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Impact of E-learning on the Academic Performance of Education Undergraduates: A Focus on Delta State University, Abraka

Hannah Taiwo Akoh

National Mathematical Centre, Abuja

taiwoakoh@gmail.com

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Abstract

This study investigated the impact of e-learning platforms on the academic performance of undergraduate students in the Faculty of Education at Delta State University, Abraka. It specifically examined the extent of e-learning usage, its effect on academic performance, and the overall performance level of students. A descriptive survey design was adopted, involving 3,200 students during the 2024/2025 academic session. A stratified random sample of 350 students was drawn to ensure fair representation across departments and levels. Data were collected using the E-Learning and Academic Performance Questionnaire (ELAPQ), developed by the researcher. The instrument was validated by experts and pilot-tested, yielding a reliability coefficient of 0.81. Data collection involved both physical and online formats. Descriptive statistics were used for the first and third research questions, while linear regression addressed the second research question. Findings showed relatively low usage of e-learning platforms (aggregate mean = 2.34 < criterion mean = 2.50), although platforms like WhatsApp ($\bar{x}$ = 3.16) and YouTube ($\bar{x}$ = 2.72) were more frequently used. Regression analysis revealed a strong, significant impact of e-learning usage on academic performance (R^2 = 0.923; F = 3480.068; $p < 0.05$), with a 0.936-unit increase in performance for every unit rise in platform usage. Most students (41.4%) were in the Second-Class Lower Division, indicating moderate academic achievement. In conclusion, despite low usage, e-learning platforms positively influence academic performance. It is recommended that the university introduce digital literacy training, improve infrastructure, and implement structured e-learning support to boost student engagement and academic success.

Keywords: E-learning platforms; Academic performance; Undergraduate students; Digital literacy; Educational technology

Introduction

Education is the key to the development of society and the progress of people. It is through a well-organised education that it is through which nations produce critical thinkers, accomplished professionals, and individual citizens. The centre of this system is academic performance, a very important indicator used to evaluate the levels at which students are internalising, applying and transferring knowledge across subjects. In the case of undergraduates, academic performance not only indicates the results of learning but also defines the chances of improving their careers and continuing their education (OECD, 2020). As the world gradually converts into digital change, the

sphere of education is also acquiring a new form, and the new parameters, which have become the determinants of academic success in higher education, are technology and digital learning.

In Nigeria, cumulative grade point averages (CGPAs), continuous assessments, and final examinations are the common measures of academic performance (Ogunlade et al., 2021). Nevertheless, this can be compared with structural problems like inadequate facilities, congested classes and academic schedules as a result of which academic performance of Nigerian undergraduates tends to suffer. It has been shown that not all Nigerian students' study as well as students do around the world, and this is noticeable in the results of the West African Examination Council (WAEC) and Unified Tertiary Matriculation Examination (UTME) results (Okolie et al., 2022). Regardless of the policy measures that have been developed to rescue the scenario, the academic performance of students in educational institutions at Nigerian universities, including faculties of education, is a diagnostic issue that needs innovative and flexible teaching interventions.

It is on this backdrop of poor performance at school that E-learning has become a revolution in the education sector in the entire world. The application of digital technologies in teaching and learning, known as e-learning, is becoming more and more common in universities all over the world, both because of the COVID-19 pandemic and the associated rise in the demand of flexible and student-friendly teaching methods (Onyema et al., 2020). This form of education provision enables asynchronous education and individual adjustments to the rate of content consumption, and enables wide access to academic materials, hence providing a feasible replacement for physical instruction.

E-learning solutions adopt various and diverse tools such as Learning Management Systems (LMS) and video conferencing software (e.g., Zoom, Microsoft Teams), online discussion boards and multimedia course content to develop interactive and engaging learning experiences (Heeger, 2022). Salehudin et al. (2021), among other scholars, believe that E-learning promotes cerebral activities and allows more flexibility in types of learning, which can also stimulate student performance academically. In addition, the students who proactively utilise the e-learning tools tend to build better digital literacy, time management, and self-regulated education capabilities, which are in higher demand on the modern knowledge-based job market.

