Assessment of the Availability of E-Learning Resources for African Undergraduates: An Approach to the Issue

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Abstract: E-Learning has become an increasingly popular learning approach in higher educational institutions due to the vast growth of internet technology. However, some schools do not even have the technologies needed to explore e-learning. The main purpose of this research was to assess the availability of e-learning resources for African undergraduates with an approach to the issue. Specifically, the study examined the available e-learning resources and examined the adequacy of the available e-learning resources. This research was a descriptive research of the survey method and the respondents comprised 320 undergraduate students of the University of Ilorin, Ilorin, Nigeria. The findings established that internet facilities, multimedia projectors, computers, e-books, e-mails, and virtual classrooms are e-learning resources available for learning, while internet facilities, multimedia projectors, computers, e-books, e-mails, and virtual classrooms are e-learning resources available for learning. It was however recommended that Universities should improve on the infrastructural facilities to make e-learning resources more available to all their students and Universities should monitor the e-learning resources and check their adequacy to the students.

Key-words: availability; e-learning resources; adequacy; supporting; teaching-learning process.

1. Introduction

It is a popular saying that knowledge is wealth. This is very true as no meaningful development takes place without the application of knowledge. According to Adeola, Adewale, & Alese, (2013), one of the major differences

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between primordial man and the modern man is that the latter possesses a body of knowledge through education that the former lacks. Education in its general sense is a form of learning in which the knowledge, skills, and habits of a group of people are transferred from one generation to the next through teaching, training, or research (Atiyah, Sherbiny, & Guirgiuis, 2015). Innovations to the educational system are vital to improving the schools' efficiency and productivity in the 21st century (Syariff, Dayang, Musa, Khalip & Yusof, 2021).

Education can be delivered using various methods (which give various types of learning) including Traditional lecturing, E-learning, M-learning, D-learning, and B-learning. Traditional lecturing is usually defined as actions under the guidance of the teacher aiming at bringing some relatively permanent change in the way students think, feel or act. E-learning (Electronic Learning) is usually defined as education based on modern methods of communication including the computer and its networks, various audio-visual materials, search engines, electronic libraries, and websites, whether accomplished in the classroom or at a distance; M-learning (Mobile Learning) is usually defined as learning employing wireless technology devices that can be pocketed and utilized wherever the learner's device can receive unbroken transmission signals; D-learning (Distance Learning) is usually defined as all learning that takes place where there is no face to face interaction between students and between students and teachers; B-learning (Blended Learning) is usually defined as enriched, student-centered achieved by combining face to face interaction with information and communication technology (Atiyah et-al, 2015). Education should not only be extensive, affordable, and excellent but should also be continually developing to address the demands of a quickly shifting and volatile globalized environment. (Serdyukov, 2017)

Since the immediate solution to the problem of population explosion confronting the universities should be the introduction of means of sharing the limited professionals to maximize the limited resources available, It becomes pertinent, therefore, that a new scheme is evolved where the remaining number of experts and professionals in the university system could be retained and their potential optimized. To arrest these ugly trends in our educational system, Technology immediately becomes the reference point. The advent of technology has changed the way things are being done. Adeola et al (2013), describes Information and Communication Technology (ICT) as a generic term referring to technologies that are being used for collecting, storing, editing, and passing information in various forms. In the last ten years, researchers have looked at how innovation affects performance in a variety of contexts. They discovered a favorable correlation between these factors (Adam et al., 2021). Other recent research has found that the level of

creativity or innovation used in the organizational process also affects how well an organization performs (Adelowotan, 2021).

E-learning is technology-based learning such as computer-based learning, virtual classroom, and digital collaboration. It is the general term used to refer to computer enhance learning (Adeola et al, 2013). E-Learning has become an increasingly popular learning approach in higher educational institutions due to the vast growth of internet technology. Nowadays E-learning has a competitive advantage and many universities have implemented it this has an impact on student's performance or GPA. Traditional classroom settings with a teacher in charge and students and teachers present have been the mainstay of education for millennia (Coman et al., 2020). Even before the COVID-19 pandemic era, several universities were already using open distance and e-learning as a method of delivering educational content to their distance and open learning students. The use of a flipped classroom model, in which teachers provide assignments and student responses are submitted via the school's learning management system, could promote fruitful intellectual conversation (Hew et al., 2018). Technology is a tool used to remove geographical barriers and facilitates everybody to learn anytime and anywhere without the presence of a lecturer. The main purpose of E-Learning is to increase the accessibility of education and reduce costs and time as well as improve students' academic performance. This approach to learning facilitates different students on different continents to attend the same classes almost at the same time.

