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Influence of Artificial Intelligence-Based Learning Platforms on Academic Performance of Business Education Students in Financial Accounting

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Abstract
The study examined the influence of AI-based learning platforms on academic performance of business education students in financial accounting in Ogun State. The purpose was to explore how AI platforms influence accounting students' academic performance. The descriptive research design of survey type was adopted. The target population and sample size selected comprised 3,924 and 555 Business Education undergraduates of Olabisi Onabanjo University, Ago-Iwoye and Tai Solarin Federal University of Education, Ijagun, Ogun State respectively using simple random and stratified sampling techniques. Four instruments Adaptive Learning Questionnaire (ALQ) (r = .88), AI-Learning Powered Tool Questionnaire (ALPTQ) (r = .84), AI-Chatbot Questionnaire (ACQ) (r = .93) and Proforma Form for Academic Performance (PFAP) (r = .91) were used for data collection. The null hypotheses were tested using Regression analysis. The findings revealed that Adaptive learning (β = .213, t = .162, p < .05), AI-learning powered tool (β = .422, t = .490, p < .05) and AI-Chatbot (β = .338, t = 8.007, p < .05) positively influence academic performance of BED students in financial accounting. The usage of Adaptive learning, AI-learning powered tool and AI-Chatbot jointly influence academic performance of BED students in financial accounting R = 0.119, p < .05. The study concluded that AI – based learning platforms are important to academic performance of business education students in financial accounting. It was recommended that there is need to review BED curriculum in financial accounting to include compulsory teaching and learning of AI skills to aid effective instructions.

Keywords: Adaptive learning, AI-powered tool, AI-Chatbot, Academic Performance, Financial Accounting.

1. Introduction

The provision of smart and efficient parking systems is Globally, one of the primary objectives of the university is the enhancement of students' academic performance because it measures the quality of the institution and reputation in the labour market. It dictates the capability of students in his study and showcases the extent of understanding of what lecturers had taught the students. However, Godpower et al. (2025) stressed that university students' academic performance refers to how well students achieve their educational goals, typically measured by grades, CGPA, and other academic achievements and it represents the multifaceted concept influenced by various factors, including individual abilities, learning habits, and the university environment. The academic performance of Business Education students especially in financial accounting is of major concern to the authority in the field because this discipline represented a vocational programme and part of BED segments and it prepares its recipients towards the attainment of economic sustainability in the long run (Elujekwute et al., 2021). However, the current level of students' academic performance in business education financial accounting is unsatisfactory and signals a worrying trend in the field of professional accounting. As their role in the nation building, very sensitive to the development and prudency for business growth it's been put to question (Nwaigburu et al., 2019). Although, arguments in the literature (Anyaeneh & Nzegwu, 2017, Nwosu, 2019; Alonta et al., 2024) advocated for shift from traditional method of teaching to new technology and advancement in teaching vocational programmes to increase the level of students' academic performance (Oginni, 2025). According to Aniella and Gabriel (2025), evidences revealed that improvement in students' academic performance was as a result of change in instructional method from local point of view to adopting Artificial Intelligence-based learning. They further reacted that AI technologies enhance learning experiences by enabling personalized education and offering intelligent tutoring systems that adapt to each student's pace and ability. Baker (2021) stated that AI-based learning platform is effective for instruction and encompassed adaptive learning, AI-learning powered tools and AI-Chatbot support various learning activities. In the opinions of Hennekeuser et al. (2024), AI-powered adaptive learning tailors educational content to individual student needs using AI algorithms that analyze performance and adjust difficulty levels. This personalized approach aims to enhance learning

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efficiency, knowledge transfer, and student engagement by providing customized learning paths and feedback. Also, adaptive learning also known as adaptive teaching is an educational method which uses computer algorithms as well as artificial intelligence to orchestrate the interaction with the learner and deliver customized resources and learning activities to address the unique needs of each learner (Nwile & Edo, 2023). AI-powered adaptive learning platform adjusts control the hard and content learning materials in normal circumstance of student responses that provides immediate and targeted feedback, helping students understand their mistakes and improve their learning (Godpower et al., 2025) while Elujekwute et al. (2021) argued that it further creates a profile of each student including their knowledge, skills, learning preferences, and learning pace.

