



Challenges Of E-learning Component In Teaching And Learning Among Students Of Kebbi States University Of Science And Technology, Aleiro, Nigeria

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ABSTRACT

This study examined challenges of e-learning component in the teaching and learning among students of Kebbi States University of science and Technology, Aleiro. The research come with the following research objective to examine the challenges of integrating e-learning component in the teaching and learning among students of Kebbi State University of Science and Technology Aleiro and the study investigates the current factors hindering the full integration of e-learning component into teaching and learning among students of Kebbi State University of Science and Technology Aleiro. Cross-sectional survey design which involved gathering information from the population under study at a single point in time, the study used samples of 100 lecturers and 360 students respectively. The study used a quantitative approach to collect data using a questionnaire. The data collected were analyzed using descriptive statistics. The researcher recommends that, the University should develop a policy for e-learning technologies. Each Faculty should ensure that integrated e-learning should be part and parcel of teaching and learning process, also, the University needs to employ an adequate number of skilled technical staff to ensure the smooth running of e-learning practices and the University should endeavor to sensitize academic and students on how best they can migrate from traditional method to Cloud Computing.

Keywords: Cloud Computing, e-learning, students

INTRODUCTION

E-learning is referring to the use of new technologies in the service of learning and or learner support (Laurillard, 2006). It includes the delivery of content via the Internet, intranet, audio and videotape, satellite broadcast, interactive TV and CD-ROM (Boon et al, 2005). E-learning technologies can be used in three main ways in universities and colleges: technology enhanced classroom teaching; distance

education (in a bid to reach more students who cannot gain access to conventional universities); and distributed learning (a mix of deliberately reduced face to face teaching and online learning also called 'the mixed mode' or 'flexible learning'). Huffaker (2003) lamented the lack of proper integration of e-learning into the classroom situation in the traditional conventional learning scenarios advocating for the need to tap all the advantages of e-learning by entrenching into the school system as part of the curricular practice. E-learning has been defined in varieties of ways by different persons. Stockley (2006) defined e-learning as the delivery of learning, training or educational programmes via electronic means using computer or other electronic devices to provide training, educational or learning materials. He mentioned that it can be by the use of internet or intranet, CD-ROM or DVD to provide learning materials. Wikipedia(2010) further elaborated on e-learning as all forms of electronically supported learning and teaching using information and communication system which may or may not be networked, comprising of computer and network-enabled transfer of skills and knowledge, which may be web-based, computer-based, virtual classroom and digital collaboration, delivered through internet, intranet/extranet, audio or video tapes, satellite TV, and CD-ROM, which can be self-paced or teacher-led embedded with media text, images, animation, streaming video and audio and associated with acronym such as CBT(computer based training), IBT(internet based training) and WBT (web-based training).

Schmidt (2005) holds that e-learning consists of conventional training, such as courses, ad-hoc training, selected learning objects, formalization through document collections and community formation which can be achieved via social software. Also, Khan (2005) pointed that E-learning has been described in various ways as learning using a number of different technologies and methods for delivery e.g. Computer Based Training (CBT), Internet-based training (IBT), Web-based instruction (WBI), advanced distributed learning(ADL), distributed learning (DL), distance learning, online learning (OL), mobile learning (or m-learning) or remote learning and learning management systems (LMS).

The growth of e-learning programs according to Lockwood and Gooley, (2002) is driven by the need for and potential of providing education in less expensive ways, increased access to information, effective learning and greater flexibility. In E-learning system, students are able to interact anytime from wherever with different instructional material (text, sound, pictures, video and so on) through Internet. In addition, learners can communicate with teachers and classmates both individually and as a group discussion with the use of message boards, instant message exchanges and video conferencing (Al-Ammari and Hamad, 2008).