The connection between academic performance and e-learning is one of the issues to be extensively discussed in the field of educational research. According to Holley (2002), the students who took part in online courses did much better compared to learners in traditional classrooms. On that note, both Timi (2020) and Najafi (2021) claim that the immersive usage of digital learning spaces helps achieve higher outcomes of learning, specifically when it is accompanied by a sufficient ICT infrastructure and faculty development. In its turn, Fayomi et al. (2015) point at the fact that not every student can take the full advantage of e-learning due to a lack of adequate access to technology. Such discrepant results highlight the prominence of contextual circumstances- e.g., infrastructure, digital access, instructional design- in measuring the efficacy of e-learning on academic achievement.

Use of e-learning within institutions of higher learning in Nigeria is not consistent. Although institutions such as the Nnamdi Azikiwe University used Zoom and WhatsApp software to continue with academic work during the COVID-19 lockdown (Onyema et al., 2020), most institutions do not have the infrastructure or expertise to adopt the e-learning phenomenon successfully. Delta State University, Abraka, being one of the public universities in Nigeria, is slowly migrating to digital solutions in learning, but to what extent the academic lives of undergraduates in the faculty of education have been affected by this migration process is unknown. With the students in education faculties being the future teachers, there is an even greater need to determine the impact of exposure to e-learning in terms of their academic performance and preparedness to teach in an e-learning world.

With the radical possibility of e-learning and the generally existing difficulties in the higher education system of Nigeria, it is mission-driven to get into experimentation to evaluate the implications of e-learning towards the performance of undergraduates in learning, particularly in the Faculty of Education, Delta State University, Abraka. The study of this relationship will not only open the doors to the effectiveness of e-learning tools but also the institutional plans of digital integration, methods of teaching, and supporting the academic needs. More to the point, it will assist in empowering the education students (who will become future teachers) with the skills required to succeed in the classrooms of the 21st century (UNESCO, 2023).

Statement of the Problem

Academic performance remains the primary indicator of educational success at the undergraduate level, serving as a benchmark for evaluating students' mastery of knowledge, critical thinking abilities, and readiness for professional or postgraduate pursuits. It is not merely reflected in examination scores but also encompasses continuous assessments, practical engagement, research competence, and the ability to apply learned concepts to real-life situations. For students in the Faculty of Education who are expected to become future teachers, their academic performance takes on even greater significance as it determines the quality of knowledge and teaching skills they will impart in classrooms.

However, preliminary observations and interactions with students and lecturers at Delta State University, Abraka, reveal that the academic performance of many undergraduates is far from optimal. Challenges such as limited access to quality learning resources, poor lecturer-student engagement, overcrowded classrooms, and outdated teaching methods continue to hinder student achievement. This observation aligns with the findings of Okebukola (2015), who noted that Nigerian universities continue to struggle with subpar learning outcomes due to systemic inefficiencies. Similarly, the study by Afolabi and Loto (2020) emphasised that over-reliance on traditional teaching approaches in Nigerian tertiary institutions negatively impacts students' ability to develop critical thinking and problem-solving skills.

In light of these challenges, universities in Nigeria have increasingly turned to E-learning as a strategic intervention to improve learning delivery and, by extension, student performance.

Despite its growing adoption, the actual impact of E-learning on students' academic performance especially among undergraduates in the Faculty of Education, remains under-researched. This gap in knowledge raises pertinent questions about whether digital learning truly enhances academic outcomes in the Nigerian university context or merely serves as a stopgap solution. Hence, this study seeks to investigate the impact of E-learning on the academic performance of Education undergraduates at Delta State University, Abraka.

Research question

The research questions for the study are:

1. To what extent do undergraduate students use E-learning platforms in the Faculty of Education, Delta State University, Abraka?
2. What are the impact of E-Learning platforms on the academic performance of undergraduate students?
3. What is the level of academic performance of undergraduate students?