Akogun & Arowona, (2016) establish that the University of Ilorin has introduced a new policy of one-student-one-IPAD beginning from the 2013/2014 academic session; the policy is aimed at boosting the University's ICT drive and enhancing e-communication between the students and their lecturers. The PC tablet would be a virtual classroom with all the curriculum and courseware pre-uploaded on it as e-learning resources for learning.

2. Statement of the Problem

Even though the Millennium Development Goals (MDGs), as well as the transformation agenda of the Nigerian government, placed a premium on education as a vital tool towards the realization of the objectives of national development, greater attention has been given to e-learning and the richness of its content and resources in recent times, especially in the area of teaching and learning (Ogunkunle & Adekola, 2014). The Nigerian university system is still far from ICT compliance. It looks incredible that many universities are still using of traditional blackboard and chalk teaching method in Nigeria. The closest to e-learning is the case of Nigeria Open University. The conventional universities in Nigeria are still far behind in taking advantage of huge opportunities in e-learning (Nwabufo, Umoru, & Olukotun, 2011).

Purpose of the Study

The main purpose of this research was to evaluate the availability of e-learning resources for African undergraduates: An approach to the issue.

Specifically, the study;

1. Examined the available e-learning resources within the University of Ilorin.
2. Examined the adequacy of the available e-learning resources.

Research Questions

This study provided answers to the following research questions:

1. What are the available e-learning resources at the University of Ilorin?
2. Are the available e-learning resources adequate for the students?

3. Literature on the Availability of E-learning Resources

Before the advent of the internet and computer, people generally make use of printed forms of books, journals, magazines, directories, maps, and dictionaries, recently most of these printed materials have been replaced electronically and available in digital forms, hence e-version is available to users that can be easily accessed at user's pace. E-learning has proven to be the best and fastest means of exposing learners to newer technology (Obara & Abulokwe). The availability of E-learning resources allows the teacher to train students on how to study independently and conduct research (Ayere, Odera, & Agak, 2010).

Daramola, (2016) believed the availability of e-resources has changed what learners read and utilize as a learner only makes use of what is easily available and accessible to them. Her study further shows that the major reason why undergraduate uses e-learning resources are majorly for assignment and research, the e-resources available are e-journals, e-books, manuscripts, e-data, archives, e-mail, and e-database among others but the rates at which students make use of the e-resources varies. Berzins & Hudson, (2011) explain that e-resources include: Virtual Learning Environments (VLEs), platform, research software, websites, mobile phone, and social networking that facilitates teaching and learning.

Ajadi, Salawu, & Adeoye, (2008) stated that although some Nigerian institutions had adopted the use of intranet facilities, this is not well maintained because of incessant power problems and the high cost of running generating sets. Most students in Nigeria go to the cyber café, but because there are people of diverse intentions on the net at the same time, and the bandwidth problem, a multimedia interactive session times cannot be done. Despite all these and other challenges facing e-learning in Nigeria's

educational institutions, institutions such as the University of Ibadan, Ibadan, University of Ilorin, Ilorin, Obafemi Awolowo University, Ile-Ife, University of Benin, Benin, University of Abuja, Abuja, University of Lagos, Lagos, the National Open University of Nigeria among others has the e-learning facilities. The number of Universities with e-learning facilities however seems very low compared to other parts of the world and the usefulness of e-learning in economic development. Location of the institutions, bandwidth issues and mostly the challenge of electricity are major constraints hindering the use of e-learning facilities. Hence, the Nigeria university system is still far from ICT compliance (Ajadi et al, 2008)

The closest to the usage of e-learning is the case of Nigeria Open University. The Nigeria Open University combined the traditional learning paradigm with visual-assisted tools and teaching materials in form of video and projectors. Web-based instruction resources compliment these. This mode of learning ensures the students obtain maximum knowledge from the facilitators. Most conventional universities in Nigeria are however still far behind in taking advantage of the huge opportunities in e-learning. Most Universities are still lagging in taking advantage of the recent revolution in Information and Communicating Technology. They are still using the traditional mode of chalk and blackboard approach to teaching. Most of the school libraries are full of outdated books. Sometimes the books would have been stored for more than two years before it is made available for students' use. In addition, the libraries are not computerized. In most cases when they are computerized, it is only restricted to searching for materials on the shelf. Also, most of the library has no direct link with the subject lecturers in the acquisition of books. As a result, a tangible percentage of the books are outdated and irrelevant (Adeola, Adewale, & Alese, 2013).