E-learning is becoming an integrated and critical component of corporate knowledge management and performance enhancement. E-learning provides a powerful and unstoppable force for the growth of the educational sector. The energy in the e-learning debate surrounding standards were replaced by broader concerns relating to the quality of learning experience. Learning for life requires knowledge to be personally, socioeconomically and culturally integrated (Naidu, 2003). E-learning has become one of the most popular and widely used learning models in open, distance and conventional institutions. E-Learning is now regarded as an effective method to support the management of education and institutional activities. Naidu (2003) explained that E-learning environments have comparative advantages over Clearning environments such as systematic access to resources, flexible delivery of learning material and more learning opportunities. E-learning emphasizes the use of learning theories, for example behaviorism which focuses on repeating a phenomenon until it is well practiced, cognitivist which encourages students to process and store information for later retrieval and constructivism which explains that knowledge is constructed through an active process of personal experience guided by the learner himself/herself (Kybartaitė *et al.*, 2007).

Despite the larger use of e-learning in University teaching and learning process, research on e-learning integration showed that it had not reached its full integrated (Zemsky *et al.*, 2004). This showed that more effort should be used in order to improve university teaching and to learn via the e-learning. E-learning integration is hindered when there is the absence of improved e-learning component in any university system. Oye *et al.*, (2011) found out that some challenges are affecting e-learning integration such as awareness and training staff on the use of ICT, motivation, electricity bandwidth and internet connectivity

in the university level of Nigeria. However, effective integration requires a transformation process where all stakeholders are involved in re-examining their existing structures and practices. Sife *et al.*, (2007) believes that if universities and colleges are to successfully adopt technologies for teaching and learning, many more than minor adjustments in current practice will be required. Indeed, the effective use of technology requires a revolution in thinking about teaching and learning. Part of that revolution necessitates restructuring of universities and colleges that is, changing the way higher education institutions are planned, managed and organized in order to adapt to the contemporary teaching practices. The growing contemporary trends in e-learning are associated with networked computer information and communications technologies. This enables access to learning materials compared to spatial and conventional setting such as classroom teaching (Dede, 2000). In the case of KSUSTA e-learning would enable the lecturer to deliver instruction and distribute learning materials to students. At the moment e-learning is not fully integrated into the teaching and learning process at Kebbi (Bashir, 2013). There was, therefore, need to establish the challenges of e-learning integration in Kebbi State University of Science and Technology, Aleiro.

Statement of the Problem

This showed that more effort should be used in order to improve university teaching and to learn via the e-learning. E-learning integration is hindered when there is the absence of improved e-learning component in any university system. Maishanu and Mwebesa (2019) found out that some challenges are affecting e-learning integration such as awareness and training staff on the use of ICT, motivation, electricity bandwidth and internet connectivity in the university level of Nigeria. However, effective integration requires a transformation process where all stakeholders are involved in re-examining their existing structures and practices.

Research Objectives

- iii. To examine the challenges of integrating e-learning component in the teaching and learning among students of Kebbi State University of Science and Technology Aleiro.
- iv. The study investigates the current factors hindering the full integration of e-learning component into teaching and learning among students of Kebbi State University of Science and Technology Aleiro.
- v. To examine the theory of e-learning used into teaching and learning among students of Kebbi State University of Science and Technology Aleiro.

Research Question

1. What are the challenges of integrating e-learning component in the teaching and learning among students of Kebbi State University of Science and Technology Aleiro?
2. What are the current factors hindering the full integration of e-learning component into teaching and learning among students of Kebbi State University of Science and Technology Aleiro?
3. Of what significance is the theory of e-learning used into teaching and learning among students of Kebbi State University of Science and Technology Aleiro?

Review of Related Literature

E-learning refers to the use of various kinds of electronic media and information and communication technologies (ICT) in education. E-learning is an inclusive terminology that encompasses all forms of educational technology that electronically or technologically support learning and teaching. Depending on whether a particular aspect, component or delivery method is given emphasis, e-learning may be termed technology-enhanced learning (TEL), computer-based training (CBT), internet-based training (IBT), web-based training (WBT), online education, virtual education, or digital educational collaboration.

