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ASSESSMENT OF EMERGING TECHNOLOGIES ON BUILDING/ WOODWORK TECHNOLOGY STUDENTS' ACADEMIC PERFORMANCE IN TAI SOLARIN UNIVERSITY OF EDUCATION, IJEBU-ODE, OGUN STATE

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Abstract

The integration of emerging technologies in teaching and learning of building/ woodwork technology in a university has been a thing of concern to students' performance. Three objectives and research questions guided the study. The research design adopted for the study was descriptive survey. The population of the study comprised 46 building/ woodwork technology students of Tai Solarin University of education, Ijebu-Ode. The entire population constituted the sample for the study because the number is manageable. The instrument used for data collection was 25 items structured questionnaire with 4-point rating scale. The questionnaires were validated by three research experts in the Department of Technical Education, Emmanuel Alayande College of Education, Oyo. The value of the reliability obtained was 0.79. The questionnaire was administered by the researchers. The data collected from the field were analyzed using, Mean and Standard Deviation. The study revealed that emerging technologies improve student academic performance in building/ woodwork technology. It was therefore recommended that building/ woodwork technology students should ensure that emerging technologies forms parts of their learning activities in classroom or at home. And building/woodwork technology programme should be reviewed by policy makers to reflect the current developmental and technological changes that can improve students' performance.

Introduction

Today's digital age and its emerging technologies, with the latest achievements of artificial intelligence and big data processing, have unprecedently affected education processes and pedagogy, including the strategies and approaches related to building/ woodwork technology teaching and learning process. Building/ woodwork technology programme in a university is

composed of the following trades: block laying, bricklaying and concreting, draftsmanship, craft practice, joinery and carpentry, furniture design and construction, machine woodworking, painting and decorating. Building/ woodwork trade provides learners with the practical skills and knowledge required for a building/ woodwork tradesperson in the world of work. Building/ woodwork trade curriculum contents includes, various and general design of a building, woodworking machine, preparation of stock, principles of foundations and trusses to mention few (Federal Republic of Nigeria, 2013). These organized bodies of knowledge are transferred to the learners through various forms of teaching methods and techniques employed by lecturer or instructor.

Emerging technology is often seen as the introduction of computers and the related technological devices into the educational arena (Ayite & Nyagorme, 2020). Normally, it should be noted that the inception of computers and other Information and Communication Technology (ICT) devices into the educational sector will cause some level of variation in the teaching and learning process. The emerging technologies highlighted in this paper can influence the process and outcome of teaching and learning process in Nigerian tertiary institutions, especially in building/ woodwork technology if properly deployed and applied. This assertion is in line with the work of Oliveira et al., (2019), that technologies have increasingly shaped students' experiences as well as influenced their relationships with natural and physical world. It is also in tandem with assertion of Corinne (2018) and Edeh (2019) that emerging technologies have spawned the exponential development of software and AI-aided, cloudbased technology that aim to adapt learning methods and customize curricula to fit each student’s ability to move forward at his or her own pace.

What is worth pondering over is whether the integration of emerging technology has played any role in enhancing students’ understanding of their subject matters. Granito and Chernobilsky (2012) and Enang (2022) noted that even though emerging technologies are gradually being integrated into the educational sector, the actual influence students’ performance is still unfamiliar According to Adamu (2016) academic performance is the measure of what a person had accomplished after exposure to educational programme. Students’ academic performance can be influenced by several factors such as learning environment, teaching methods and technologies among others.

Statement of the Problem

In an ever-dynamic world, teaching and learning keeps changing to swim with tide of technology meanwhile, literatures shows that building/ woodwork technology students seem to be adamant to use technologies for learning. The inclusion of emerging technology into the teaching and learning process is to assist students use the technologies available to improve in their academic performance. Based upon this effort students are yet to meet the required standard needed in the world of work. However, there is no consistent conclusion regarding the type and the combinations of the emerging technologies that lead to high academic achievement likewise the extent of usage for building/ woodwork technology learning process. Hence, the study.