Though e-learning has been given much prominence in Nigeria recently, Nigerian tertiary institutions however can be said to be behind in the adoption of these technologies as there is an extremely low rate of diffusion of e-learning and as a consequence, a low rate of usage. The reasons for this are not far-fetched; As Nigeria, apart from being a developing country and having an inadequate education finance policy, is also highly deficient in the area of engineering and technological development (Nwabufo et al, 2011).

4. Methodology

This research was a descriptive research of the survey method. The descriptive research method connotes describing the event(s), exactly as they appear without the manipulation of external researchers. This study employed a research-designed questionnaire to obtain necessary information from the respondents. The outstanding advantage associated with the use of

questionnaires is the accessibility given to a large population within a very short period.

The population for this study was all undergraduate students of the University of Ilorin, Ilorin, Nigeria. The target population for this study consists of all undergraduate students from the Faculty of Agricultural Science, Faculty of Education, Faculty of Engineering and Technology, and Faculty of Management Sciences. Simple random sampling was used to select respondents across the departments. Three hundred and twenty undergraduates were randomly selected from all the faculties. The numbers of undergraduates that were sampled from each faculty were shown in table 1. 1.2% of the total population of each faculty was sampled.

S/No	Faculties	Estimated Population	Sample Size
1	Agricultural science	5,740	74
2	Education	10,495	134
3	Engineering & Technology	4,430	56
4	Management sciences	4,445	56
	Total	25,110	320

Table 1. List of Faculties in the University, Estimated Population, and Sample Size. Source: Registrar 's office

The instrument that was used to gather data for this research was a researcher-design questionnaire. The questionnaire is titled "Assessment of Available E-learning Resources for Learning. It comprises three sections, sections A, B, and C. Section A consists of the demographic information of the respondents. The respondents are to provide information regarding their faculty, departments, and gender. Section B consists of the availability of e-learning resources. Six different e-learning resources are provided for the respondent to tick the ones available. Respond mode of Available and Not available are used for the variable of Availability. Section C contains the adequacy of the available e-learning resources. Six items were generated and response modes of the 4likert scale of *Strongly agree*, *Agree*, *Disagree*, and *Strongly disagree* were employed.

Five educational technology experts in the Department of Educational Technology, the University of Ilorin for face and content validated the research instrument. The validation process dealt with face validity that comprises the appropriateness of the title of the instrument, and compliance with the grammatical standard in constructing and arranging the items of the instruments. The content validity deals with the adequacy and coherence of items of the instrument concerning the research questions posed to ensure that the instrument remains valid. All correction made by the validators was used to produce the final draft of the research instrument. The reliability of the

research instrument was carried out by trial testing the research instrument on 50 undergraduate students of the Bamidele Olumilua University of Education, science and technology, Ikere-Ekiti, Ekiti State, Nigeria. The research instrument was administered to them and collected after being attended to. However, out of the 50 research instruments, responses from 47 were properly filled and returned and were subjected to Crombach's Alpha Statistical tool. The result was 7.86 for the section on the availability of e-learning resources and 7.49 for the section on the adequacy of e-learning resources. This indicated that research is reliable and can be adapted/adopted by future researchers

The researchers presented a letter of introduction and permission was sought from the authorities of the faculties where the research was conducted. The data was collected by administering the questionnaire by the researchers. The completed copies of the questionnaire were retrieved for further analysis. Ethical issues were considered in which all information provided by the respondents was used for research purposes only and treated with the utmost confidentiality. In addition, respondents were not compelled to fill out the questionnaire as this was done willingly and at their own convenient time. The analysis of data obtained through the questionnaire was done using descriptive and inferential statistics. Frequency and percentage were used to present the demographic information of the respondents and used to answer the research questions.

5. Results

This section deals with data presentation, and analysis. Three hundred and twenty (320) questionnaires were distributed out of which three hundred and six (306) were retrieved across four different faculties and analyzed based on the retrieval questionnaire with a return rate of 95.6%.

Research Question 1. What are the available e-learning resources at the University of Ilorin?

S\N	Items	Available	Not Available
1.	Internet facilities	306(100%)	00.0
2.	Multimedia projector	306(100%)	00.0
3.	Computer	306(100%)	00.0
4.	E-book	306(100%)	00.0
5.	E-mail	306(100%)	00.0
6.	Virtual classroom	306(100%)	00.0

Table 2. Available E-learning Resources

Table 2 examined the above table and shows that 306(100%) of the respondent's e-learning resources are available to undergraduates at the university of Ilorin. It established that internet facilities, multimedia projector, computer, e-book, e-mail, and virtual classroom are e-learning resources available for learning at the University of Ilorin.

