



DIGITAL LEARNING TOOLS AND STUDENTS' ACADEMIC ENGAGEMENT IN FINANCIAL ACCOUNTING IN PRIVATE SECONDARY SCHOOLS IN AKWA IBOM NORTH-EAST, NIGERIA

By

JOSEPH SUNDAY UDO, M. S. USSEN & IMAOBONG OBOT

Department of Business Education, University of Uyo, Uyo

ABSTRACT

The study determined the extent to which Digital Learning Tools predict students' academic engagement in Financial Accounting in Private Secondary Schools in Akwa Ibom North-East, Nigeria. To achieve the purpose of the study, three objectives and research questions were raised, and three null hypotheses were formulated. Descriptive research design was used. Population comprised 473 senior secondary school (SS1-SS3) students offering Financial Accounting in fourteen private secondary schools, in Akwa Ibom North-East. Sample size was 303 Financial Accounting Students, determined via Taro Yamane (1967) formula. "Digital Learning Tools and Students' Academic Engagement Questionnaire (DLTSAEQ)" was used for data collection, validated by three experts. Reliability coefficient of 0.83 was obtained using Cronbach Alpha statistics. R and R² values of simple linear regression were used to answer the research questions, while F-values of simple linear were used to test the hypotheses. The findings of the study revealed that, digital textbooks, learning management systems, accounting simulation software, educational mobile applications and online assessment tools significantly predict students' academic engagement in Financial Accounting in private secondary schools in Akwa Ibom North-East, Nigeria. The study concluded that digital learning tools highly predict students' academic engagement in Financial Accounting in Private Secondary Schools in Akwa Ibom North-East, Nigeria. It was recommended, among others, that regular capacity building programmes should be organised for teachers and school administrators to enhance their ICT literacy and digital teaching competence.

Introduction

Today, the world is witnessing an accelerated technological development in all sectors, including the educational sector, so technology and its tools have become very crucial in the implementation of the educational process since Students and teachers today rely on digital learning and its tools, as a result of its benefits which enrich the learner with information and data and ultimately enable them to access information with the least effort, time and cost. In the education of the digital era, it is of crucial importance to create digital-based learning environments and provide opportunities for students to meet the needs of contemporary, 21st century education. It is thus essential to shift from traditional and teacher-fronted classrooms to modern, student-centered and computerized learning environments. Teachers need to facilitate and promote digital teaching practices and, as a result, enrich students' digital learning experiences. Education in the 21st century has undergone significant transformations, driven by rapid technological advancements, globalization, and evolving pedagogical approaches. The traditional teacher-centered model has therefore shifted towards more interactive, student-centered learning that prioritizes critical thinking, problem-solving and digital literacy due to technology...

Technology plays a crucial role in this transformation, with digital learning tools such as Learning Management Systems (LMS), Educational apps, Artificial Intelligence and Virtual



Classrooms redefining how knowledge is developed and consumed. Additionally, education now emphasizes skills such as collaboration, creativity, and adaptability among others, to prepare students for a dynamic and technology-driven world. The integration of digital tools not only enhances accessibility and inclusivity but also fosters deeper engagement, personalized learning experiences, and real-world applications of knowledge. As education continues to evolve, the focus remains on equipping students with the necessary skills to thrive in an increasingly interconnected and digitalized global society. The use of digital learning tools foster students' academic engagement by promoting active participation, critical thinking, and motivation, therefore enhancing their understanding and retention of financial accounting concepts.

In recent years, the integration of digital learning tools in educational settings have gained significant momentum through digital tools, such as online simulations, interactive software, and collaborative platforms which offer promising opportunities to enhance student engagement and improve learning outcomes. The use of digital learning media is growing along with advances in Information and Communication Technology. Technology in this modern era not only influences the way we communicate and work, but also the way we learn (Putri and Jayanta, 2023) implementation for the integration of digital media in the learning process in schools, especially at the basic education level, has commenced as a strategy to improve the quality of student learning outcomes (Siregar and Sumantri, 2024).

Secondary education, which encompasses both junior and senior secondary levels for students aged 11 to 18, plays a crucial role in personal and academic development. Belle (2017) hinted the secondary education is vital for achieving the four pillars of learning: learning to know, learning to do, learning to be, and learning to live together. The primary goals of secondary education include preparing individuals for productive societal roles and further education. Bookkeeping/Financial Accounting is a key vocational subject within the Nigerian secondary school system that supports the development of practical entrepreneurship skills (Obayi, Etuk and Oriola 2021). Financial accounting, as a vocational subject, focuses on teaching accurate bookkeeping and recording of business transactions. This process is essential for identifying potential financial issues and making informed decisions. Ukoima, Akpanobong, Usip, and Uke, (2024), described financial accounting as the practice of recording, classifying, analyzing, measuring, interpreting, summarizing, and reporting financial data to aid objective assessment and decision-making. The subject is designed to prepare students with the necessary competencies to manage financial transactions effectively in any business setting (Ishola *et. al.*, 2020). Financial accounting is one of the components of business studies taught in senior secondary schools and it requires specialized teachers who are professionals in the field that can engage the students academically to achieve the objectives and aims of the subject.

