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Original Research Article

Role of E-Learning on academic performance of Undergraduate Students of Kebbi State University of Science and Technology Aliero, Nigeria

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Abstract: This study examined the role of e-learning on academic performance of undergraduate students of Kebbi State University of Science and Technology Aliero, Nigeria. The study adopted a descriptive survey design. Three research questions guided the study. The population of the study was 850 respondents, comprises 350 academic lecturers and 500 undergraduate students. The study adopted a simple random sampling technique to select 20% of the total population which was 170. The instrument for data collection was structured questionnaire. Data collected were used to determine the internal consistency and reliability of the instrument using Cronbach alpha techniques. An overall reliability coefficient of 0.89 was established. Mean and standard deviation were used for data analysis. The findings of the study revealed that e-learning plays a positive role on academic performance of undergraduate students in kebbi state university of science and technology Aliero. The findings of the study revealed challenges militating against the use of e-learning to enhance academic performance of undergraduate students in kebbi state university of science and technology Aliero, Nigeria. Based on the findings, the study recommend among others that kebbi state government should ensure a maximum standard set for the institution to get computer and internet facilities to enhance effective e-learning process in KSUSTA.

Keywords: Role, E-Learning, academic performance, Undergraduate Students.

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INTRODUCTION

It has become so glaring to everyone that the world has become a global village. People are becoming more and more familiar to the use of smart phones, computers and other technological devices used in accessing the internet on a daily basis. The introduction of multimedia technologies and the internet in learning has been observed as a vital means of improving accessibility and quality of delivery of learning among students and teachers in tertiary institutions (Alsaadat, 2018).

Electronic- learning which is also referred to as e-learning is seen as a good tool that can be used to enhance learning. It is a shift from the conventional teaching and learning style to an Information and Communication Technology, (ICT)-based, personalized, flexible, self-organized, collaborative learning, based on a community of learners, teachers, facilitators and experts (Jimoh and Bupo, 2011).

E-learning makes use of computers, laptops, mobile phones, android phones etc, which most tertiary education students have access to. These components are either owned by the students or their parents, therefore could watch a video on what was taught in the class for better understanding. The use of these facilities in the classroom and at home could make abstract concept to become very real to the students. Globally, the strength of e-learning is gradually taking over the contemporary educational system in Nigeria and as well dominating in day-to-day activities across the globe. Also, academic performance of undergraduate students in the current computer-based standard examination (CBT) in Nigerian institutions has been of much anxiety among the students hence the need to consider the causes affecting the academic performance of undergraduate students in screening test, other examinations, teaching and learning in higher institutions in Nigeria is also the focused of this study. Technology teaching and learning is the main objective

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in which higher education will move towards advancement. E-learning is regularly considered as the essential instrument for educational improvement which required extremely serious continuous teaching and learning in Nigerian tertiary institutions (Levy, 2006).

Similarly, Jimoh and Bupo (2011) posited that e-learning approach has become an increasingly popular learning approach in higher educational institutions due to vast growth of internet technology. E-learning has a competitive advantage and many higher institutions have implemented it and this has impacted on student's academic performance. However, there are other academic institutions that use very low interactive e-learning which is not enough to contribute to the performance of the students. In contrary to that, other higher institutions use highly interactive e-learning which directly improves student's academic performance universally.

According to Ministry of Education and Vocational Training (MoEVT) (2005) posits that technology enabled instructional learning helps to greater extent to advance eminence of education and students' academic performance. It has found that students in higher institutions that engaged in e-learning, normally perform better than those in face-to-face learning environment. Ohiwerei *et al*., (2013) posited that students who participate in online/e-learning achieve better grades than students who studied conventional approach.

Research by Sarikhani *et al*., (2016) postulated some challenges militating against effective implementation of e-learning in higher institutions of higher learning which include: lack of computers, lack of qualified lecturers to teach ICT in higher institutions, lack of electricity/power supply, fear of indispensable, lack of internet or slow connectivity, lack of initiative by the universities to connect ICT, broken down computers, fear of redundant by older lecturers, expensive modem, lack of finance and distributive capacity, lack of qualified academic lecturers and inadequate instructional materials in teaching and learning. Some of the problems associated with the use of e-learning to enhance academic performance of students can be attend to lack of effective monitoring of management of funds allocated to the institution, inadequate funding of proposed project by the government or donors, multiplicity of initiative, especially, in ICT and education without any coordinating mechanism resulting in duplication of efforts and wastage of resources and lack of systematic approach in ICT use in educational settings in order to tap into the potential of ICTs to address the challenges in the education system.