Purpose of the Study

The main objective of this study is to assess emerging technologies on building/ woodwork technology students' academic performance in Tai Solarin university of education, Ijebu-Ode, Ogun State. specifically, the study sought to;

i. identify various emerging technologies that can improve building/ woodwork technology students' academic performance.
ii. determine the extent to which emerging technologies influence building/ woodwork technology students' academic performance.
iii. examine the benefit sought on emerging technologies by building/ woodwork technology students for improving their academic performance.

Research Questions

The following research questions guided the study.

i. What are the various emerging technologies that can improve building/ woodwork technology students' academic performance?
ii. To what extent can emerging technologies influence building/ woodwork technology students' academic performance?
iii. What are the benefits sought on emerging technologies by building/ woodwork technology students for improving their academic performance?

Methodology

The study employed a descriptive survey research design. The population consist of 46 building/ woodwork technology students of 2022/2023 (20 students in 300level and 26 students in 400level) from Tai Solarin University of Education, Ijagun, Ijebu-Ode. The entire population was used as study sample because the number was manageable. The instrument used for data collection was a 25 items structure questionnaire. It has two parts. Part A contained items which has information on demographic variables of the respondent while Part B contained items that have information concerning the research questions. The questionnaire was based on a 4-point modified Likert scale of Extremely Helpful – 4, Very Helpful – 3, Helpful – 2, Not Helpful – 1; for research question two (2), Very High Extent – 4, High Extent – 3, Low Extent – 2, Very Low Extent – 1, for research question three (3), Strongly Agree - 4, Agree - 3, Strongly Disagree - 2, Disagree - 1. The questionnaire was face and content validated by three experts from the Department of Technical Education, Emmanuel Alayande College of Education, Oyo. The instrument was pilot tested on 16 building/ woodwork technology students of Ekiti State University, Ado-Ekiti and its reliability was ascertained at correlation coefficient of 0.79 using Kuder- Richardson formula. The instrument was administered by the researchers while Mean and Standard deviation was used to analyze the research questions. A cut off point of 2.50 was set to accept or reject items of the instrument. 2.50 shows agreed, while less than 2.50 shows disagreed.

Results

Research Question 1

What are the various emerging technologies that can improve building/ woodwork technology students' academic performance?

Table 1: Respondents mean score on various emerging technologies that can improve building/ woodwork technology students' academic performance

S/N	Items	$\bar{x}$	SD	Decision
1.	Cloud computing	3.37	0.57	Very Helpful
2.	Electronic books	3.04	0.58	Very Helpful
3.	IPAs	3.76	0.56	Very Helpful
4.	Free online courses/learning platforms	3.90	0.57	Very Helpful
5.	Smart Board	3.50	0.59	Very Helpful
6.	Virtual Library	3.83	0.56	Very Helpful
7.	Ilearn Tool	3.57	0.55	Very Helpful
8.	CAD	3.73	0.57	Very Helpful
	Average Mean	3.63	0.63	Very Helpful

Based on the data presented in Table 1, it was evident that all the eight items were rated above 2.50. Item 4 showed the highest mean score of 3.90 which indicated that students engage in free online courses/learning platforms. 3.63 average mean was obtained from the items which proved that all the respondents reacted positively to the statement showing the various emerging technologies that can improve building/ woodwork technology students academic performance. The results also showed the standard deviation ranged from 0.55 to 0.59 indicating that the respondents were not too far from one another in their responses, proving that the items were valid.

Research Question 2

To what extent can emerging technologies influence building/ woodwork technology students' academic performance?

Table 2: Respondents mean score on extent to which emerging technology influence building/ woodwork technology students' academic performance.

