obtained for the instrument was 0.792. This total reliability coefficient of 0.792. The findings of the study revealed that while there is a growing recognition of the importance of e-learning facilities in enhancing educational outcomes at colleges of education in Adamawa State, significant gaps remain regarding both availability and adequacy. To enhance the effectiveness of e-learning facilities in colleges of education in Adamawa State: Educational authorities should ensure that curricula incorporate digital literacy components that prepare students for an increasingly digital world.

And there is the need for establishing dedicated technical support teams can help address issues related to technology use promptly.

KEYWORDS: Availability, Adequacy, E-Learning Facilities, Effective Teaching and Learning and Colleges of Education

Introduction

The educational landscape has undergone significant changes with the emergence of e-learning technologies, incorporating these tools into colleges of education is essential for improving teaching and learning results. The integration of e-learning resources in educational institutions, akin to the adoption of contemporary technologies, is increasingly vital, particularly in the field of higher education and especially in colleges of education which are responsible for training future teachers, which makes the availability and sufficiency of e-learning resources (emerging technologies) crucial for effective teaching and learning (Nyako, Ochoyi and Lawson, 2023).

The integration of e-learning in teaching and learning has shifted education from traditional methods to a modular, ICT-driven, customized, adaptable, and collaborative approach involving learners, instructors, facilitators, and specialists (Falana, 2015 and Olojo et al., 2012). This is attributed to e-learning, which involves a simplified and collaborative computer-supported learning process and assessment methods that leverage technology and other software, such as wikis, blogs, podcasts, and learning management systems, to enhance teaching and research (Mahahusudhan, 2008 and Nadiu, 2006).

Although the advantages of using e-learning facilities in teaching and learning are clear, Achuonye & Diseph (2021) observed that, despite a growing awareness of Information and Communication Technologies (ICTs) and online programs in Nigerian higher education, these objectives remain largely unattainable because many institutions only partially utilize e-learning facilities. Additionally, Adelabu, Adu, and Adjorgri (2014) identified insufficient funding, high facility costs, and expensive maintenance as barriers to e-learning resource utilization, noting a shortage of qualified teachers for e-learning, as well as a lack of facilities, infrastructure, and equipment (Jegede and Owolabi, 2008). Consequently, this study aims to examine the availability and adequacy of e-learning resources for effective teaching and learning in Colleges of Education in Adamawa State, Nigeria.

Objectives of the Study

The main objective of the study is to examine the availability and adequacy of e-learning facilities for effective teaching and learning in Colleges of Education in Adamawa State, Nigeria. Specifically, the study is designed to:

1. Determine the availability of e-learning facilities for effective teaching and learning in Colleges of Education in Adamawa State.
2. Determine the Adequacy of e-learning facilities for effective teaching and learning in Colleges of Education in Adamawa State.

Research Questions

The following research questions were raised to guide the study:

1. What is the extent of the availability of e-learning facilities for effective teaching and learning in Colleges of Education in Adamawa State?
2. What is the extent of the Adequacy of e-learning facilities for effective teaching and learning in Colleges of Education in Adamawa State?

REVIEW OF RELATED LITERATURE

The term "electronic learning tools" refers to digital technologies such as electronic boards, the internet, projectors, and computers, along with application software used for teaching, presentations, and research and publication activities, especially within higher education. According to Adesoji (2012) e-learning consists of materials and applications related to computers and information communication technology (ICT) that facilitate the gathering and sharing of information, research, and the worldwide exchange of ideas, which are essential for promoting significant educational endeavors and comprehending matters pertaining to global development. On a similar note, Abbad, Morris, & de Nahlik (2009) described e-learning as any form of learning that is made possible through electronic means, utilizing electronic learning tools.

Adebayo (2002) noted that e-learning tools include the use of computers, radios, satellites, online self-study packages, teleconferencing systems, interactive CDs, video conferencing, digital cameras, electronic mails, video cassette recorders, internet optical fiber technologies, and all varieties of Information Technology (IT) hardware and software. These tools can be employed both inside and outside the classroom. Nowadays, educational ICT has embraced a broad spectrum of technologies including virtual reality, video conferencing, handheld devices, digital cameras, the World Wide Web (WWW), and digital libraries (Mathevula & Uwizeyimana, 2014). The availability of these e-learning tools signifies the presence and accessibility of electronic devices utilized in teaching and learning. When these devices are applied, they provide a powerful learning environment and can revolutionize the teaching/learning process, allowing students to engage actively, even in a self-directed manner.