In addition, AI-based learning platform is an AI-powered tool which offer numerous benefits to student academic performance by personalizing learning, providing 24/7 support, and enhancing assessment and feedback. These tools can adapt to individual learning styles, offer timely assistance, and help students identify areas for improvement, ultimately leading to a more effective and engaging learning experience. Intelligent tutoring systems, automated grading and virtual assistants enhance both teaching efficiency and student engagement. Through this platform, it can make learning more interactive and engaging through gamification, simulations as well as provides relevant learning resources and activities based on student interests and preferences, increasing their motivation to learn (Oginni, 2025). However, by leveraging these benefits, AI-based learning tools can significantly contribute to improved students' academic performance and create a more effective and engaging learning environment. In addition, Baker (2021) reiterated that AI-Chabot is a computer program that simulates human conversation using artificial intelligence. It leverages technologies to understand and respond to user inquiries in a natural and conversational way, going beyond simple pre-programmed responses. Essentially, it is a digital assistant that can handle students' learning challenges, provide information, or even engage in more complex interactions, often available 24/7. In the opinion of Hennekeuser et al. (2024), AI-Chatbot can benefit students' academic performance by providing personalized learning support, instant feedback, and access to information, ultimately enhancing their understanding and engagement with the material. They act as virtual tutors, offering tailored assistance and resources to help students succeed in their studies.

Theoretical framework of Technology Acceptance Model (TAM) by Fred Davis in 1989 was adopted in the study. The theory explained how individuals accept and use new digital tools for better engagement in learning. The theory concluded that the extent to which students see the importance of using such digital tool predict their further usage in acquiring needed information for effective learning and engagement. The usage or applicability of this model was that students' academic performance can be positively impacted by their acceptance and use of technology such as AI-based learning platforms. Specifically, when students perceive technology as benefits towards their academic performance they tend to engage more actively in learning, leading to improved academic outcomes. Empirically, Godpower et al. (2025) examined the utilization of AI and how it could aid postgraduates learning outcomes and it was found that AI-powered tools directly influence business education postgraduate students learning outcomes. While Nwaigburu and Eneogwe (2019) found that AI-powered tools served as engine that have positive tendency towards enhancing student academic performance. Similarly, Nwile and Edo (2023), were of the opinions that out of AI-platforms, AI-Chatbot constantly influence students' learning outcomes in tertiary institution through personalized learning experience. In another by Aniella and Gabriel (2025), it was found that AI-learning platforms influence students' performance. In the study carried out by Elujekwute et al. (2021) concluded that through the effective usage of AI-learning platform, students learning could be more effective and robust thereby aiding their academic performance towards the attainment of sustainable economic development.

However, despite several studies on how AI-based learning platforms affect students' academic performance, significant numbers of this study were based on content analysis and there have been dearth of literature on how AI-based learning platforms such as adaptive learning, AI-learning powered tools and AI-Chatbot affect academic performance of business education students in financial accounting. Furthermore, the current situation of poor academic performance from such angle is pathetic and worrisome that sound danger for tomorrow accountants and business managers. However, one may begin to wonder, despite numbers of qualified personnel in charge of teaching accounting BED programmes, the level of students' performance in the discipline remains unsatisfactory. Conflicting opinions from the body of literature have raised eye-brown on the traditional methods of teaching that only centered to teachers while leaving students as bench-warmers. Also, literature have doubt on the efficacy of traditional methods to training financial accounting BED programmes in this global era to aid academic performance. This study was an attempt to correct the downward trends of financial accounting BED programmes students' academic performance through the usage of AI – based learning platforms in Ogun State. In view of this, the study sought to determine the influence of artificial intelligence-based learning platforms on academic performance of business education students in financial accounting in Ogun State.

2. Objectives of the Study

The main objective of the study was to examine the influence of AI-based learning platforms on academic performance of BED students in financial accounting in Ogun State. Specifically, the study examined the:

1. influence of Adaptive learning on academic performance of BED students in financial accounting;
2. influence of AI-learning powered tool on academic performance of BED students in financial accounting;
3. influence of AI-Chatbot on academic performance of BED students in financial accounting;
4. Composite contribution of AI-based learning platforms (Adaptive learning, AI-learning powered tool and AI-Chatbot) on academic performance of BED students in financial accounting.

3. Hypotheses

$H_0$1: There is no significant influence of Adaptive learning on academic performance of BED students in financial accounting.

$H_0$2: There is no significant influence of AI-learning powered tool on academic performance of BED students in financial accounting.

$H_0$3: There is no significant influence of AI-Chatbot on academic performance of BED students in financial accounting.

