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INFLUENCE OF E-LEARNING ON ACADEMIC PERFORMANCE OF STUDENTS IN ANAMBRA STATE POLYTECHNIC MGBAKWU, NIGERIA.

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Abstract

This study investigates the influence of e-learning on the academic performance of students at Anambra State Polytechnic, Mgbakwu. With the growing adoption of digital platforms in education, particularly accelerated by the COVID-19 pandemic, e-learning has become a vital tool in the academic environment. This research explores how the integration of e-learning platforms has affected students' academic outcomes, engagement, and learning experiences. It also identifies the challenges faced in the implementation of e-learning at the polytechnic level, including infrastructural, financial, and technical barriers. The target population includes all students and academic staff of Anambra State Polytechnic, Mgbakwu, across various departments. Data was collected through surveys and interviews with students and academic staff. The findings reveal that while e-learning has contributed to improved flexibility and access to learning resources, its effectiveness is hampered by poor internet connectivity, lack of digital skills, and limited institutional support. The study recommends technology infrastructural development, capacity building, and supportive policies by the government to enhance the role of e-learning in improving academic performance of students at Anambra State Polytechnic, Mgbakwu.

Keywords: E-Learning, Academic Performance, Students, Anambra State, Polytechnic Mgbakwu, Nigeria.

1.1 Introduction

E-learning is seen as education that uses computerized communication systems in an environment for communication, the exchange of information and interaction between student and instructors. E-learningNC (2019). E-learning platforms such as Zoom, Microsoft Teams, Udemy, and Coursera have been recognized for enhancing students' academic performance by providing flexible and accessible learning opportunities. E-learning is also a natural evolution of distance learning, which has taken advantage of the latest tools to emerge in the context of technologies for structuring education. E-learning has facilitated the continuation of academic activities during disruptions such as the Covid-19 Pandemic; End-Sars Protest, Strikes, and so on. Remarking its role in maintaining academic continuity and providing access to a wide range of resources. E-learning provides opportunities for data-driven assessment and feedback. E-learning platforms often incorporate assessment tools and analytics that allow educators to monitor students' progress and identify areas of improvement. According to Aslan et al. (2016), the use of data-driven assessment in e-learning enables timely feedback, targeted interventions, and personalized learning plans. This tailored approach to assessment and feedback can contribute to better academic performance by addressing individual learning needs and providing specific guidance for improvement.

The use of Information Communication Technology, ICT in education advances itself to more student-oriented learning settings. With the world moving rapidly into digital media and information, the influence of ICT on both education and students' learning behavior is becoming more and more imperative and this importance will continue to grow in the 21st century. Web Based Training and its newer and more general synonymous term e-Learning are two of today's buzz-words in the academic world (Odhiambo, 2013, in Adeboye, 2019).

Students' performance remains one of the key factors of the success of any technological innovation and initiative in any school and their academic performance and attitudes towards character and learning.

1.2. Statement of the problem

In spite of the benefits of e-learning on the academic performance of students at Anambra State Polytechnic, Mgbakwu. Some challenges still hinders the effective implementation of e-learning in polytechnics: Infrastructure Deficiencies**;** as a result of the deplorable state of educational system in Anambra State, Nigeria; due to theinadequate teaching and learning facilities, infrastructures, most libraries in Polytechnic higher institutions have audio-visual learning materials that are rarely utilized as a result of incessant power outages and sometimes lack of awareness on the part of the students. However, many institutions lack adequate e-learning facilities, including reliable E-Library, internet access, necessary technological tools, constant power failure, poor internet connectivity, lack of digital skills, and limited institutional support. Technical Skills Gap: Both students and lecturers often face difficulties due to limited skill in using e-learning technologies, affecting the academic performance and quality of E-learning of students at Anambra State Polytechnic. Financial Constraints**:**The cost of data and devices required for e-learning can be unaffordable for most students, limiting their participation and interest in E- learning activities among students of Anambra State Polytechnic. Other challenges

includes poor internet connectivity, access to technological resources; Technological infrastructure should be adopted in polytechnics for fully utilization of online e-learning platforms by most Nigerian polytechnics. (Ezeude, 2024)

1.3. Objectives of the study

The main objective of this study is to examine the effect of e-learning on the academic performance of students at Anambra State Polytechnic, Mgbakwu. The specific objectives are as follows:

i) To investigate the effect of access to infrastructure on e-learning for academic performance of studentsin Anambra State Polytechnic, Mgbakwu.

ii) To assess the effect of technical skills on e-learning for academic performance of studentsin Anambra State Polytechnic, Mgbakwu.

iii) To identify the effect finance on e-learning for academic performance of students in Anambra State Polytechnic, Mgbakwu.