Nanna's (2024) research evaluated the incorporation of e-learning platforms in facilitating effective teaching and learning of Chemistry in colleges of education in South-East Nigeria, particularly in Anambra and Imo States. The study's findings indicated, among other things, that e-learning platforms such as WhatsApp Teaching and Google Classroom are not only accessible but are frequently used in the educational process. Aginam (2006), as cited in Uchendu (2012), revealed that the application level of e-learning tools, reflected in the use of ICT in Nigerian universities, is below five percent. He further asserted that these universities often lack sufficient infrastructure for cyber centers, computer-equipped classrooms, or high-speed internet, and may be financially incapable of establishing such resources. In essence, the tools are typically unavailable and insufficient.

Research conducted by Akanbi (2020) on the “availability and use of e-learning tools in teaching senior secondary school physics in Ilorin” found that nearly all the e-learning tools identified in the research were insufficient, and those that were available were not being effectively utilized by educators. Achuonye & Diseph (2021) carried out a study focused on the “availability of e-learning tools for effective instructional processes in tertiary institutions in Rivers State.” Their findings revealed that e-learning equipment, including interactive whiteboards, computers, projectors, TV sets, and printers, are lacking. A study by Wokocha, Babalola, & Agbagbue (2017) examined the availability of e-learning resources in the teaching and learning of undergraduate business education in Rivers State universities. Their findings indicated that e-learning resources such as computers, laptops, and internet applications are available for teaching and learning.

RESEARCH METHODOLOGY

The survey research design was utilized for this investigation. This design was chosen due to its cost-effectiveness, broad reach, flexible administration alternatives, reliability of the collected data, and its applicability across various methodologies, and compliance with strict methodological standards. The study focuses on two colleges of education in Adamawa State, Nigeria: the Federal College of Education Yola and the Adamawa State College of Education in Hong.

The target population includes 9,624 individuals, consisting of 693 lecturers, the entire 8,901 student body, all 17 e-library staff, and all 13 ICT center staff from both institutions. Given the large size of the target population, the Taro Yamane sampling technique was employed to select respondents for the study, resulting in a sample of 384 individuals, including 28 lecturers, 350 students, 4 e-library staff, and 2 ICT center staff. A structured questionnaire composed of 24 items, and tagged “Availability and Adequacy of E-learning Facilities Opinion Questionnaire” (AaAELFOQ), was utilized to gather data from the participants in the study. The questionnaire is divided into two sections (A and B), with Section A capturing the respondents' demographic information, while Section B addressing the two objectives of the research. The questionnaire features four-point rating scales for:

a. Available, Fairly Available, Rarely Available, and Not Available for the first objective.

b. Adequate, Fairly Adequate, Rarely Adequate, and Not Adequate for the second objective.

The instrument for the study was validated by two experts, one in ICT and the other in Education, to ensure both face and content validity. To determine the reliability of the instrument, a pilot study was carried out. The researchers distributed 50 copies of the questionnaire to 30 students and 20 lecturers at the Taraba State College of Education in Zing, who were not part of the main study but shared similar characteristics based on the objectives, mission, and geographical region (geopolitical zoning). The 50 questionnaires provided to these selected respondents were collected by the researchers the same day. The data were compiled and analyzed for reliability using Cronbach's Alpha statistic. This method was chosen because it allowed the researchers to assess the internal consistency of the items in the instrument. The overall reliability coefficient obtained for the instrument was 0.792. This total reliability coefficient of 0.792 for the instrument was deemed sufficiently high and reliable for use in the study.