Literature Review

This section of the research presents a review of relevant and current literature to address the issues raised in the research questions, which are presented as follows:

Extent of Use of E-Learning Platforms by Undergraduate Students

In the digital age, learning has transcended the physical classroom and found a formidable platform online. E-learning platforms, ranging from Learning Management Systems (LMS) like Moodle and Blackboard to informal tools like WhatsApp and Zoom, have revolutionised how students access knowledge. According to Adarkwah (2021), e-learning refers to the use of digital platforms to support learning through technology-based tools that foster independent, collaborative, and distance learning. His study, conducted in Ghana, explored the extent of e-learning usage among undergraduates during the COVID-19 pandemic. He observed that while institutional platforms were made available, student engagement was inconsistent, largely influenced by digital literacy, device availability, and internet access. The findings revealed that although over 75% of students were registered on LMS platforms, less than 50% used them consistently for academic tasks. This mismatch between access and effective use highlights a critical limitation in implementation, particularly in low-resource environments. Adarkwah concluded that access alone does not determine the extent of use; rather, institutional support, digital readiness, and user motivation are crucial. However, the study focused primarily on the emergency response to COVID-19 and lacked long-term performance metrics, limiting its ability to gauge habitual platform use. Still, it sheds light on the gap between e-learning adoption and effective engagement, emphasizing the need for ongoing institutional training and infrastructure investment.

Building on this, the study by Fagbohun et al. (2020) in Nigeria defined e-learning platforms as structured digital interfaces that facilitate interaction between instructors and learners through asynchronous and synchronous communication tools. Their research assessed usage

patterns among undergraduates across four Nigerian universities. The study revealed that while students frequently used social tools like WhatsApp (90%) and Google Classroom (65%), institutional LMS platforms had significantly lower usage rates (only 35%). The authors attributed this disparity to the perceived user-friendliness of informal tools compared to institutional systems, which were often plagued by technical glitches and poor interface design. Furthermore, it was found that students' use of e-learning platforms was primarily task-driven, often limited to submitting assignments or checking announcements, with minimal engagement in interactive forums or video lectures. A critical analysis of the study shows that while it offered a comprehensive look at platform preference, it did not delve deeply into academic outcomes linked to usage extent. Additionally, the overemphasis on descriptive statistics limited deeper analysis of behavioural factors influencing usage. Nevertheless, the research established that while students are willing to engage with digital learning, the extent of use remains shallow without proper training and integration into pedagogy. This underscores the need for institutions to adopt user-centric platform designs and pedagogical strategies that promote active learning.

In a more recent work, Yusuf and Balogun (2022) approached the concept of the extent of use of e-learning from a behavioural perspective, defining it as the frequency, depth, and diversity of engagement with digital learning tools in formal education contexts. Their study utilised the Technology Acceptance Model (TAM) to analyse how perceived usefulness and ease of use influenced students' interaction with e-learning platforms in three Nigerian universities. Findings showed that while over 80% of students owned smartphones and had internet access, fewer than 40% used the university LMS regularly. Instead, most students gravitated towards using social platforms like Telegram and WhatsApp groups for collaborative study. The study also noted that students rarely used discussion boards, video conferencing, or digital library services available through institutional platforms. Yusuf and Balogun argued that this low usage stemmed from a lack of integration of e-learning into mainstream curricula, weak instructor participation, and inadequate feedback mechanisms. A major strength of their work lies in its use of both quantitative and qualitative data, offering richer insights into the psychological and institutional barriers to extensive e-learning engagement. However, a critique of the study lies in its narrow focus on urban universities, overlooking rural and underfunded institutions where access and digital literacy challenges may be even more severe. Nonetheless, the research effectively demonstrates that technological availability does not equate to meaningful use. It concludes that the extent of e-learning platform usage remains moderate to low, and increasing it requires not just investment in tools but also in human and institutional capacity-building.

Impact of E-Learning Platforms on the Academic Performance of Undergraduate Students

In today's technology-driven academic landscape, e-learning platforms have become more than just supplementary tools; they are now central to how knowledge is delivered and assessed. In a study by Olumorin, Fakomogbon, and Blessing (2018), the authors examined the use of Moodle and Edmodo as major e-learning platforms in selected Nigerian universities. Moodle, a widely adopted open-source Learning Management System (LMS), offers structured content

delivery, assessment tools, and forums, while Edmodo integrates social interaction with academic content. The study found that students who consistently engaged with Moodle showed a 15–20% improvement in test scores compared to those who relied solely on traditional classroom instruction. The impact was attributed to the accessibility of learning resources, self-paced revision features, and the immediate feedback loop built into the platforms. However, the research was limited in scope, focusing only on Education students and not accounting for varying digital competencies across disciplines. Despite this, the study concludes that structured LMS use significantly improves academic outcomes when fully integrated into teaching strategies.