Rodgers (2008) advanced some strategies to improve student's performance which he posited that for any students to achieve in academic environment such students must have a positive attitude towards e-learning, never skip classes and having competitive spirits and strong self-motivation; the university to provides motivational workshops/seminars that relate to time management, students to have technique of studying and problem solving skills; university to provide counselling session for undergraduate students; university to engage academic lecturers with appropriate qualification to meet teaching expectation; university to make e-learning a compulsory tasks for all newly employed academic staff without teaching experience or training; academic lecturers to attend workshop on teaching through e-learning; the university to send academic staffs for further training on e-learning; university to make ICT instructors/facilitators to be aware of self-commitment and responsibility towards teaching students with online facilities; university to comply with the accreditation requirements by having academic staff to tally with students admitted teaching ratio; university to make sure that all e-learning facilities are in good condition and well maintained before lectures or examinations.

Objectives of the study

The broad objective of the study is to examine the impact of e-learning on academic performance of undergraduate students of kebbi state university of science and technology Aliero, Nigeria. Specifically, the study sought to:

- Examine the impact of e-learning on academic performance of undergraduate students in KSUSTA Nigeria.
- Ascertain challenges militating against the use of e-learning to enhance academic performance of undergraduate students in KSUSTA.
- Determine strategies to improve academic performance of undergraduate students in KSUSTA.

Research Questions

The following research questions guided the study:

- What are the impacts of e-learning on academic performance of undergraduate students in KSUSTA?
- What are the challenges militating against the use of e-learning to enhance academic performance of undergraduate students in KSUSTA?
- What are the strategies to improve academic performance of undergraduate students in KSUSTA?

METHODOLOGY

Study Area

The Kebbi State University of Science and Technology (KSUSTA) is a state-owned university in Aliero, Kebbi State, Nigeria. KSUSTA offers both undergraduate and postgraduate programmes in agriculture, Education, Engineering, Medical sciences and Pure and applied sciences, among others. It was the

79th university in Nigeria when it was first created. Kebbi State University of Science and Technology was established in 2006 by the then Governor of the state, Senator Muhammadu Adamu Aliero.

Research Design

The study adopted a descriptive survey design. The population of the study was 850 respondents, comprises 350 academic lecturers and 500 postgraduate students. The study adopted a simple random sampling technique to select 170 respondents been the 20% of the total population of the study.

Data Collection Procedure

The instrument for data collection was structured questionnaire titled: E-learning on Academic Performance of undergraduate Students Questionnaire. The questionnaire consisted of two sections A and B. Section a provided personal data of respondents while section B was made up of three clusters. Responses to the items in the questionnaire were based on a four-point rating scale options, ranging from Strongly Agree (SA) (4 points), to Agree (A) (3 points), Disagree (D) (2 points) and strongly disagree (SD) (1 point). The instrument was duly validated by three experts from the Faculty of Faculty of Education KSUSTA. In other to ascertain the reliability of the instrument, 35 copies of the instrument were administered to lecturers and students in KSUSTA. An overall reliability coefficient of 0.89 was established which signified very high reliability of the instrument. The instrument was administered to respondents by the researcher and one research assistant, through direct method by distributing and collecting the questionnaire from the respondents at their various locations. The research assistant was briefed on the modalities for distributing and collecting the questionnaire from the respondents on the spot. This ensured that the respondents appropriately completed the questionnaires. Thus, there was 100% return rate of the questionnaire and were duly used for data analysis.

Data Analysis

Mean and standard deviation were used for data analysis. A mean of 2.50 was used as benchmark for decision making for each item, since, a four-point rating scale was used for the study. Thus any item with a mean of 2.50 and above was considered as accepted by the respondents, while any item with a mean below 2.50 was considered as unaccepted.

RESULTS AND DISCUSSION

Table 1 shows response of subjects on the impacts of e-learning on academic performance of undergraduate students of KSUSTA. All the nine items obtained mean scores above 2.50. This is an indication that all the items were accepted as impacts of e-learning on academic performance of undergraduate students in KSUSTA based on the attainment of overall mean of 2.61 (0.55%) for undergraduate students while 2.61 (0.57%) for academic lecturers.

Table 2 shows response on the challenges militating against the use of e-learning to enhance academic performance of undergraduate students in KSUSTA. The fourteen items obtained mean scores above 2.50. This is an indication that all the items were accepted as the challenges militating against the use of e-learning to enhance academic performance of undergraduate students in KSUSTA based on the attainment of overall mean of 2.61 (0.55%) for undergraduate students while 2.61 (0.57%) for academic lecturers.