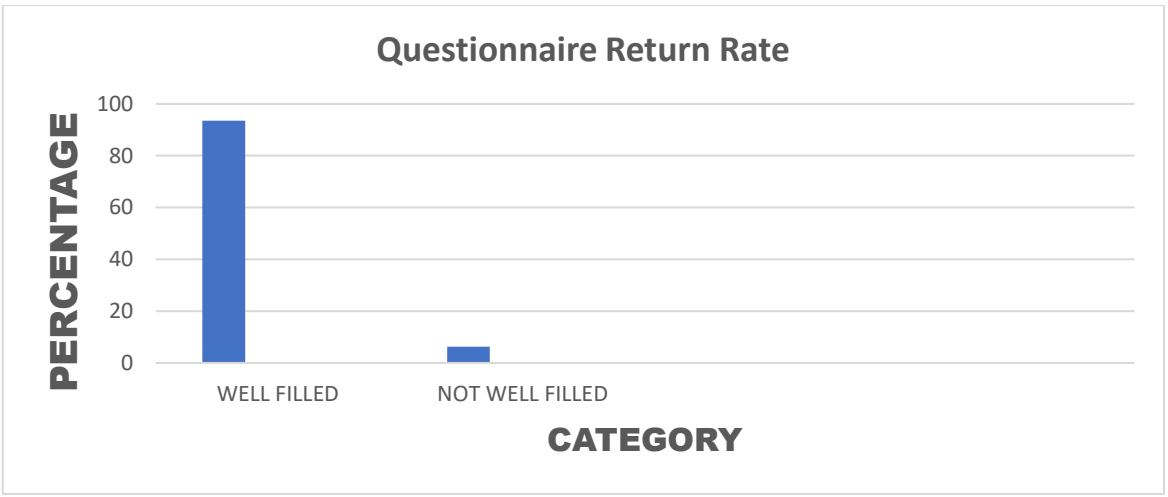
Two methods of data analysis were used for analyzing data for the study:

1. The simple percentage was used for analyzing respondents bio-data
2. The mean score methods of data analysis was used to answer the research questions that were raised in chapter one of this study.

RESULT AND DISCUSSIONS

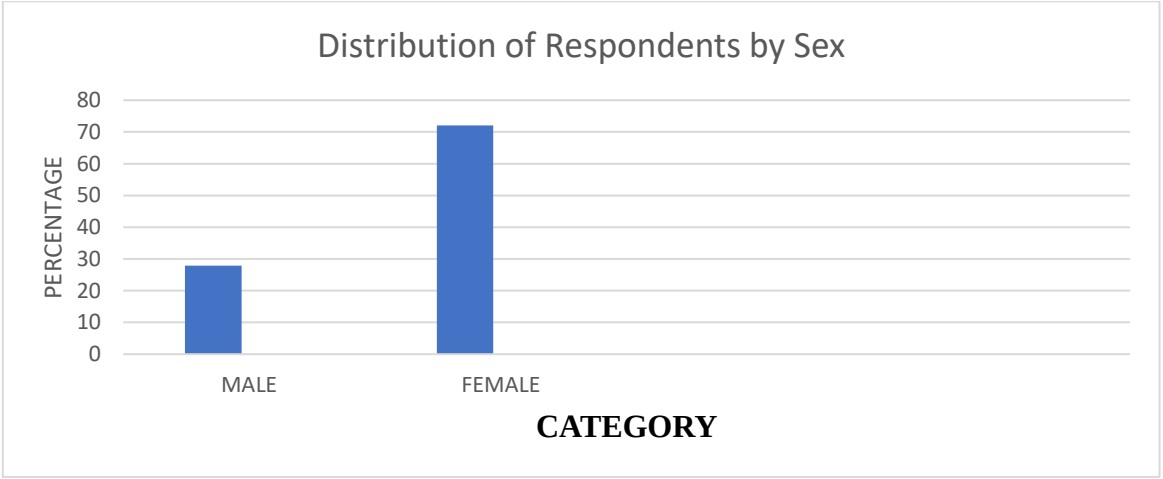
Questionnaire Return Rate

FIGURE 1: Questionnaire Return Rate



According to the analysis in figure 1 above, 359 of the 384 questionnaires that were given to the sampled population for the study in the two Colleges of Education in Adamawa State were returned and completed correctly, while 25 of the questionnaires, or 6.5 percent, were either not returned or not completed correctly.

Figure 2: Distribution of Respondents by Sex



Source: Research Survey 2024

From the information in figure 2 above, it is clear that out of the 359 respondents, 27.9 percent representing 100 respondents are male while 72.1 percent representing 259 respondents are female.