1.4. Research questions

In line with the above objectives, the following research questions will be formulated;

i) To what extent does access to infrastructure affect e-learning for academic performance of students on e-learning in Anambra State Polytechnic, Mgbakwu.

ii) How does technical skills affect e-learning for academic performance of students in Anambra State Polytechnic, Mgbakwu.

iii) To what extent does financial constraints affect e-learning for academic performance of students in Anambra State Polytechnic, Mgbakwu

1.5 Hypotheses

The following hypotheses will be formulated to guide the study;
HO_1: access to infrastructure does not significantly affect e-learning on academic performance of students on e-learning in Anambra State Polytechnic, Mgbakwu.
HO_2: technical skills has no significant effect on e-learning for academic performance of students in Anambra State Polytechnic, Mgbakwu.
HO_3: financial constraints has no significant effect one-learning for academic performance of students in Anambra State Polytechnic, Mgbakwu

1.6 Significance of the study

This study is highly important to the government at all level, the parents, educational planners, decision and policy makers as well as other stakeholders in education. It will help in producing a healthy, literate self-reliant citizen that would create wealth for human development. Through

this study, the students as well as the teachers/lecturers can be able to know the effect of e-learning facilities on academic performance of students in Anambra State Polytechnic, Mgbakwu.

1.7 Scope of the study

This study centers on studying the effect of e-learning parameters (infrastructural, financial, and technical barriers) on the academic performance of students at Anambra State Polytechnic, Mgbakwu.

1.8 Limitations of study

1. **Financial constraint**- Insufficient fund tends to impede the efficiency of the researcher in sourcing for the relevant materials, literature or information and in the process of data collection (internet, questionnaire and interview).
2. **Time constraint**- The researcher will simultaneously engage in this study with other academic work. This consequently will cut down on the time devoted for the research work.

1.9 Operational Definition of terms

E-learning: E-learning is a computer based educational system that enables learner to learn anywhere and at anytime. E-learning is seen as education that uses computerized communication systems in an environment for communication, the exchange of information and interaction between student and instructors. (Abdullah & Azzedine, 2011).

Performance-is the measures of input and output or productivity of an agricultural cooperatives; cooperative performance measures the financial status of an agricultural cooperatives and their management performance. (Shamsuddin, et al, 2018)

Academic: This is relating to education, scholarship and learning, which is a dynamic process that occurs through active engagement, collaboration, and meaning-making. It is also the process of receiving or giving systematic instruction, especially at higher institutions like universities and polytechnics.

2.0 REVIEW OF RELATED LITERATURE:

The review of related literature shall be addressed under the following headings and sub-headings: Conceptual Review, Empirical Review, Gap in Empirical Literature, and Theoretical Framework.

2.1 Conceptual Review.

2.1.1 E-Learning:

E-learning is a computer based educational system that enables learner to learn anywhere and at anytime. E-learning has received much attention from various institutions and academic scholars

in the past few years. E-learning is mostly delivered through the internet, although in the past it was delivered using a blend of computer-based methods like CD-Rom (Epignosis, 2014). The use of e-learning tools in respect to learning process is critical for the successful implementation of various learning environments (Abdullah & Azzedine, 2011). Galy, Downey and Johnson (2011) noted that modern classroom, whether online or schools-based, use e-learning tools and learning management systems that capture student cognition and engage them in the learning process via technology, while increasing their need for self-directedness.

2.1.2: Academic Performance.

The expectation and explanation of academic performance and the examination of the factors relating to the academic achievement are topics of greatest importance in different educational levels. Studies have shown that prior academic performance is an important predictor of performance at various levels of education. Students' performance remains one of the key factors of the success of any technological innovation and initiative in any school and their academic performance and attitudes towards computers are suggested as having an influence on their use of e-learning tools. As ICT are being increasingly used in education, the need to monitor their impact on students' academic performance is ever extra needed. This is because it is quite important to show the relationships between technology use and students' academic performance. There is also a need to show that education should be seen as using technology not only as an end in itself, but as a means to promote creativity, empowerment and equality and produce efficient and effective learners and problem solvers.