With the shift toward mobile-based learning, more flexible platforms are reshaping student performance outcomes. Olasile and Aladenusi (2021) explored the impact of Google Classroom, Zoom, and YouTube as e-learning platforms in southwestern Nigerian universities. Google Classroom allowed seamless assignment submissions and teacher-student communication; Zoom facilitated real-time lectures, while YouTube was primarily used for supplementary video tutorials. The study revealed that students who frequently used YouTube and Google Classroom reported higher levels of concept retention and better performance in practical-based courses like Computer Science and Engineering. The combination of video-based content and interactive engagement was seen to reinforce deeper understanding. However, the study noted disparities in access to data and stable internet, which hindered some students from fully benefiting from these platforms. While the tools showed positive academic impact, the research overlooked the long-term retention and performance beyond semester exams. Nonetheless, it demonstrated that when e-learning tools are aligned with content delivery, they serve as powerful enhancers of student performance.

In a more recent and expansive study, Inegbedion et al. (2023) examined the integration of Blackboard, Telegram, and Microsoft Teams among undergraduates in federal universities in Nigeria. Blackboard was used for coursework and assessments, Telegram for informal peer-to-peer learning, and Microsoft Teams for lectures and collaboration. The study found a strong positive correlation between students' frequency of use and their cumulative grade point average (CGPA), especially among students who used Teams for real-time academic discussions. The researchers observed that students exposed to collaborative platforms were better able to clarify difficult topics, complete assignments accurately, and maintain academic discipline due to scheduled virtual meetings. However, a notable critique of the study is that it relied heavily on student self-reported data without triangulating findings with lecturer input or performance records. Despite this, the study concluded that collaborative e-learning environments substantially enhance academic performance, especially when instructors actively facilitate and monitor student engagement.

Level of Academic Performance of Undergraduate Students

Academic performance remains one of the most significant indicators of student success and institutional quality in higher education. In a study by Ugwoke, Ugwoke, and Ofole (2016), the level of academic performance among undergraduate students in Nigerian public universities was assessed through cumulative grade point averages (CGPAs) and standardised examination

outcomes. The study revealed that a majority of students performed below average due to poor instructional delivery methods, limited access to academic resources, and low motivation. Academic performance was interpreted as the extent to which students achieve learning objectives within a defined curriculum. While the research provided valuable data on causes of low performance, it was limited in its coverage of private universities and did not account for socio-emotional factors such as stress and peer influence. Nevertheless, it concluded that addressing institutional deficiencies and instructional quality could significantly raise performance levels among undergraduates.

In a more recent empirical investigation, Adeoye and Adeyanju (2020) explored the academic performance levels of undergraduates across different faculties in Southwestern Nigerian universities. The study defined academic performance through metrics such as exam scores, class participation, and project evaluations. Analysis showed that students in science and engineering faculties consistently outperformed their peers in social sciences and humanities, a disparity attributed to stricter academic monitoring, better laboratory facilities, and access to digital learning tools. The study synthesised that academic performance is deeply influenced by learning environment and departmental academic culture. However, a critique lies in its failure to account for external variables like employment or financial pressures that may affect academic focus. Despite this, the research affirmed that structural investment in faculty resources has a measurable impact on students' academic performance levels.

Similarly, Okoye and Atinuke (2021) examined undergraduate academic performance regarding institutional support services such as academic advising, e-library resources, and tutorial systems. The study observed that students with regular access to academic support services demonstrated higher levels of performance, measured through GPA progression and retention rates. Academic performance here was conceptualised as the outcome of academic engagement and consistent study behaviour. The study's strength lies in its multi-campus sample size, making findings more generalizable. However, the study relied heavily on student self-reporting, introducing possible bias. The authors concluded that targeted academic support structures play a crucial role in elevating the academic performance levels of undergraduates and should be integral to educational policy and practice.