Students' academic engagement is a critical factor in the learning process, influencing their motivation, participation, and overall academic success. According to Ghasemi *et al.* (2018), academic engagement refers to students' participation in or attention to their academic work. Some other terms used to describe the concept of academic engagement are student engagement, study engagement and educational engagement (Alrashidi, Phan and Ngu, 2016). Simply put, the term 'academic engagement' is the attention students pay to school work and their interaction with fellow students, teachers, school activities and school environments. Academic engagement could be in the form of behavior or cognition. Behavioral engagement involves students' participation in academic and extracurricular activities, while emotional engagement relates to their sense of



belonging and investment in learning. In support, Fredricks *et. al.*, (2021), refers to cognitive engagement as the willingness to exert effort in understanding complex ideas. Also, Bond *et. al.*, (2020), observed that students who demonstrate high academic engagement are more likely to achieve better academic outcomes, develop critical thinking skills, and persist in their educational pursuits. Therefore, students' academic engagement is significantly enhanced through digital learning tools.

Digital Learning Tools (DLTs) are technological resources designed to enhance teaching and learning by making education more interactive, accessible, and engaging. These tools include Learning Management Systems (LMS), digital textbooks, educational mobile applications, online assessment platforms, and virtual classrooms, all of which facilitate personalized learning experiences. According to Tsulaia (2023), digital learning tools include a wide variety of applications and learning platforms that facilitate teaching, learning, interaction and assessment. There are hundreds of digital learning tools that improve the academic process, grant autonomy to students, encourage collaboration, and strengthen communication between learners and teachers. Digital learning tools may be assessment tools (tools for creating quizzes, tests, etc.), tools for creating educational games, platforms that serve as communication channels, platforms that allow producing creative and interactive content, and so forth. By integrating multimedia elements such as videos, animations, and interactive exercises, digital tools cater to different learning styles, allowing students to grasp complex concepts more easily and effectively. These tools also provide real-world simulations, automated assessments, and instant feedback, which help students apply theoretical knowledge to practical scenarios. Moreover, digital learning tools promote self-paced learning, collaboration, and real-time communication between students and teachers, fostering deeper engagement and improved academic performance. Okafor and Ogbu, 2023 opined that as education continues to embrace technology, the role of digital learning tools becomes increasingly essential in preparing students for the demands of the knowledge-driven economy.

This study focused on private secondary schools which are those secondary schools that are not administered or funded by the government and other non-public sources for funding but rather relied on tuition fees and other private sources for funding and offering education at the secondary level. In private secondary schools, where there is greater flexibility in curriculum implementation and resource allocation and digital learning is expected to be more advanced compared to public schools. However, several challenges still hinder the full integration of digital tools in Financial Accounting education. Digital learning tools encompass a wide range of technological resources designed to enhance the teaching and learning process by making education more interactive, accessible and engaging. For the purpose of this study, digital textbooks, learning management systems, accounting simulation software, educational mobile applications and online assessment are the focus of this study.

Digital textbooks have emerged as a means for students to shift their focus from the monotony of reading to the excitement of discovery. Unlike static textbooks, digital versions integrate videos, hyperlinks, and interactive quizzes that cater to diverse learning styles, thereby promoting a deeper understanding of accounting concepts. Additionally, digital textbooks are more accessible, allowing students to study anytime and anywhere, which enhances their engagement with the subject matter. Salman *et. al.*, (2019) describes digital textbooks as electronic versions of traditional printed materials. In a similar view, Okafor and Ogbu, (2023), stated that students using interactive e-books demonstrate higher retention and improved comprehension in technical



subjects like accounting. Digital textbooks complement Learning Management Systems by providing interactive and accessible content that seamlessly integrates with learning management systems platforms, enabling students to engage with course materials, hence sustains student learning management system. The methods used to facilitate student learning have always been critical in shaping students' engagement and academic success. Traditional teaching methods like face-to-face interactions and printed materials have dominated educational systems for decades. However, the rapid advancement of technology has introduced innovative tools like Learning Management Systems (LMS) that have transformed the educational landscape (Bonsu *et. al.*, 2021).