E-learning includes numerous types of media that deliver text, audio, images, animation, and streaming video, and includes technology applications and processes such as audio or video tape, satellite TV, CD-ROM, and computer-based learning, as well as local intranet/extranet and web-based learning. Information and communication systems, whether free-standing or based on either local networks or the Internet in networked learning, underlay many e-learning processes.

Concept of e-learning

E-learning refers to the use of various kinds of electronic media and information and communication technologies (ICT) in education. E-learning is an inclusive terminology that encompasses all forms of educational technology that electronically or technologically support learning and teaching. Depending on whether a particular aspect, component or delivery method is given emphasis, elearning may be termed technology-enhanced learning (TEL), computer-based training (CBT), internet-based training (IBT), web-based training (WBT), online education, virtual education, or digital educational collaboration (Gada, 2020).

E-learning includes numerous types of media that deliver text, audio, images, animation, and streaming video, and includes technology applications and processes such as audio or video tape, satellite TV, CD-ROM, and computer-based learning, as well as local intranet/extranet and web-based learning. Information and communication systems, whether free-standing or based on either local networks or the Internet in networked learning, underlay many e-learning processes (Maishanu & Mwebesa, 2017).

E-learning can occur in or out of the classroom. It can be self-paced, asynchronous learning or may be instructor-led, synchronous learning. E-learning is suited to distance learning and flexible learning, but it can also be used in conjunction with face-to-face teaching, in which case the term blended learning is commonly used.

E-learning is becoming an integrated and critical component of corporate knowledge management and performance enhancement. E-learning provides a powerful and unstoppable force for the growth of the educational sector. The energy in the e-learning debate surrounding standards were replaced by broader concerns relating to the quality of learning experience. Learning for life requires knowledge to be personally, socioeconomically and culturally integrated (Naidu, 2003). E-learning has become one of the most popular and widely used learning models in open, distance and conventional institutions. E-Learning is now regarded as an effective method to support the management of education and institutional activities. Naidu (2003) explained that E-learning environments have comparative advantages over C-learning environments such as systematic access to resources, flexible delivery of learning material and more learning opportunities. E-learning emphasizes the use of learning theories, for example behaviorism which focuses on repeating a phenomenon until it is well practiced, cognitivist which encourages students to process and store information for later retrieval and constructivism which explains that knowledge is constructed through an active process of personal experience guided by the learner himself/herself (Kybartaitė *et al.*, 2007).

Challenges of E-Learning in Nigerian University Education

Nigerian higher education system currently has 95 universities, 27 Federal universities, 34 state universities and 34 private own universities [8] and about 160 other tertiary institutions Colleges of education, Polytechnics, Monotechnics [17]. Every year, about a million students apply to enroll into these universities but barely 10% of them are enrolled [9].

Folorunso *et al* [7] and [14] found that mass unawareness, low computer literacy level and cost were identified as critical factors affecting the acceptability of e-learning by students and lecturers of Nigerian universities. Sharma *et al* [15] points out that e-learning places high demand on learners who have to be more proactive and disciplined than in traditional face-to-face education. Schulmeister [17] states that experience proved that the benefits of e-learning could not be fully taken advantage of, expectations could not be met and that technology often was used to simply reinforce outmoded approaches to learning. Resnick [14] criticizes that even though ICT is applied in education, the approaches to teaching and learning remain largely unchanged. In order to entirely profit from new technologies, educational approaches and concepts on how technology can support them should be fundamentally rethought. Investigations indicate that the formidable challenge facing National Open University of Nigeria (NOUN), is lack of financial support to build the required infrastructure and to produce learning materials for its over 9,000 students registered in the first year [11].