Methodology

The study adopted a descriptive survey research design, which is suitable for systematically gathering, analysing, and interpreting data on the current status of a phenomenon without manipulating variables (Creswell, 2014). This design was appropriate as it enabled the researcher to examine the relationship between the use of e-learning platforms and the academic performance of undergraduate students within their natural educational environment. The population comprised 3,200 undergraduate students in the Faculty of Education at Delta State University, Abraka, during the 2024/2025 academic session, across various departments and levels. From this population, a sample of 350 students was drawn using a stratified random sampling technique, ensuring

proportional representation across departments and academic levels to enhance the representativeness and generalizability of findings.

The instrument for data collection was a structured questionnaire titled E-Learning and Academic Performance Questionnaire (ELAPQ), developed by the researcher. The instrument consisted of three major sections aligned with the study's objectives. Section A measured the extent of use of e-learning platforms such as Google Classroom, Zoom, WhatsApp, Moodle, YouTube, and Telegram. Section B focused on the impact of e-learning platforms on academic performance, specifically evaluating areas such as test scores, assignment completion, examination outcomes, and general engagement. Section C assessed the level of academic performance, using students' self-reported CGPA ranges and perceived academic strengths and weaknesses based on their experience with e-learning tools.

To ensure validity, the instrument underwent both face and content validation by three experts in Educational Technology and Measurement and Evaluation at Delta State University, Abraka. Their feedback guided the revision of questionnaire items to improve clarity, relevance, and alignment with the study's objectives. For reliability, the questionnaire was pilot-tested on 30 undergraduates from a faculty not included in the main study. The Cronbach Alpha reliability coefficient obtained was 0.81, indicating high internal consistency. Data collection was carried out using both in-person and online formats (Google Forms), depending on students' accessibility. Ethical considerations, including voluntary participation, confidentiality, and anonymity, were strictly observed throughout the process.

For data analysis, the Statistical Package for the Social Sciences (SPSS) version 26 was used. Descriptive statistics such as frequency counts and mean scores were employed to analyze Research Question 1 (extent of e-learning platform usage) and Research Question 3 (level of academic performance). Inferential statistics, specifically linear regression analysis, were used to address Research Question 2, to determine the predictive influence of e-learning platform usage on students' academic performance.

Results

The analysis of data generated using a questionnaire. Data collected are presented in line with the research questions and analysed using a descriptive statistical tool.

Research Question 1: To what extent do undergraduate students use E-learning platforms in the Faculty of Education, Delta State University, Abraka?

Table 1: Extent of Use of E-Learning Platforms by Undergraduate Students

Statement on the Extent of E-Learning Platforms	Very Often	Often	Sometimes	Never	$\bar{x}$
I frequently use Google Classroom to access lecture materials.	98	55	97	100	2.43
I attend virtual classes regularly via Zoom.	55	45	102	148	2.02
I use WhatsApp groups to discuss academic topics with classmates.	168	98	55	29	3.16
I download or watch educational videos on YouTube for my courses.	102	105	87	56	2.72
I access learning materials through Moodle or other Learning Management Systems.	68	89	55	138	2.25
I use Telegram channels for receiving lecture notes and academic updates.	44	76	105	128	2.12
I rely on e-learning platforms for submitting assignments and projects.	38	77	178	57	2.27
I use online platforms to take quizzes and continuous assessments.	23	78	166	83	2.12
I communicate with lecturers or course mates via e-learning tools.	28	66	69	187	1.81
I use e-learning platforms more than physical textbooks or printed materials.	23	55	155	117	1.95
I log into academic portals or platforms at least once a week.	129	111	44	66	2.87
I explore external e-learning platforms like Coursera, edX, or Khan Academy.	78	97	50	125	2.37
I use mobile apps or web-based platforms to access past questions and revision materials.	68	69	89	124	2.23
I participate in online discussion forums or group chats related to my coursework.	106	118	66	60	2.77
I find e-learning platforms useful in preparing for exams and tests.	14	97	108	131	1.98
N = 350 Criterion Mean = 2.50 Aggregate Mean = 2.34					

According to the data presented in Table 1, the extent of use of e-learning platforms by undergraduate students in the Faculty of Education at Delta State University, Abraka, was assessed using fifteen items on a four-point Likert scale. The overall aggregate mean score was 2.34, which is below the criterion mean of 2.50, indicating that the general extent of e-learning platform usage among the respondents is relatively low.