Learning Management System (LMS) according to Brush (2019), is a software application or web-based technology used to plan, implement and assess a specific learning process. It is an e-learning-based platform built on two major elements - a server that performs the base functionality and a user interface that is operated by an instructor, students and administrators. The LMS, according to the author, enables an instructor to create and deliver content, monitor students' participation and assess students' performance. According to Brown (2020), the LMS provides an avenue for the delivery and tracking of e-learning initiatives in one place. LMSs are Web-based software used mainly for asynchronous interaction between instructors and students by delivering a course's information, materials, and activities (Raza *et. al.*, 2021). Learning Management Systems provides an organized digital space where educators can structure course materials, assignments, and assessments while fostering collaboration through discussion forums and messaging systems. In Financial Accounting education, Learning Management System (LMS) platforms such as Google Classroom, Moodle, and Blackboard integrate lecture notes, case studies, and practice exercises, making learning more structured and engaging. It is a platform that enables the delivery of educational content, assessment, and collaboration for students, teachers, and their stakeholders. The use of LMS enables learners to access educational materials from anywhere, anytime, creating a more flexible and efficient learning environment. With the rapid development of technology, the use of LMS has become increasingly popular in the educational system, leading to a growing interest in understanding its influence on student academic engagement.

Accounting Simulation software is a type of software that bridges the gap between theoretical knowledge and practical application by providing hands-on experience in real-world accounting scenarios. Accounting simulation software has emerged as a transformative tool in education, offering dynamic and interactive learning experiences that enhance student engagement and understanding. These programs create virtual environments where students can experiment and explore complex concepts in a controlled setting, thus facilitating experiential learning (Kaysi, 2025). These simulations allow students to practice bookkeeping, financial reporting, and auditing tasks in a controlled environment, enhancing their understanding of accounting principles. Software such as QuickBooks, Sage, and Xero enable students to apply accounting theories to real-life business transactions, thereby increasing their confidence and engagement. Eze and Nwosu (2023) stated that students who use simulation-based learning tools exhibit higher problem-solving abilities and professional preparedness compared with those who rely solely on traditional instruction. Accounting simulation software integrates seamlessly with educational mobile applications, enabling students to practice real-world accounting scenarios on mobile platforms, enhancing accessibility, flexibility, and engagement and enable proper educational mobile application to be used.



Online Assessment Tools (OATs) are digital platforms and applications used to create, deliver, and grade tests, quizzes, assignments other forms of assessments over the internet. They are used by educators, institutions, and organizations to evaluate learners' knowledge, skills, and progress remotely. Online assessment tools have become an integral part of modern education, enabling educators to evaluate students' performance, understanding, and skills in a flexible, efficient, and often more personalized manner. These tools facilitate the digital collection and evaluation of students' responses, providing insights into learning outcomes, while also offering benefits such as real-time feedback, accessibility, and the ability to manage large groups of students. According to Mahajan (2023), assessment is the most essential and strong component of an educational experience, as it provides observable evidence of learning, determines student progress, and reveals an understanding of the educational programs. Assessment in the student-centered paradigm is used to diagnose learning problems and promote further learning, in addition to evaluating learning outcomes. In the changing world of education, online learning assesses in digitalized manner. Online assessment tools provide immediate feedback, allowing students to track their progress and identify areas for improvement.

Unlike traditional paper-based assessments, digital quizzes and automated grading systems facilitate timely evaluation, which is crucial in subjects like Financial Accounting where continuous practice is necessary for mastery. According to Mahajan (2023), online assessment customized the students' learning and evaluates their performance via Google form, online quizzes, polls, among others. The words similar to online assessment are e-assessment, digital assessment, electronic assessment, and computer-based assessment. Online assessment can assist as a potential catalyst to translate conventional assessment practices in response to emerging assessment challenges such as distance learning, high student-faculty ratio, and objective and high-quality feedback. Online assessment is considered a distinctive mode of recording students' responses and proving feedback. Feedback can perform several functions depending on the purpose of the assessment. Platforms such as Kahoot, Quizizz, and Google Forms allow educators to design interactive assessments that challenge students while keeping them engaged. In a similar vein, Kuhn as cited in Usen and Umosen (2021) refers to digital learning tools as a paradigm shifts which is a cross over hit, changing in position and thinking. Today, the Information Communication Technology (ICT) is used in Private Schools from Primary to Tertiary for teaching and learning but there seem to be a lukewarm attitude on the part of government who own public schools and fail to make provision for the new technology (Etuk, Umoh and Ukpoho 2024). Government is to have a paradigm shift with regarding the use of technology in schools. In order have a turn-around if Nigerian Educational System is to be revolutionized. During the COVID-19 pandemic, many private schools operated from homes (online classes) but this was impossible for government owned institutions.