Research Question 2. Are the available e-learning resources adequate for the students?

S\N		Items	Adequate	Not Adequate
	1.	Internet facilities	180(58.8%)	126(41.2%)
	2.	Multimedia projector	104(34.0%)	202(66.0%)
	3.	Computer	160(52.3%)	146(47.7%)
	4.	E-book	178(58.2%)	128(41.8%)
	5.	E-mail	224(73.2%)	82(26.8%)
	6.	Virtual classroom	104(34.0%)	202(66.0%)

Table 3. Adequacy of e-learning resources for the undergraduates.

Table 3 examined whether the e-learning resources are adequate for learning by undergraduates at the University of Ilorin. The results showed that the response frequency of the respondents on the adequacy of e-learning resources revealed that 180(58.8%) of the respondents claimed that internet facilities are adequate while 126(41.2%) of them claimed it is not adequate, 104(34.0%) of the respondents claimed that multimedia projector is adequate while 202(66.0%) of them claimed it is not adequate, 160(52.3%) of the respondents claimed that computer is adequate while 146(47.7%) of the respondents claimed not adequate, 178(58.2%) of the respondents claimed access to the e-book is adequate while 128(41.8%) of them claimed it is not adequate, 224(73.2%) of the respondents claimed access to email is adequate while 82(26.8%) of them claimed it is not adequate, 104(34.0%) of the respondents claimed virtual classroom is adequate while 202 (66.0%) of them claimed it is not adequate. From the findings, it can be deduced that Internet facilities, computers, E-books, and E-mail were e-learning resources that were adequate while Multimedia projectors and Virtual classroom e-learning resources were not adequate.

6. Discussion

The research sought to find out what are e-learning resources available to undergraduate students; the results obtained showed that internet facilities, multimedia projectors, computers, e-books, e-mail, and virtual classrooms are the most available e-learning resources for undergraduate students of the University of Ilorin among others. Doung (2016), students can study at home,

work, or even on the street by using multi-electronic devices such as computers, laptops, or smartphones. E-learning resources are available to the undergraduate students at the University of Ilorin; this means that there are available e-learning resources that, Internet, multimedia projectors, computers, e-books, emails, and the Institution provides all visual classrooms. All the available e-learning resources are accessible to the Undergraduate students of the University of Ilorin except Virtual classroom. Internets, multimedia projectors, computers, e-books, and emails are accessible to the students. The digital library allowed the University community to access over 250 academic and medical journals, over 30,000 e-books, 57 educational software programs, and 60 computer software applications. This boosted the availability of e-resources to faculty and students of the University of Ilorin, Nigeria (Bashorun et al, 2011).

University decision-makers must concentrate on the new and novel concepts by which they can give the organization high-quality services to harvest creativity and efficiency among organizations (Gleason et al., 2017). The e-learning instructional technique is one of these advances in education. Due to the technological advancements made by the 4IR, educational institutions can now implement several innovative strategies for effective and efficient teaching and learning, such as e-learning (Abidah et al., 2020). Another crucial idea is creativity, which takes into account the perspectives of an organization, a team, and an individual. In times of educational crisis, the effectiveness and performance of the educational organization are primarily assessed by originality and innovation (Acar et al., 2019).

The adequacy of the available e-learning resources at the University of Ilorin was discussed in research question three; the result indicated that not all the available e-learning resource is adequate for use. For instance, internet facilities and computers are more adequate than multimedia projectors and e-books. This is a reflection of the emphasis being placed on e-learning in the university. Pirani, (2004) states that for an institution to be able to adopt e-learning, it must provide adequate and reliable technical infrastructures. From the above, it can be seen that e-learning infrastructures are not adequately provided in Unilorin for effective teaching and learning. Not all the available e-learning resources at the University of Ilorin are adequate for the undergraduate students; this means that even though these e-learning resources are available and accessible they are not enough to serve the number of undergraduate students in the university that is, not all of them have equal access to it.

7. Conclusions

This research examines the assessment of the availability of e-learning resources for African undergraduates: An approach to the issue. The results

obtained from the data gathered and analyzed in this study indicated e-learning resources are available in the university and established the fact that most of them are not adequate. Based on the findings and conclusions of this study, the following recommendations were made: (1) Universities should improve on the infrastructural facilities to make e-learning resources more available to all their students; (2) Universities should monitor the e-learning resources and check their adequacy for the students; (3) Teachers should be allowed to acquire appropriate and needed e-learning resources to boost the teaching activities.

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