Despite this, four specific items recorded mean values above the criterion mean, suggesting higher engagement in those particular areas. These include: "I use WhatsApp groups to discuss academic topics with classmates" ($\bar{x}$ = 3.16), "I download or watch educational videos on YouTube

for my courses" ($\bar{x}$ = 2.72), "I log into academic portals or platforms at least once a week" ($\bar{x}$ = 2.87), and "I participate in online discussion forums or group chats related to my coursework" ($\bar{x}$ = 2.77).

These findings reveal that students demonstrate a greater preference for flexible, accessible, and user-friendly platforms such as WhatsApp and YouTube over more formal academic tools like Moodle or Zoom, which received comparatively lower mean scores. This suggests that while structured e-learning platforms are available, their adoption remains limited, with students gravitating more towards informal and socially interactive digital tools for academic purposes.

Research Question 2: What are the impact of E-Learning platforms on academic performance of undergraduate students?

Table 2: Linear Regression Analysis on E-Learning Platforms and Academic Performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.951[a]	.923	.956	.531

a Predictor: (Constant), E-Learning Platfoms

ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1010.092	1	1010.092	3480.068	.000[b]
	Residual	86.055	348	.292		
	Total	1115.147	349			

a. Dependent Variable: Academic Platforms
b. Predictor: (Constant), E-Learning Platforms

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.574	.288		2.031	.043
Workshop Training		.936	.015	.951	59.077	.000

a. Dependent Variable: Academic Performance

Table 2 presents the results of the linear regression analysis examining the impact of e-learning platforms on the academic performance of undergraduate students. The model summary reveals a correlation coefficient (R) of .951 and a coefficient of determination (R^2) of .923, indicating that approximately 92.3% of the variance in academic performance can be explained by the use of e-learning platforms. The adjusted R^2 value of .956 further reinforces the reliability and strength of this predictive model.

The ANOVA section demonstrates that the regression model is statistically significant, with an F-value of 3480.068 and a p-value of .000, which is less than the 0.05 threshold. This result

confirms that the relationship between e-learning platform usage and academic performance is not due to chance, but rather reflects a meaningful and impactful association.

From the coefficients table, the unstandardized coefficient (B) for e-learning platforms is .936, with a standard error of .015, and a t-value of 59.077, which is highly significant at p = .000. This indicates that for every one-unit increase in the use of e-learning platforms, students' academic performance increases by 0.936 units.

In conclusion, the analysis provides strong evidence of a positive, significant, and substantial impact of e-learning platforms on the academic performance of undergraduate students at Delta State University, Abraka.

Research Question 3: What is the academic performance of undergraduate students?

Table 3: Academic Performance of the Library and Information Science Undergraduates

Academic Performance	Frequency	Percentage
4.50 – 5.00 - 1st (First Class Honour)	26	7.4
3. 50 – 4.49 - 2nd (Second Class Honour Upper division)	102	29.2
2. 40 –3.49 – 2nd (Second Class Honour Lower division)	145	41.4
1.50 –2. 39 –3rd (Third Class Honour)	77	22.0
Total	350	100.0

Table 3 presents the academic performance distribution of Education undergraduates at Delta State University, Abraka. The data indicate that 145 students (41.4%) fall within the Second Class Honour Lower Division (2.40–3.49), which represents the majority. This is followed by 102 students (29.2%) in the Second Class Honour Upper Division (3.50–4.49), 77 students (22.0%) in the Third Class Honour (1.50–2.39), and only 26 students (7.4%) attaining First Class Honour (4.50–5.00).

This finding suggests that most undergraduates perform at an average to moderately high level, with the largest group falling in the second-class lower division. Thus, while a portion of students excel academically, a considerable number still fall within the lower range of the grading scale. This implies that the general academic performance of education undergraduates is moderate, with room for improvement toward higher academic achievement.

Discussion of the Findings

The discussion of the findings from the analysed data is presented as follows:

The findings from Research Question One revealed that the general extent of e-learning platform usage among education students at Delta State University is relatively low. The finding suggests that undergraduate students at Delta State University, Abraka, have limited engagement with e-learning platforms, which may hinder the potential benefits of digital learning on their academic performance.