Table 3 shows response on the strategies to improve academic performance of undergraduate students in KSUSTA. The twelve items obtained mean score above 2.50. This is an indication that the items were accepted as strategies to improve academic performance of undergraduate students in KSUSTA based on the attainment of overall mean of 2.61 (0.55%) for undergraduate students while 2.61 (0.57%) for academic lecturers.

The findings of the study revealed the positive impacts of e-learning on academic performance of undergraduate students in KSUSTA Nigeria which include improving students' academic performance and increases accessibility of education among others. These finding are corroborated by…. who noted that e-learning improves student's academic performance; remove geographical obstacles and facilitates everybody to learn anytime and anywhere and increases accessibility of education; reduces the costs and time factors. The finding is also in consonant with the findings of Oye *et al*., (2010) who posited that student's participation in e-learning achieves better grades than those who studied conventional approach and as well far and wide used in countless higher institutions. The findings of the study revealed the challenges militating against the use of e-learning to enhance academic performance of postgraduate students in higher institutions in Nigeria. This findings is in consonant with the findings of Serbessa (2006) who postulated some challenges militating against effective implementation of e-learning in higher institutions of higher learning which include: lack of computers, lack of qualified lecturers to teach ICT in higher institutions, lack of electricity/power supply, fear of indispensable, lack of internet or slow connectivity, lack of initiative by the universities to connect ICT, broken down computers, fear of redundant by older lecturers, expensive modem, lack of finance and distributive capacity, lack of qualified academic lecturers and inadequate instructional materials in teaching and learning. The findings is also similar with the findings of Sheng and Basaruddin (2014) who posited some of the problems associated with the use of e-learning to enhance academic performance of students to include lack of effective monitoring of management of funds allocated to the institution, inadequate funding of proposed project by the government or donors and

achieve in academic environment such students must have a positive attitude towards e-learning, never skip classes and having competitive spirits and strong self-motivation; the university to provides motivational workshops/seminars that relate to time management, students to have technique of studying and problem solving skills; university to provide counselling session for undergraduate students; university to engage academic lecturers with appropriate qualification to meet teaching expectation; university to make e-learning a compulsory tasks for all newly employed academic staff; academic lecturers to attend workshop on teaching through e-learning; the university to send academic staff for further training on e-learning; university to make ICT instructors/facilitators to be aware of self-commitment and responsibility towards teaching student with online facilities; university to comply with the accreditation requirements by having academic staff to tally with students admitted teaching ratio; university to make sure that all e-learning facilities are in good condition and well maintained before lectures or examinations.

Table 1: Mean response and standard deviation rating of the impacts of e-learning on academic performance of undergraduate students of KSUSTA Nigeria

	Undergraduate students			**Academic Staff**		
Items	**MM**	**SD**	**Decision**	**MM**	**SD**	**Decision**
1. E-learning improves student's academic performance	2.81	0.55	Accepted	2.51	2.75	Accepted
2. E-learning has removed obstacles and facilitates everybody to learn anytime and anywhere	2.77	0.55	Accepted	2.67	0.57	Accepted
3. E-learning increases accessibility of education	2.69	0.56	Accepted	2.60	0.56	Accepted
4. E-learning reduces the costs and time	2.71	0.56	Accepted	2.57	0.57	Accepted
5. E-leaning enabled instructional learning method to move ahead importance of student's academic performance	2.87	0.55	Accepted	2.53	0.57	Accepted
6. Student's participation in e-learning achieves better grades than students who studied conventional approach	2.90	0.54	Accepted	2.71	0.57	Accepted
7. E-learning is far and wide used in countless higher institutions	2.83	0.55	Accepted	2.74	0.56	Accepted
8. E-learning provides learners with additional resources to assist resource-based learning	2.94	0.54	Accepted	2.65	0.56	Accepted
9. E-learning provides distance learners country-wide to assist resource-based learning	2.75	0.56	Accepted	2.55	0.56	Accepted
Cluster means	2.81	0.55	Accepted	2.61	0.57	Accepted

Source: Field Survey, 2022

Table 2: Mean response and standard deviation rating of challenges militating against the use of e-learning to enhance academic performance of undergraduate students of KSUSTA Nigeria