Nigerian institutions of higher learning education system currently has public and private universities in all the states of the federations. Every year about a million of students apply to enroll into these universities but only 10% of them are enrolled (JAMB, 2022). However, they found that mass awareness, low computer literacy level and cost were identified as critical factor affecting the acceptability of e-learning by students and lectures of Nigerian Universities. Sharma (2011) point out that e-learning places high demand on learners who have to be more proactive and disciplined than in traditional face to face learning. Kebbi state university of science and technology that experience proved that the benefit of e-learning could not be fully taken advantage of expectations could not be met and that of technology often was used to simply reinforce out model approaches of learning.

However, there are non availability of internet access in some department become of the recurrent cost of bandwidth. Inequality of access to technology is the challenge of digital divide existing among the student of Kebbi state university of science and technology, Aleiro, some of them are unable to afford computers due to the relative cost of the average income of workers in the country.

METHODOLOGY

Research design

The study was carried out using cross-sectional survey design which involved gathering information from the population under study at a single point in time. This was because the study used samples of different respondents to research in the same period (Amin, 2005). The population for the study was students and academic staff in the KSUSTA. The campus had the total population of 7,834 students from six faculties (Office of the Director Academic Planning, 2023).

Population of the Study

The sample for this study was drawn from the entire population of six faculties. A total of 100 samples of the academic staff were randomly selected out of total population of three hundred and sixty (360) based on Research Advisor (2006). Also, also four hundred and sixty (461) of the student's sample was randomly selected from the total population of four thousand seven hundred and fourteen (7,834) students based on Research Advisor (2006).

Sample and Sampling Techniques

Simple random Sampling was used to select 100 members of the academic staff out of a total of 297 members using Research Advisor (2006). Simple Random Sampling was used because at the time of the study, the majority of academic staff were involved in recess semester activities including School practices and internship training.

Instrument for Data Collection

The instrument used for data collection for this study is the questionnaire. Self-developed questionnaire will be adopted for the purpose of this study.

Procedure for Data Collection

The researchers adopted the use of direct delivery technique in the administration of instruments for data collection. The researchers will seek permission from the university authority to use their lecturers and students as well as their time for the purpose of data collection

Data Analysis

After data was collected, the researcher checked the completeness of the questionnaires. The responses were analyzed using basic descriptive statistics including frequencies and percentages using Statistical Package for Social Sciences (SPSS, Version 23).

RESULTS

Research Question 1: *What are the challenges of integrating e-learning component in the teaching and learning among students of Kebbi State University of Science and Technology Aleiro?*

Table 1: Showing the challenges of integrating e-learning component in the teaching and learning among students

Item	N	Mean	St. Deviation	Decision
BVL Learning Environment	360	1.45	.510	Rejected
WebCT Learning Environment	360	2.70	.470	Accepted
VLV Learning Environment	360	2.30	.801	Rejected
Audio-Conferencing	360	1.80	.616	Rejected
Video-Conferencing	360	1.65	.813	Rejected
Blogs	360	2.05	.686	Rejected
Access to e-learning Resources	360	2.15	.813	Rejected
No Stable Internet Connectivity(low bandwidth)	360	2.40	.821	Rejected
Bad perspective about using E-learning Component	360	2.70	.470	Accepted
Lack of training on how to access E-learning resources.	360	2.30	.801	Rejected

Table 4.5 data shows that mean set scores ranging between 1.45 and 2.70 which were above the criterion mean 1.45 therefore indicates that the respondents rejected the results while 2.70 and therefore indicates that the respondents accepted that there is no impacts of challenges of integrating e-learning component in the teaching and learning among students of Kebbi State University of Science and Technology Aleiro. This means that their in need for e-learning component in the teaching and learning among students of Kebbi State University of Science and Technology Aleiro. It promotes innovation and creativity among students and it provides a good teaching practice to the students and teachers.