2.1.3 Performance.

This is the measures of input and output or productivity of a student in academic performance which measures the technological skills, technological infrastructures and financial status of an institution and their management performance. Shamsuddin, et al, (2018)

2.1.4 Infrastructure Development.
Investing in robust ICT infrastructure is essential to support e-learning platforms. Capacity building and regular training programs for both students and lecturers can improve technical skills and adaptability to online learning environments.

2.1.5 Financial Support.

Providing subsidies or financial assistance for data and devices can increase accessibility for all students and lecturers. Financial constraint- Insufficient fund tends to impede the efficiency of the students and lecturers in sourcing for the relevant materials, literature or information and in the process of data collection from the internet for research and development..

2.1.6 Technological Advancing and Shared Responsibility:
This covers the advances made in communication technologies where every students' have access to information, which will as well provide knowledge in which students can apply to exploit social opportunities. Interaction between the developed and developing world and exposure to social problems in the developing world has encouraged the founding of many social

ventures. Technological infrastructure should be adopted in polytechnics for fully utilization of online e-learning platforms by most Nigerian polytechnics. (Ezeude, 2024)

2.2 Theoretical Review.

2.2.1 Constructivism Theory

Constructivism, associated with prominent educational theorists such as Jean Piaget and Lev Vygotsky, posits that learners actively construct knowledge by building upon their prior experiences and interactions with their environment. According to constructivist principles, learning is a dynamic process that occurs through active engagement, collaboration, and meaning-making. In the context of the influence of e-learning on academic performance, Constructivism is relevant as it highlights the importance of learner-centered approaches, collaborative activities, and the use of authentic tasks to promote deep understanding and academic achievement (Piaget, 1972; Vygotsky, 1978). This theory emphasizes the need for e-learning platforms to provide interactive and partaking learning experiences that support students' building of knowledge.

2.2.2 Application of the theory to the Study

Constructivist theory justifies how e-learning can influence academic performance by empowering students to take control of their learning, engage with materials interactively, and apply knowledge in practical ways.

2.3 EMPIRICALS:

Akinbode, & Olatoye, (2023), evaluated the impact of e-learning on students' academic performance at a university level. The researchers used the mixed method approach, combining both quantitative surveys and qualitative interviews to access student's engagement and performance. The result showed a positive correlation between the use of e-learning tools (such as interactive platforms, video lectures and online quizzes) and improve academic performance. Students who actively involved in online discussions are accomplished e-learning assignments scored higher than those who relied solely on traditional classroom-based learning. The study highlighted that flexibility in learning schedules, increase access to learning materials, and personalize feedback played vital roles in enhancing students' outcomes.

Tan, & Ho, (2022), explored how e-learning influences academic performance in STEM (science, technology, engineering and mathematics) subjects among high school students. The researchers compared academic outcomes of students who participated in a blended learning environment (combining traditional teaching with online resources) against those who followed a conventional, face to face classroom setup. Using pre and post-test scores, the study found that students involved in e-learning perform significantly better in STEM subjects. E-learning resources such as recreations, virtual labs, and video tutorials contributed to a deeper understanding of complex STEM concepts.

Kiyemba, & Okello, (2024), investigated the influence of e-learning on academic performance in developing countries, particularly in sub Saharan Africa. The research involved undergraduates' students from several universities that had adopted e-learning platforms. The study employed both survey data and academic performance record to access the effectiveness of e-learning. The finding revealed that while e-learning had the prospective to improve academic performance, its impact was significantly influence by factors like internet connectivity, students' motivation, and access to digital devices. Students who had consistent access to reliable internet and technological tools performed well, while those in areas with poor infrastructure faced challenges that delayed their learning outcome.

2.3.1 GAP IN LITERATURE OR FINDINGS.

Studies of Akinbode, & Olatoye, (2023), Tan, & Ho, (2022) and Kiyemba, & Okello, (2024), have shown that the utilization of these platforms correlates with improved academic outcomes among undergraduates in Anambra State but none have shown the influence of e-learning on the academic performance of students at Anambra State Polytechnic, Mgbakwu.