	Undergraduate students			**Academic Staff**		
Items	**M**	**SD**	**Decision**	**MM**	**SD**	**Decision**
10. Insufficient number of computers and accessories	2.67	0.56	Accepted		2.70	Accepted
11. Lack of qualified lecturers and skills to teach ICT in KSUSTA	2.72	0.56	Accepted	2.51	0.56	Accepted
12. Lack of electricity/power supply	2.81	0.55	Accepted	2.62	0.57	Accepted
13. Lack of internet or slow connectivity	2.93	0.54	Accepted	2.57	0.57	Accepted
14. Lack of initiative by the university to connect ICT	2.97	0.54	Accepted	2.84	0.57	Accepted
15. Fear of redundant by older lecturers	2.59	0.57	Accepted	2.73	0.55	Accepted
16. Lack of finance and distributive capacity	2.52	0.57	Accepted	0.52	0.56	Accepted
17. Inadequate instructional materials in teaching and learning	2.69	0.56	Accepted	2.60	0.57	Accepted
18. Lack of effective monitoring of management of funds allocated to KSUSTA	2.80	0.56	Accepted	2.65	0.57	Accepted
19. Range of initiative in ICT without coordinating mechanism resulting duplication of efforts and wastage of resources	2.68	0.56	Accepted	2.69	0.56	Accepted
20. Lack of systematic approach in ICT in order to tap potential to address the challenges in educational system	2.77	0.55	Accepted	2.81	0.56	Accepted
21. Poor literacy skills on students	2.89	0.55	Accepted	2.58	0.55	Accepted
22. Cost of implementing e-learning in KSUSTA	2.99	0.54	Accepted	2.61	0.57	Accepted
23. Lack of desire, decision and determination	2.66	0.56	Accepted	2.55	0.57	Accepted
Cluster means	2.76	0.56	Accepted	2.64	0.57	Accepted

Source: Field Survey, 2022

Table 3: Mean response and standard deviation rating of strategies to improve academic performance of undergraduate students of KSUSTA Nigeria

	Undergraduate students			Academic Staff		
Items	**M**	**SD**	**Decision**	**M**	**SD**	**Decision**
24. Students to have positive attitude towards e-learning	2.91	0.54	Accepted	2.63	0.57	Accepted
25. Student to avoid skipping classes and having competitive spirits to learn	2.84	0.55	Accepted	2.53	0.57	Accepted
26. university to provides motivational workshops/seminars that relate to time management	2.98	0.54	Accepted	2.51	0.57	Accepted
27. Students to have technique of studying and problem solving skills	2.77	0.55	Accepted	2.68	0.56	Accepted
28. University to provide counselling session for undergraduate students	2.66	0.56	Accepted	2.70	0.56	Accepted
29. University to engage academic lecturers with appropriate qualification to meet teaching expectation	2.90	0.54	Accepted	2.59	0.57	Accepted
30. University to adopt e-learning a compulsory tasks for all newly employed academic staff	2.87	0.55	Accepted	2.55	0.57	Accepted
31. Academic lecturers to attend workshops and seminars on e-learning	2.78	0.55	Accepted	2.61	0.57	Accepted
32. University to sponsor academic staff for further training on e-learning	2.68	0.56	Accepted	2.68	0.56	Accepted
33. University to make ICT instructors/facilitators to be aware of self-commitment and responsibility towards teaching students with online facilities	2.92	0.54	Accepted	2.60	0.57	Accepted
34. University to comply with the accreditation requirements by having academic staff tally with students admitted teaching ratio	2.81	0.55	Accepted	2.58	0.57	Accepted
35. University to make sure that all e-learning facilities are in good condition and well maintained before lectures or examinations	2.87	0.55	Accepted	2.66	0.56	Accepted
Cluster means	2.83	0.55	Accepted	2.61	0.57	Accepted

Source: Field Survey, 2022

CONCLUSION

Conclusively, the research study was conducted to examine the impacts of e-learning on academic performance of undergraduate students in KSUSTA Nigeria through the use of ICT facilities to improve undergraduate students learning process. The findings of the study revealed that e-learning assisted undergraduate studies to extensively advance academic performance, learning methods and self-improvement.

RECOMMENDATIONS

Based on the findings, the study recommend the following:

1) Kebbi State Government should provide e-learning materials and equipment for KSUSTA students.
2) Academic Staff should be trained on e-learning to develop the necessary skills on e-learning.
3) Kebbi State Government should provide constant electricity in the University.
4) Parents should provide for their wards computers or mobile phones to have access to the internet.
5) E-learning should be part of the university curriculum
6) KSUSTA administration should seriously consider ways of incorporating the use of ICT in teaching and learning
7) Regular training of undergraduate students with ICT facilities will go a long way to promote and strengthen their scientific and technical knowledge skills
8) Lack of manageable size should be considered during admission process into various programmes in KSUSTA, so as to maintain a reasonable number of lecturers/students ratios
9) There must be opportunity for in-service training of academic lecturers to be grounded enough in ICT skills and there is need for well-furnished computer laboratories with internet facilities and other ICT equipment
10) Kebbi state Government should ensure a maximum standard to get computer and internet facilities to enhance effective e-learning process.

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