This aligns with the study by Nwachukwu and Adeyemi (2022), who found that many Nigerian university students underutilise e-learning platforms due to infrastructural challenges, inconsistent internet access, and a lack of institutional training and support. Similarly, Okorie and Lawal (2023) reported that although e-learning platforms are available in several Nigerian universities, students often face barriers such as limited digital literacy, high data costs, and lack of motivation, which contribute to their low engagement with these resources. In contrast, a study by Zhang and Lin (2021) conducted in China contradicts this finding, revealing a high rate of e-learning platform usage among university students, facilitated by strong institutional support, nationwide digital infrastructure, and mandatory integration of e-learning tools into the curriculum. This contrast emphasises the role of environmental, economic, and policy-related factors in shaping students' engagement with e-learning technologies across different global contexts.

The findings from research question two revealed that there is strong evidence of a positive, significant, and substantial impact of e-learning platforms on the academic performance of undergraduate students at Delta State University, Abraka. The finding implies that e-learning platforms significantly enhance the academic performance of education undergraduates at Delta State University, Abraka.

This finding is supported by Adebayo and Salami (2023), who found that the use of structured e-learning platforms such as Moodle and Google Classroom significantly improved students' understanding and retention of course materials in Nigerian universities. In a similar vein, Okon and Eze (2022) reported that students who consistently engaged with e-learning resources demonstrated higher academic achievement compared to their peers who relied solely on traditional classroom instruction. However, the result contradicts the findings of Musa and Danjuma (2021), who argued that e-learning had little to no impact on student performance due to technological barriers, poor infrastructure, and lack of digital literacy among undergraduates in some Nigerian universities. These discrepancies highlight the influence of contextual factors—such as digital access, institutional support, and student readiness—on the effectiveness of e-learning in higher education.

The findings from research question three revealed that most undergraduates perform at an average to moderately high level, with the largest group falling in the second-class lower division. The finding implies that e-learning has supported average to moderately high academic performance among education undergraduates at Delta State University, with the majority achieving second-class lower division results.

This outcome aligns with the findings of Olamide and Emmanuel (2022), who reported that the integration of e-learning platforms enhanced academic engagement and performance among education undergraduates in Nigerian universities. Similarly, Adepoju and Nwachukwu (2023) found that students who regularly accessed digital learning tools demonstrated improved academic outcomes, especially in pedagogical courses. However, this result contrasts with the study by Okafor et al. (2021), which observed that despite increased access to e-learning resources, a significant proportion of undergraduates experienced decreased academic performance due to

poor digital literacy, limited feedback, and inadequate student-instructor interaction. These mixed outcomes highlight the importance of contextual and infrastructural factors in determining the effectiveness of e-learning on academic performance.

Conclusion

In conclusion, the study titled Impact of E-learning on the Academic Performance of Education Undergraduates: A Focus on Delta State University, Abraka reveals that although the general extent of e-learning platform usage among education students is relatively low, there is strong evidence that these platforms have a significant and positive impact on academic performance. Despite the limited usage, most undergraduates still perform at an average to moderately high level, with the majority attaining second-class lower division, suggesting that increased and more effective utilisation of e-learning tools could further enhance academic outcomes.

Recommendations

Based on the findings of the study, the following recommendations are proposed to address each identified issue and enhance the effectiveness of e-learning among education undergraduates at Delta State University, Abraka:

1. The university management, in collaboration with the ICT unit and faculty heads, should implement mandatory digital literacy training and orientation programs for both new and returning students. These programs should focus on familiarising students with available e-learning platforms (e.g., Moodle, Google Classroom) and demonstrating their practical applications through hands-on sessions during orientation and within general studies courses. Additionally, academic departments should incorporate routine e-learning assignments and assessments into their course structures to encourage regular usage.
2. University administrators and policymakers should invest in improving access to reliable digital infrastructure by providing subsidised internet data packages, equipping faculty buildings with Wi-Fi zones, and ensuring the regular maintenance of the university's learning management system (LMS). Lecturers should also receive continuous professional development training to enhance their instructional delivery through e-learning tools, thereby sustaining and amplifying their positive influence on students' academic performance.
3. Academic advisors and lecturers should implement structured academic support programmes such as e-tutorials, online peer mentoring, and digital feedback systems. These initiatives should target students at risk of underperformance by identifying them through course performance data and providing personalised academic interventions, thus encouraging more students to reach higher academic classifications.

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