$H_0$4: There is no significant composite contribution of AI-based learning platforms (Adaptive learning, AI-learning powered tool and AI-Chatbot) on academic performance of BED students in financial accounting.

4. Methodology

In this study, descriptive research design of survey type was used. The justification for adapting this design was that it allowed the researchers to obtained the features of information that are necessary to answering research questions and testing null hypothesis. The target population of this study comprised 3,924 Business Education undergraduates in Public Universities in Ogun State that have BED programme namely Olabisi Onabanjo University, Ago-Iwoye having 1,236 BED undergraduates and Tai SolarinFederal University of Education, Ijagun having 2,688 BED undergraduates for the academic session 2024/2025. However, Table 1 further explained how the population distributed:

The sample size was 555 BED undergraduates that cut across the two universities using simple random and stratified sampling techniques. 200 students were selected from OOU and 350 students from TASFUED according to their population. Four instruments were used for data collection in this study and the four instruments were titled: Adaptive Learning Questionnaire (ALQ), AI-Learning Powered Tool Questionnaire (ALPTQ), AI-Chatbot Questionnaire (ACQ) and Proforma Form for Academic Performance (PFAP). These questionnaires maintained uniform demographic features and each of them had a total of 10 items. The validation was done on the questionnaires by giving them to the 3 experts at the university level to ensure content and construct validation. Also, 50 BED undergraduates from Lagos State University (LASU) were used as trial-test once and data obtained were subjected to Cronbach's Alpha formula which yielded Adaptive Learning Questionnaire (ALQ) ($r = .88$), AI-Learning Powered Tool Questionnaire (ALPTQ) ($r = .84$), AI-Chatbot Questionnaire (ACQ) ($r = .93$) and Proforma Form for Academic Performance (PFAP) ($r = .91$) as reliability coefficients values respectively. The researchers employed 3 research assistants to help in distributing the questionnaires to the respondents for three weeks. However, after the completion, out of 555 copies of the questionnaire distributed, only 499 were retrieved and the retrieval rate was reported as 89.9% and used for analyses. The null hypotheses were tested using Regression Analysis.

5. Results

$H_0$1: There is no significant influence of Adaptive learning on academic performance of BED students in financial accounting.

From Table 2, standardized coefficient Adaptive learning was reported as ($\beta = .213$, $t = .162$, $p < .05$). This implied that, null hypothesis was not true and that there was a significant positive influence of Adaptive learning on academic performance of BED students in financial accounting.

$H_0$2: There is no significant influence of AI-learning powered tool on academic performance of BED students in financial accounting.

From Table 3, standardized coefficient of AI-learning powered tool revealed ($\beta = .422$, $t = .490$, $p < .05$). This implied that, null hypothesis was not true and there was a significant positive influence of AI-learning powered tool on academic performance of BED in financial accounting.

$H_0$3: There is no significant influence of AI-Chatbot on academic performance of BED students in financial accounting.

From Table 4, standardized coefficient of AI-Chatbot ($\beta = .338$, $t = 8.007$, $p < .05$). This implied that, null hypothesis was not true, that is there was a significant positive influence of AI-Chatbot on academic performance of BED students in financial accounting.

$H_0$4: There is no significant composite contribution of AI-based learning platforms (Adaptive learning, AI-learning powered tool and AI-Chatbot) on academic performance of BED students in financial accounting.

Table 1: Population of the study

Olabisi Onabanjo University Business Education		Tai Solarin Federal University of Education Business Education	
100 level	259 undergraduates	100 level	571 undergraduates
200 level	278 undergraduates	200 level	629 undergraduates
300 level	362 undergraduates	300 level	868 undergraduates
400 level	307 undergraduates	400 level	620 undergraduates
Total	1,206 undergraduates	Total	2,688 undergraduates

Sources: Department of Business Education of each university, 2025

Table 2: Influence of Adaptive learning on academic performance of BED students in financial accounting

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	21.085	1.232		17.108	.000
	Adaptive learning	.113	.021	.213	.162	.001

a. Dependent Variable: Academic performance of BED students in financial accounting

Table 3: Influence of AI-learning powered tool on academic performance of BED students in financial accounting

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	20.819	.959		21.713	.000
	AI-learning powered tool	.326	.053	.422	.490	.002

a. Dependent Variable: Academic performance of BED students in financial accounting

