

Investigating The Availability of E-Learning Infrastructures in Taraba State Polytechnics, Nigeria

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Abstract: This study investigated the availability of e-learning infrastructure in Taraba State Polytechnics. The study is aimed at finding out the availability of E-learning infrastructure and the factors that militate against the use of e-learning infrastructure. Survey research design was adopted. The population of the study comprised of 200 lecturers and students in Federal Polytechnic Bali and Taraba State Polytechnic Suntai. 200 copies of questionnaire were administered to the respondent, it is essential to say that not all the questionnaire copies were retrieved from the respondents, hence the researcher worked with 173 questionnaire copies that were retrieved out of 200 copies. Mean and Standard deviation with five-point Likert scale was used to analyse the data. The study revealed that the availability of e-learning infrastructure is not sufficient and there are factors that militate against the use of e-learning infrastructure which includes; inadequate subscription by institution, high cost of e-learning gadgets, and unstable power supply among others. The study recommend that; Constant power supply of electricity and internet service should be provided, the government should make sure that sufficient electronic gadgets are available in schools for student practical experiences.

Keywords: availability, e-learning and infrastructure

INTRODUCTION

Technology is important for the successful delivery of e-learning, which must take into account the available infrastructures that is readily accessible. The world is changing into a global village and is becoming small day by day. E-learning has become a wide range of applications in terms of content, services and technology in other to enhance the productivity of individual and organization in educational sector (Jajere&Bukar2020). The concept of e-learning has to do with the use of Information and Communication Technology (ICT) to enhance and support teaching and learning process (Ezeh, Ekemezie, & Okafor 2021). According to (Akanbi 2020) e-learning have emerged as a result of the incorporation of Information and Communication Technology (ICT) in education. The growing popularity of e-learning in higher education can be attributed to the advancements in technology related to the internet, which offer benefits like greater availability, a reduction in costs and time, and enhanced learning outcomes. ICT is a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information, it makes education more accessible for all, bringing to the doorstep of children living in remote rural location by means of enabling distance learning (Das 2019). The Internet is one of the vital ways to make available resources for research and learning for both lecturers and students to share and acquire Information (Verma et al., 2020). In higher education, the internet is frequently utilized as a communication tool between lecturers and students. Technology-based e-learning encompasses the use of the internet and other important technologies to produce materials for teaching, learning, and also regulate courses in an institution (Isroani et al 2022).

The importance of e-learning and the role in integrating it into classroom has increase since the outbreak of the COVID-19 across the globe. E-learning, have been adopted by many higher education institutions in order to improve teaching and learning experiences and develop relevant skills (Eze, Chinedu-Eze, & Bello 2018). There has been extensive debate about a common definition of the term e-learning. According to (Khoiri et al., 2023) e- learning is a sort of distance learning where students and teachers interact

digitally rather than in person in the classroom, with the internet serving as the primary medium. They further states that Learning and technology are the two fundamental components of e-learning; learning is a cognitive process that aims to acquire information and knowledge, whilst technology serves as a medium to facilitate learning. E-learning as a concept covers a range of applications, learning methods and processes. The applications of e-learning include, computer based learning, web-based learning, virtual education opportunities and digital collaboration. Content is provided through internet, audio or video tape, CDROM, and satellite TV. E-learning can be self-paced or instructor-led that include image, media in the form of text, animation, and streaming video and audio (Ezeh, Ekemezie, & Okafor 2021). (Guragain 2016) e-learning reduces the need to travel longer distances or away from home to get the desired education. To effectively employ e-learning, lecturers and students must have appropriate training and support (Abu-Al-Aish & Jerash 2021).