S/N	Items	$\bar{x}$	SD	Decision
1.	Students use services provided by messaging apps such as WhatsApp to get relevant academic information	3.37	0.57	High Extent
2.	Students participate in class online group discussions	3.04	0.58	High Extent
3.	Students read e-books with emerging technological tools to get more understanding of concepts	2.46	0.56	High Extent
4.	Students research, type, complete and submit my assignments and projects using emerging technological tools	3.76	0.57	High Extent
5.	Students use emerging technological tools to access information on the internet	3.88	0.57	High Extent
6.	Students take online courses easily with the aid of technological tools	3.57	0.58	High Extent
7.	Emerging technological tools allow students to use multimedia resources when learning	3.81	0.56	High Extent
8.	Students watch educational movies and play educational games via emerging technologies	3.84	0.58	High Extent
9	Students watch tutorials and videos on difficult concepts	3.72	0.58	High Extent
	Average Mean	3.71	0.55	High Extent

Data presented in Table 2, showed the mean score of the data from the respondents' view about the extent to which emerging technologies influence building/ woodwork technology students' academic performance Item 5 showed the highest mean score of 3.88 which stated that students use emerging technological tools to access information on the internet. All the nine items agreed on the research opinion with a grand mean score of 3.71. The results also showed the standard deviation ranged from 0.56 to 0.58 indicating that the respondents were not too far from one another in their responses, proving that the items were valid.

Research Question 3

What are the benefits sought on emerging technology by building/ woodwork technology students for improving their academic performance?

Table 3: Respondents mean score on benefits sought on emerging technologies by building/ woodwork technology students for improving their academic performance.

S/N	Items	$\bar{x}$	SD	Decision
1.	Eases the pressure on me as a student	3.37	0.59	Agreed
2.	Helps accommodate my personal learning styles	3.04	0.58	Agreed
3.	Gives me the opportunity to be information seeker instead of information receiver.	3.84	0.54	Agreed
4.	Improves my learning of critical concepts and ideas	3.76	0.57	Agreed
5.	Promotes the development of communication skills (e.g., writing and presentation skills).	3.50	0.57	Agreed
6.	Promotes the development of my interpersonal skills (e.g., ability to relate or work with	3.67	0.57	Agreed
7.	Helps me stay connected with my instructors for learning purposes	3.77	0.55	Agreed
8.	Broadens learning opportunities for me	3.87	0.56	Agreed
	Average Mean	3.73	0.63	Agreed

Based on the data presented in Table 3, it was evident that all the eight items were rated above 2.50. Item 3 showed the highest mean score of 3.84 which stated that emerging technology provides students with the opportunity to be information seeker instead of information receiver. 3.73 average mean was obtained from the items which proved that all the respondents reacted positively to the items statement. The results also showed the standard deviation ranged from 0.57 to 0.59 indicating that the respondents were not too far from one another in their responses, proving that the items were valid.

Discussion of Findings

The finding from the research question one which sought to assess the various emerging technologies that can improve building/ woodwork technology students' academic performance showed that the identified emerging technologies such as electronics books, virtual library, Ilearn tool among others are helpful in the teaching and learning of building/ woodwork technology. This finding was in tandem with the findings of Emeli and Okorogba (2016) and Ayite and Nyagorme

(2020) who identified various technological tools that can be integrated into teaching and learnimg process which in turn increase students' performance.

It was evident from research question two that to a high extent students use the emerging technologies which improve their academic performance in building/ woodwork technology. This finding is in line with the findings of Ayite and Nyagorme (2020) and Enang (2022) who posited in a different context that emerging resources serve different purposes; therefore, if students use them for playing games, or watching movies among others, performance will go down instead of improving. The use of emerging technologies is not a green card to academic excellence but how effective learners use it to learn.

Findings from research question three revealed benefits sought on emerging technologies by building/ woodwork technology students for improving their academic performance. This includes providing an opportunity to be information seeker instead of information receiver, promoting the development of communication skills (such as, writing and presentation skills), promoting the development of my interpersonal skills (such as, ability to relate or work with) among others. This finding is supported by Edeh (2019) and Enang (2022) that emerging technologies should be part of classroom pedagogy tools because of its ability to positively influence students learning.

Conclusion

Conclusively, emerging technologies could be used to improve students' academic performance in building/ woodwork technology. However, students should be encouraged to use the right tools in learning and be properly guided in the use of each tool to see the benefits that come with it.

Recommendations

Based on the findings of the study, the following recommendations were proffered.

i. Building/ woodwork technology students should ensure that emerging technologies forms parts of their learning activities in classroom or at home.
ii. The building/woodwork technology programme should be reviewed by policy makers to reflect the current developmental and technological changes that can improve students' performance.

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