Table 4: Influence of AI-Chatbot on academic performance of BED students in financial accounting

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.634	.718		21.785	.000
	AI-Chatbot	.342	.043	.338	8.007	.000

a. Dependent Variable: Academic performance of BED students in financial accounting

Table 5: Composite contribution of AI – based learning platforms (Adaptive learning, AI-learning powered tool and AI-Chatbot) on academic performance of BED students in financial accounting

R = .345
R^2 = .119
Adj R^2 = .114
Std. Error = 2.91919

ANOVA

Source of Varia	SS	Df	MS	F-ratio	P_{value}
Regression	570.911	3	190.304	22.332	.000
Residual	4226.761	496	8.522		
Total	4797.672	499			

a. Dependent Variable: Academic performance of BED students in financial accounting

From Table 5, R was reported as .119, p less than .05 and Adjusted R^2 .114, this implied null hypothesis was not valid. This suggested that there was a direct significant composite contribution of AI – based learning platforms (Adaptive learning, AI-learning powered tool and AI-Chatbot) on academic performance of BED students in financial accounting F (3, 496) = 22.332, p <.05.

6. Discussion of Findings

Hypothesis 1 showed that there was significant influence of Adaptive learning on academic performance of BED students in financial accounting. These findings were in agreement with Elujekwute et al. (2021), who agreed that through the effective usage of AI-learning platform, students learning could be more effective and robust, thereby aiding their academic performance towards the attainment of sustainable economic development. As well as Anyaeneh and Nzegwu (2017) concluded based on the

findings that the ease way for business education students' attainment of sustainable economic development could be manifested through collaborated teaching-learning using AI-teaching platforms that dictated the personalized learning.

Hypothesis 2 revealed that there was significant influence of AI-learning powered tool on academic performance of BED students in financial accounting. These findings were in tandem with Godpower et al. (2025) who found that AI-powered tools directly influence business education postgraduate students learning outcomes as well as Nwaigburu and Eneogwe (2019) found that AI-powered tools served as engine that have positive tendency towards enhancing student academic performance.

Hypothesis 3 indicated that there was a significant influence of AI-Chatbot on academic performance of BED students in financial accounting. These findings were in consonant with Nwile and Edo (2023), who realized that AI-platforms, AI-Chatbot constantly influence students' learning outcomes in tertiary institution through personalized learning experience. In the study of Aniella and Gabriel (2025), their outcomes of the study showed that AI-learning platforms influence students' performance and they realized positive influence and that the issues such as poor internet, lack of AI skills among students, poor nature of understandings of AI as associated with business education as well as lecturer lack of skills in using AI for instruction delivery were among the challenges confronting the effective usage of AI-platform for teaching.

Hypothesis 4 revealed that there is no significant composite contribution of AI – based learning platforms (Adaptive learning, AI-learning powered tool and AI-Chatbot) on academic performance of BED students in financial accounting. Furthermore, these findings were in tandem with Alonta et al. (2024) who agreed that AI-platforms for teaching-learning are good learning platforms that represented instruction methods for business education students' academic performance through utilization of adaptive learning, AI-learning powered tools, AI-Chatbot and many more. Oginni (2025) findings indicated that AI-learning powered tools directly influence students' engagement and academic performance for future sustainability. Baker (2021) found that AI-teaching-learning platforms aid personal gains and performance for sustainability as well as Hennekeuser et al. (2024) who found that AI-learning platforms such as adaptive learning, AI-learning powered tools, and AI-Chatbot are positive development that promoted students learning engagement as well as academic performance in India.

7. Conclusion

The study examined the influence of AI – based learning platforms on academic performance of business education students in financial accounting in Ogun State and the following conclusions were drawn based on the findings of the study that the academic performance of business education students in financial accounting could be improved upon and sustained if traditional methods of teaching and learning could be replace with AI – based learning platforms such as (Adaptive learning, AI-learning powered tool and AI-Chatbot).

8. Recommendations

The study recommended the following:

1. There should be an urgent review of BED curriculum in financial accounting to inculcate compulsory teaching and learning of AI skills, so that it could aid instructions through the use of AI – based learning platforms.
2. There should be government-sponsor capacity building programmes for lecturers in BED department on the best ways to improve their skills in utilising AI-based teaching and learning for instruction delivery.
3. Government through joint efforts with the stakeholders in BED should equip department laboratory with AI tools and software to aid AI-based learning platforms for instruction.

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