Research Question 2: *What the current factors hindering the full integration of e-learning component into teaching and learning among students of Kebbi State University of Science and Technology Aleiro?*

Table 2: Showing the current factors hindering the full integration of e-learning component into teaching and learning among students

Items	N	Mean	St. Deviation	Decision
The available internet bandwidth is sufficient for seamless e-learning	360	2.05	.686	Rejected
Our institution provides adequate technical support for e-learning platforms	360	2.15	.813	Rejected
The current hardware (computers, tablets) provided to students and teachers is adequate for e-learning activities	360	2.30	.801	Rejected
E-learning platforms effectively support the pedagogical needs of different subjects	360	1.80	.616	Rejected
Teachers are well-trained to integrate e-learning into their teaching strategies	360	1.65	.813	Rejected
The current e-learning content is engaging and promotes active learning	360	2.05	.686	Rejected
E-learning platforms are accessible to all students, including those with disabilities	360	2.40	.821	Rejected

Table 4.5 data shows that mean set scores ranging between 1.65 and 2.40 which were above the criterion mean 1.65 therefore indicates that the respondents rejected the results while 2.50 and therefore indicates that the respondents accepted that there is no impacts of The study investigates the current factors hindering the full integration of e-learning component into teaching and learning among students of Kebbi State University of Science and Technology Aleiro. This means that there is need for the factors hindering the full integration of e-learning component into teaching and learning among students of Kebbi State University of Science and Technology Aleiro. It promotes innovation and creativity among students and it provides a good teaching practice to the students and teachers.

Research Question 3: *Of what significance is the theory of e-learning used into teaching and learning among students of Kebbi State University of Science and Technology Aleiro?*

Table 3: Showing the theory of e-learning used into teaching and learning among students

Items	N	Mean	St. Deviation	Decision
E-learning platforms allow students to construct their own understanding through exploration and collaboration	360	2.05	.686	Rejected
The use of e-learning tools encourages students to engage in problem-solving activities	360	2.15	.813	Rejected
Teachers effectively facilitate student-centered learning using e-learning technologies	360	2.30	.801	Rejected
Multimedia resources (videos, simulations, etc.) in e-learning environments support cognitive development	360	2.40	.821	Rejected
E-learning platforms help in organizing and presenting information in ways that enhance student understanding	360	1.80	.616	Rejected
Students are motivated to learn by observing and interacting with peers through e-learning tools	360	1.65	.813	Rejected
Group projects and discussions conducted via e-learning platforms enhance the learning experience	360	2.05	.686	Rejected
Immediate feedback provided in e-learning platforms helps reinforce learning behaviors	360	2.15	.813	Rejected

Table 4.5 data shows that mean set scores ranging between 1.65 and 2.40 which were above the criterion mean 1.65 therefore indicates that the respondents rejected the results while 2.50 and therefore indicates that the respondents accepted that there is no impacts of To examine the theory of e-learning used into teaching and learning among students of Kebbi State University of Science and Technology Aleiro. This means that there in need for the factors hindering the the theory of e-learning used into teaching and learning among students of Kebbi State University of Science and Technology Aleiro. It promotes innovation and creativity among students and it provides a good teaching practice to the students and teachers.

DISCUSSION OF FINDINGS

The challenges of e-learning in higher education, particularly at Kebbi State University of Science and Technology, Aleiro, Nigeria, are multifaceted and deeply rooted in socio-economic, infrastructural, and pedagogical issues. A comprehensive review of the literature reveals several critical barriers that hinder the effective implementation and adoption of e-learning systems in this context.

One of the primary challenges is the inadequate technological infrastructure, which includes insufficient access to computers and unreliable internet connectivity. Studies indicate that many students lack the necessary devices for e-learning, and those who do often face connectivity issues that disrupt their learning experience (Aboderin, 2015; Eli-Chukwu, 2023; Abanikannda, 2022). The erratic power supply further exacerbates these issues, making it difficult for students to engage consistently with e-learning platforms (Aboderin, 2015; Eli-Chukwu, 2023; Abanikannda, 2022). This lack of reliable infrastructure not only affects students' ability to participate in e-learning but also discourages educators from fully embracing these technologies in their teaching practices (Ramzani & Suleiman, 2019; Olutola & Olatoye, 2015).