The basic rule of e-learning is freedom from the restrictions of place and time (Liaw et al., 2020). E-learning comprises a lot more than online learning, virtual learning, distributed learning, networked or web-based learning. It incorporates all educational activities that are carried out by individuals or groups working online or offline, synchronously or asynchronously via networked or standalone computers and other electronic devices (Pauline &Antoney, 2018). (Li & Masters 2009) claimed that the letter “e” in e-learning stands for “evolving, enhanced, everywhere, every time and everybody” rather than referring only to electronic. (Richard & Caroline 2007) added that you cannot hand E-learning to a network administrator and be done with the job. To have an e-learning system means having people talking, writing, teaching, and learning with each other online, via computer-based systems. Students can interact and communicate with each other and with their lecturers through a computer network that allows for collaborative learning in the form of group work (Ahmad 2021). E-learning is seen as an alternative and innovative learning environment compared to traditional learning methods, offering learners flexibility, convenience, and cost-effectiveness (Eze., Chinedu-Eze., & Bello 2018). However there are many barriers to the use of e-learning infrastructure, some of this barriers include (Adeoye et al 2020) poor budgetary allocation by the government, corruptions. irregular power supply; inadequate trained human resources; insufficient instructional technologies; inadequate critical infrastructure such as telecommunication infrastructure, especially high speed Internet Broadband; unsatisfactory student-computer ratio; inadequate e-learning facilities; high cost of software; and the high cost of Internet broadband. Still, others include: the high cost of implementation; poor community literacy; technophobia and system failure (Bubou, & Job, 2021; Eze, et al 2018; Olowonisi, 2020).

The use of e-learning infrastructure in Nigerian education is no more a new innovation as most federal, state and private institutions use e-learning infrastructure to enhance teaching and learning, it make lecturers and students more knowledgeable. Therefore the use of e-learning infrastructure should be frequently and encouraged among the students and lecturers to achieve their educational goals. The successful adoption of technology in teaching and learning is largely dependent on the availability and sufficiency of e-learning infrastructures, as well as the competence of both educators and learners in using them (Adelabu, adu, & Adjogri, 2014).

This study therefore investigates the availability of e-learning infrastructures in Taraba State Polytechnics.

AIM AND OBJECTIONS OF THE STUDY

The aim of this research work is to investigate the availability of E-learning infrastructures for teaching and learning in Polytechnics of Taraba State.

The objectives of this research work include:

- To determine the availability of E-learning infrastructure in the Polytechnics
- To determine the factors that militate against the use of e-learning infrastructure

METHODS

The study adopted the survey research design. The design was appropriate since questionnaire was used to collect data for the study using random sampling technique. The case study of this study was two tertiary institution in Taraba State i.e Federal Polytechnic Bali and State Polytechnic Suntai, Taraba State, Nigeria. The population of the study comprised of lecturer and students of the above named institution. The sample size was 200 lecturers and students. Questionnaire was distributed to the lecturers and students. It is essential to say that not all the questionnaire copies were retrieved from the respondents, and as such, the researcher worked with 173 questionnaires copies that were retrieved out of 200 copies of the questionnaire distributed to the respondents in the institutions. The Research questions one and two were structured on 5 points Likert scale ranging from Strongly Agreed (SA) 5 points, Agreed (AG) 4 points, Undecided (UN) 3 points, Disagreed (DA) 2 points and Strongly Disagreed (SDA) 1 points. The instrument was titled available e-learning infrastructure in Taraba state Polytechnics, factors that militate against the use of e-learning infrastructure in Taraba State Polytechnics. Result was analysed using mean and standard deviation. Any item with mean rating of 3.00 and above were regarded as accepted while any item with mean rating below 3.00 was regarded as rejected.

Research Question One: What is the available e-learning infrastructure in Taraba state Polytechnics?

| S/N | Variables | SA | AG | UN | DA | SD | Mean | STD | Remark |
|-----|---|----|----|----|----|----|------|------|----------|
| 1 | My institution is well equipped with standard computer laboratory for students' practical | 97 | 73 | 0 | 2 | 1 | 4.27 | 2.07 | Accepted |
| 2 | Lecturers are provided with laptops that will enhance teaching and learning | 91 | 69 | 5 | 6 | 2 | 4.15 | 2.04 | Accepted |
| 3 | All classroom is equipped with projectors and LCD monitors for lecturers to communicate ideas to students | 6 | 3 | 2 | 82 | 80 | 1.60 | 1.26 | Rejected |
| 4 | Computers, interactive white boards and printers are available in the institution | 57 | 51 | 4 | 38 | 23 | 3.28 | 1.81 | Accepted |
| 5 | Internet service are provided | 7 | 9 | 1 | 76 | 80 | 1.67 | 1.29 | Rejected |
| 6 | The institution provides sufficient, swift, and stable internet service. | 3 | 4 | 22 | 91 | 53 | 1.81 | 1.35 | Rejected |
| 7 | The institution's websites provided access to course materials and learning tools. | 0 | 0 | 9 | 90 | 74 | 1.54 | 1.24 | Rejected |
| 8 | There is a variety of software available to help in learning and teaching. | 11 | 9 | 2 | 68 | 83 | 1.73 | 1.31 | Rejected |
| 9 | Institution has e-library | 88 | 76 | 2 | 2 | 5 | 4.15 | 2.04 | Accepted |
| 10 | e-library is effective | 91 | 69 | 5 | 6 | 2 | 4.15 | 2.04 | Accepted |
| 11 | Television sets are available | 10 | 8 | 4 | 86 | 65 | 1.81 | 1.34 | Rejected |