Answering the Research Questions

Research Question One: What is the extent of the availability of e-learning facilities for effective teaching and learning in Colleges of Education in Adamawa State?

The responses of the respondents for answering research question one were analyzed and the summary is presented in table one below:

Table 1: Availability of E-Learning Facilities for Effective Teaching and Learning in Colleges of Education

S/N	ITEMS n=359	Frequency	Mean	Decision
1	College website.	1, 080	3.01	Available
2	Computers	901	2.51	Fairly Available
3	Digital Video Disk players	725	2.02	Rarely Available
4	E-journals.	764	2.13	Rarely Available
5	Flash drives	872	2.43	Rarely Available
6	ICT Centre	1, 113	3.10	Available
7	White boards	1, 120	3.12	Available
8	Internet services	1, 084	3.02	Available
9	Links to educational resources	840	2.34	Rarely Available
10	Multimedia projectors	990	2.76	Available
11	Television sets	919	2.56	Available
12	E-Library	1, 102	3.07	Available
	GRAND TOTAL	**916**	**2.68**	**Available**

Source: Research Survey 2024

With computed mean scores ranging from 2.02 to 3.12, it is evident from the study in table one above that e-learning resources in colleges of education are either scarce or rarely available. The table showed that, on the average, e-learning facilities are available at education colleges, with a grand mean of 2.68.

Research Question One: What is the extent of the Adequacy of e-learning facilities for effective teaching and learning in Colleges of Education in Adamawa State?

The responses of the respondents for answering research question two were analyzed and the summary is presented in table two below:

Table 2 Adequacy of E-Learning Facilities for Effective Teaching and Learning in Colleges of Education

S/N	ITEMS n=359	Frequency	Mean	Decision
1	College website.	1, 010	2.81	Adequate
2	Computers	723	2.01	Rarely Adequate
3	Digital Video Disk players	718	2.00	Rarely Adequate
4	E-journals.	721	2.01	Rarely Adequate
5	Flash drives	772	2.15	Rarely Adequate
6	ICT Centre	1, 003	2.79	Adequate
7	White boards	1, 100	3.09	Adequate
8	Internet services	1, 012	2,82	Adequate
9	Links to educational resources	740	2.06	Rarely Adequate
10	Multimedia projectors	896	2.50	Adequate

11	Television sets	719	2.01	Rarely Adequate
12	E-Library	1, 002	2.79	Adequate
	GRAND TOTAL	**785**	**2.34**	**Rarely Adequate**

Source: Research Survey 2024

From the analysis in table one above it is clear that with calculated mean scores of between 2.01 to 3.09 it is clear that the e-learning facilities available in the Colleges of education are either rarely adequate or adequate. With a grand mean of 2.34 the table revealed on the average the e-learning facilities that are available in Colleges of education are rarely Adequate.

Discussion of the findings

From the analysis in table one it is clear that with calculated mean scores of between 2.02 to 3.12 it is clear that College website, Computers, Digital Video Disk players, E-journals, Flash drives, ICT Centre, White boards, Internet services, Links to educational resources, Multimedia projectors, Television sets and E-Library are either rarely available or available. With a grand mean of 2.68 the table revealed on the average the e-learning facilities in Colleges of education are available. This finding agreed with the findings of Wokocha, Babalola, & Agbagbue, (2017) whose findings revealed among others that a greater number and percentage of the e-learning facilities are available. The finding of the study disagreed with the findings of Aginam (2006) as cited in Uchendu (2012) who revealed that the level of application of e-learning facilities in form of ICT in Nigerian universities is less than five per cent because most of these universities have little or no e-learning facilities.

From the analysis in table two it is clear that with calculated mean scores of between 2.01 to 3.09 e-learning facilities like: College website, Computers, Digital Video Disk players, E-journals, Flash drives, ICT Centre, White boards, Internet services, Links to educational resources, Multimedia projectors, Television sets and E-Library that available in the Colleges of education are rarely Adequate this is supported with an average mean score of 2.34. This finding agreed with the findings of Achuonye & Diseph (2021) and Akanbi (2020) whose finding revealed that e-learning facilities are inadequate in most educational institutions.