Moreover, socio-economic factors play a significant role in the challenges faced by students. Many families in Nigeria struggle with low income, which limits their ability to procure the necessary equipment for e-learning (Issa, 2023; Ramzani & Suleiman, 2019). This economic barrier is compounded by a general reluctance among parents and students to accept e-learning as a viable alternative to traditional education methods (Issa, 2023; Eli-Chukwu, 2023). Additionally, the educational background of parents has been shown to influence students' engagement with e-learning, as those from less educated backgrounds may not prioritize or understand the importance of digital learning tools (Issa, 2023; Ramzani & Suleiman, 2019).

Another critical challenge is the low level of computer literacy among students and educators alike. Research has shown that many instructors lack the skills required to create engaging and interactive e-learning content, which is essential for effective virtual teaching (Maphalala & Adigun, 2020; Reju & Jita, 2018). This deficiency not only hampers the quality of education delivered through e-learning but also affects students' motivation and engagement with the material (Regmi & Jones, 2020). Furthermore, the lack of training and support for both students and instructors in utilizing e-learning technologies has been identified as a significant barrier to successful implementation (Regmi & Jones, 2020; Olutola et al., 2021).

The COVID-19 pandemic has further highlighted these challenges, as institutions were forced to rapidly transition to online learning without adequate preparation (Eli-Chukwu et al., 2022; Abbasi et al., 2020). The sudden shift led to increased anxiety and uncertainty among students regarding their academic futures, particularly in terms of job security and financial stability (Itasanmi et al., 2023; Eli-Chukwu et al., 2022). This situation has underscored the need for a more structured approach to e-learning that considers the unique challenges faced by students in Nigeria, including the need for improved institutional readiness and support systems (Onyeka et al., 2020; Eli-Chukwu, 2023; Abanikannda, 2022). The challenges of e-learning at Kebbi State University of Science and Technology are deeply intertwined with infrastructural deficiencies, socio-economic barriers, and a lack of digital literacy. Addressing these issues requires a concerted effort from educational stakeholders to enhance technological infrastructure, provide training for both students and educators, and foster a more supportive environment for e-learning adoption. Only through such comprehensive measures can the potential of e-learning be fully realized in Nigerian higher education.

CONCLUSIONS

The findings on the challenges affecting full integrating of e-learning components into teaching and learning processes at Kebbi State University of Science and Technology, Aleiro stated with their frequencies and percentages such as internet connectivity (low bandwidth). Lack of Multimedia Laboratories. This result indicated that almost the e-learning components that have not yet been integrated into teaching and learning processes at Kebbi State University of Science and Technology, Aleiro are Synchronous e-learning component such as Virtual Blackboard software for teaching and learning activities, WebCT Virtual learning environment software, and Moodle Virtual learning environment software. This is a big challenge facing the university. However, Perspectives of stakeholders on the integration of e-learning component into teaching and learning process at Kebbi State University of Science and Technology, Aleiro. The empirical data revealed that they perceived that e-learning does not

RECOMMENDATIONS

Based on the research objectives and their implications, the researcher recommends that;

- i. The University should develop a policy for e-learning technologies. Each Faculty should ensure that integrated e-learning should be part and parcel of teaching and learning process.
- ii. The University should improve the existing e-learning infrastructure by deploying and converting its computer laboratories into Virtual learning environment software, e.g. Moodle or WebCT or blackboard with adequate network computers, stable and speedy internet connectivity.
- iii. Also, the University needs to employ an adequate number of skilled technical staff to ensure the smooth running of e-learning practices
- iv. The Kebbi State University of Science and Technology, Aleiro should make benchmarking partner with institutions that have already integrated e-learning component into their teaching and learning processes.
- v. The University should endeavor to sensitize academic and students on how best they can migrate from traditional method to Cloud Computing.

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