Data presented in Table 1 above reveals that the mean score of responses that shows acceptance ranged from 3.15 to 4.55. These are within the limit of 3.00 to 5.00 on 5 point Likert scale. The data presented above that shows that 5 items were within the decision rule, and they were accepted as available e-learning infrastructure in the Polytechnics. 6 items were rejected by not meeting up with the decision rule of 3.00 and above.

Research Question Two: Factors that militate against the use of e-learning infrastructure in Taraba State Polytechnics.

| S/N | Variables | SA | AG | UN | DA | SD | Mean | STD | Remark |
|-----|---|-----|----|----|----|----|------|------|----------|
| 1 | High cost of internet and data services | 79 | 58 | 0 | 14 | 22 | 3.70 | 1.92 | Accepted |
| 2 | Inadequate subscription by institution | 110 | 56 | 0 | 2 | 5 | 4.28 | 2.07 | Accepted |
| 3 | High cost of e-learning gadgets | 67 | 39 | 0 | 36 | 31 | 3.25 | 1.80 | Accepted |
| 4 | Unstable power supply | 101 | 55 | 1 | 5 | 11 | 4.09 | 2.02 | Accepted |
| 5 | Lecturers prefer traditional way of teaching than e-learning | 59 | 66 | 0 | 21 | 27 | 3.43 | 1.85 | Accepted |
| 6 | Inadequate facilities and equipment for teaching and learning | 52 | 61 | 4 | 35 | 21 | 3.32 | 1.82 | Accepted |
| 7 | Inadequate budgetary allocation by the government | 64 | 88 | 1 | 9 | 11 | 3.85 | 1.96 | Accepted |
| 8 | Restrictions in accessing some relevant educational materials | 12 | 23 | 3 | 65 | 70 | 1.97 | 1.40 | Rejected |
| 9 | Low level of preparedness among the students | 43 | 59 | 2 | 34 | 35 | 3.06 | 1.75 | Accepted |

Data presented in Table 2 above reveals that the mean score of responses that shows acceptance on 8 out of the 9 identified items ranged from 3.11 to 4.55. These are within the limit of 3.00 to 5.00 on 5 point Likert rating scale. The data presented above that shows that 8 items were within the decision rule, and they were accepted as factors that militate against the use of e-learning infrastructure in Polytechnics of Taraba State.

DISCUSSION OF FINDINGS

The study examined the availability of e-learning infrastructures for teaching and learning in Polytechnics of Taraba State. The study found that the available e-learning infrastructure include computer laboratory for students’ practical, laptops for lecturers, interactive white boards and printers among others. The e-learning infrastructures are not adequately available in the institutions. This Corroborate the report of (Adelabu, adu, & Adjogri, 2014) that e-learning infrastructures are not adequate in higher institutions of learning and the development of ICT is mainly for administrative purposes. In

order to cope with students and lecturers demand, the Polytechnics must increase the availability of e-learning infrastructures.

Similarly, the study reveals that high cost of internet and data services, inadequate subscription by institution, high cost of e-learning gadgets, and unstable power supply among others are the factors that militate against the use of e-learning infrastructures in Taraba State Polytechnics. This goes in line with view of (Dibbari, J. C. 2021) high cost of e-learning gadget , poor management of education are the challenges of e-learning.

CONCLUSION

The e-learning infrastructure in Taraba State Polytechnics is a priority because of national and global relevance. The availability and effective use of these infrastructures will enhance quality of teaching and learning in the Polytechnics The study revealed that e-learning infrastructures in Taraba state Polytechnics are not sufficiently available. The use of e-learning infrastructure in this technology era in tertiary institution is unavoidable and very important for lecturers and students.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations were made:

- Workshops and seminars should be organized for lecturers and students to minimize factors that hinder e-learning infrastructure.
- The management should encourage their lecturers and students on the use of e-learning infrastructure for teaching and learning.
- Constant power supply of electricity and internet service should be provide
- The government should make sure that sufficient electronic gadgets are available in schools for student practical experiences.

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