3.1 METHODOLOGY.

This study adopts a descriptive survey research design to gather quantitative data from students and lecturers at Anambra State Polytechnic, Mgbakwu. This design is appropriate for collecting information about people's attitudes, opinions, and experiences with e-learning. The target population includes all students and academic staff of Anambra State Polytechnic, Mgbakwu, across various departments. A sample of 120 respondents (100 students and 20 lecturers) is selected using stratified random samplingto ensure all departments and levels are represented. The questionnaire is reviewed by educational technology experts to ensure face and content validity. A pilot test is conducted with 10 students and 2 lecturers to ensure reliability**,** and the feedback is used to revise the final instrument. Quantitative data is analyzed using descriptive statistics such as frequencies, percentages, mean scores, and standard deviation. Inferential statistics like Chi-square tests or t-testsis used to test hypotheses on the relationship between e-learning and academic performance.

4.0 DATA PRESENTATION, ANALYSIS, AND INTERPRETATION

This chapter presents the data collected from 100 students and 20 lecturers of Anambra State Polytechnic, Mgbakwu. The data were analyzed using descriptive statistics such as frequency counts, percentages, mean scores, and standard deviations.

4.1 Demographic Information of Respondents

Gendr	Frequency	Percentage (%)
Male	58	48.3
Female	62	51.7

Level	Frequency	Percentage (%)
ND I	26	21.7
ND II	29	24.2
HNDI	22	18.3
HND.II	23	19.2

4.2 Usage of E-learning Platforms

Item	Yes	No
Do you use e-learning platforms?	87%	13%
Do you have access to a personal device?	74%	26%

Platforms Used	% Response
WhatsApp	92%
YouTube	65%
Zoom	45%
Moodle	25%
Google Classroom	30%

4.3 Perception of E-learning

(*5-point Likert Scale: 5 = Strongly Agree, 1 = Strongly Disagree*)

Statement	Mean	Std Dev	Interpretation
E-learning improves my understanding of course materials.	4.2	0.73	Strongly Agree
I perform better academically using e-learning resources.	3.8	0.89	Agree
E-learning makes learning more flexible.	4.5	0.65	Strongly Agree
I prefer e-learning to face-to-face lectures.	2.9	1.20	Neutral
Lack of data/internet affects my use of e-learning.	4.3	0.78	Strongly Agree

4.4 Challenges Facing E-learning

Challenges	Frequency	Percentage (%)
Poor internet connection	72	60%
High cost of data	81	67.5%
Lack of technical knowledge	42	35%
Limited access to devices	38	31.7%

4.5 Interpretation and Summary

- Majority of students use e-learning platforms, especially WhatsApp and YouTube, for academic purposes.
- Respondents agreed that e-learning enhances flexibility and understanding, but its impact on performance depends on access and usage.
- Major challenges include data costs, poor connectivity, and limited technical knowledge.

5.0 Conclusion and Recommendations

5.1 Conclusion

The study examined the influence of e-learning on academic performance among students of Anambra State Polytechnic, Mgbakwu. The findings reveal that e-learning positively influences academic engagement and understanding of course content. Students benefit from the flexibility and accessibility of digital learning platforms. However, infrastructural challenges such as poor internet connectivity, high data costs, and limited technical know-how hinder the full adoption

and effectiveness of e-learning. Thus, while e-learning has the potential to enhance academic performance, its impact is significantly shaped by institutional support and access to resources.

5.2 Recommendations

Based on the findings, the following recommendations were made:

Improve ICT Infrastructure

The school should invest in high-speed internet and establish functional computer labs or Wi-Fi zones accessible to students and staff.

Subsidize Data and Devices

Government and school management should provide data subsidies and affordable devices to students, especially those from low-income backgrounds.Policy Development; the institution should develop a clear policy framework on the use of e-learning, including assessment methods, platform standards, and student support.

Training and Orientation

Regular digital literacy workshops should be organized for students and lecturers to enhance their competence in using e-learning tools. Blended Learning Approach A combination of traditional classroom teaching and e-learning (blended learning) should be adopted to bridge gaps caused by technological limitations.

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