Conclusion and Recommendations

The integration of e-learning facilities in educational institutions has become increasingly important, especially in the context of higher education. In Adamawa State, Nigeria, colleges of education are tasked with preparing future educators, making the availability and adequacy of e-learning resources critical for effective teaching and learning. By addressing these areas systematically, colleges can create a more conducive environment for effective teaching and learning through e-learning. While there is a growing recognition of the importance of e-learning facilities in enhancing educational outcomes at colleges of education in Adamawa State, significant gaps remain regarding both availability and adequacy. Addressing these challenges requires concerted efforts from educational stakeholders at all levels to ensure that both students and educators can fully benefit from technological advancements.

To enhance the effectiveness of e-learning facilities in colleges of education in Adamawa State the following recommendations were put forward:

1. Educational authorities should ensure that curricula incorporate digital literacy components that prepare students for an increasingly digital world.
2. Establishing dedicated technical support teams can help address issues related to technology use promptly.
3. Regular training sessions for faculty on best practices for online teaching should be implemented.
4. There should be increased investment in reliable internet services and modern technological equipment.

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References:

Abbad, M. M., Morris, D., & de Nahlik, C. (2009). Looking under the Bonnet: Factors Affecting Student Adoption of E-learning Systems in Jordan. The International Review of Research in Open and Distance Learning.

Achuonye K. A & Diseph E (2021) Availability of E-Learning Facilities for Effective Instructional Process in Tertiary Institutions, Rivers State International Journal of Education and Evaluation E-ISSN 2489-0073 P- 7. (5) 98-107

Adelabu, O. A., Adu, E. O. & Adjorgri, S. J. (2014). The Availability and Utilization of ELearning Infrastructures for Teaching and Learning. Mediterranean Journal of Social Sciences, 5(23), 1348-1355.

Adesoji, F. F. (2012). Undergraduate students' perception of the effectiveness of ICT use in improving teaching and learning in Ekiti State University, Ado-Ekiti, Nigeria. International Journal of Library and Information Science 4(7), 121-130.

Akanbi, A. O. (2020). Availability and utilization of e-learning facilities in the teaching of senior school physics in Ilorin, Nigeria. Journal of Education and Learning, 14(3), 331-337. https://dx.doi.org/10.11591/edulearn.v14i3.16342

Falana, F. T. (2015.). Prospects and challenges of e-learning in nigerian university education using national open university of nigeria akure study center. Akoko: department of science and technical education (computer education unit) adekunle ajasin university akungba akoko.

Jegede, P. O. & Owolabi, A. J. (2008). Computer education in Nigerian secondary schools: Gaps between policy and practices Meridian: A Middle School Technology Journal, 6(2), 1-11. Retrieved from http://wwwnesu.edu/meridan/sun2003/nigeria:pdfMahahusudhan, 2008 and Nadiu, 2006)

Mathevula, Mlunghisi & Uwizeyimana, Dominique. (2014). The Challenges Facing the Integration of ICT in Teaching and Learning Activities in South African Rural Secondary Schools. Mediterranean Journal of Social Sciences. 5. 10.5901/mjss.2014.v5n20p1087.

Nnanna, I. F (2024) Assessing the Integration of E-Learning Platforms in Achieving Effective Teaching and Learning of Chemistry in Colleges of Education in South-East Nigeria, A Case Study of Anambra and Imo States International Journal of Research Publication and Reviews, Vol 5, no 2, pp 1948-1956

Nyako, A.A., Ochoyi, E.E and **LAWSON L,** (2023) Integration of Emerging Technologies in Teaching and Learning at the Federal College of Education, Yola, Adamawa State, Nigeria. ***International Journal of Research Publication and Reviews***, 4(10) 1441-1446

Olojo, O. J., Adewumi, M. G., & Ajisola, K. T. (2012). E-learning and its effects on teaching and learning in a global age. International Journal of Academic Research in Business and Social Sciences. 2(1), 203–210.

Uchendu, C.C. (2012). Information and Communication Technology (ICT): A Modern Tool for Educational Management in Nigerian Universities. Journal of African Studies in Educational Management and Leadership. 2(1), 7-15

Wokocha, K.D.K, Babalola, J.O & Agbagbue, A.O.S (2017) Availability of E-Learning Facilities in Teaching and Learning of Undergraduate Business Education in Rivers State Universities International Journal of Education and Evaluation 3 (5) 12-18