The integration of these digital learning tools in financial accounting education not only enhance cognitive engagement by promoting critical thinking and active learning but also boosts emotional and behavioral engagement by making lessons more interactive and relevant to real-world applications. As the accounting profession continues to improve with technological advancements, incorporating these tools into educational practices is essential to preparing students for the demands of the modern workplace. Therefore, understanding the impact of digital learning tools on students' engagement in financial accounting is critical for teachers seeking to predict learning outcomes and equip students with the necessary skills for professional success. In Akwa Ibom North-East Senatorial District, Nigeria, it is imperative for private secondary schools to make



use of learning management system to predict the extent to which digital learning tools encourage students' engagement in financial accounting.

Statement of the Problem

In recent years, the integration of DLTs such as digital textbooks, LMS, interactive accounting simulation software, educational mobile applications, and online assessment tools has gained global recognition for enhancing teaching and learning processes. In the field of financial accounting, these tools have the potential to improve students' academic engagement by making abstract concepts more concrete, fostering collaborative learning, and enabling self-paced study.

However, despite these perceived benefits, there are growing concerns that many students in private secondary schools in Akwa Ibom North-East, Nigeria still display low participation in classroom activities, minimal enthusiasm for learning, and poor mastery of core financial accounting concepts. Several factors could contribute to these gaps such as lack of adequate access to relevant digital tools, incomplete integration of these tools into their accounting curriculum due to limited teacher competence, inadequate training, poor institutional support or unavailability of these tools, and epileptic electricity to operate them. In some cases, even when the tools are available, there is underutilization and diminished impact on academic engagement.

In Nigeria, there are hardly studies on the extent to which DLTs predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East, Nigeria. All studies in the past investigated the relationship between DLTs and students' academic engagement, but none focused on private secondary schools. This study is, therefore, conducted to fill this gap by determining the extent to which DLTs predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East, Nigeria.

Purpose of the Study

This study investigated the extent to which digital learning tools predict students' academic engagement in Financial Accounting in Private Secondary Schools in Akwa Ibom North-East, Nigeria. Specifically, the study sought to:

Determine the extent to which digital textbook predict students' engagement in financial accounting in private secondary schools in Akwa Ibom North-East, Nigeria.

Assess the extent to which learning management systems predict students' engagement in financial accounting in private secondary schools in Akwa Ibom North-East, Nigeria.

Evaluate the extent to which accounting simulation software predict students' engagement in financial accounting in private secondary schools in Akwa Ibom North-East, Nigeria.

Research Questions

To what extent do digital textbooks predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East, Nigeria?

To what extent do learning management systems predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East, Nigeria?

To what extent do accounting simulation software predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East, Nigeria?



Research Hypotheses

Digital textbooks do not significantly predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East, Nigeria.

learning management systems do not significantly predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East, Nigeria.

Accounting simulation software do not significantly predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East, Nigeria.

Methods

The descriptive survey research design was adopted for the study. The design allowed the researcher to observe the phenomenon in its natural school setting without interference (Creswell and Creswell, 2018; Ebieme et al, 2026). The study area was Akwa Ibom North-East, Nigeria. The area was chosen because, there are many prominent private secondary schools operating there, and due to poor performance of students in both internal and external examinations such as internal mock for senior secondary two, West African Senior Secondary School Certificate Examination (WASSCE), and National Examination Council (NECO).

The population of the study comprised 473 Senior Secondary School (SS1 – SS3) students for the 2024/2025 school session offering Financial Accounting in fourteen (14) private secondary schools drawn from some Local Government Areas in Akwa Ibom North-East, Nigeria.

A total of 303 Financial Accounting students made up the sample for the study using Taro Yamane's (1967) formula for finite populations cited in Etuk, and Charles, (2022) and Ebieme and Bassey, (2026). To guarantee fair representation across schools and class levels, purposive random sampling technique was adopted.

The instrument used for data collection was a structured questionnaire 'Digital Learning Tools and Students' Academic Engagement. Questionnaire (DLTSAEQ)', validated by three experts Computer and Robotics, Business Education, and Measurement and Evaluation. Reliability was confirmed through a pilot test on 30 students outside the main study pool, yielding a Cronbach's alpha coefficient value of 0.83. This was deemed high enough for the study and was supported by Nunnally and Bernstein (1994) cited in Ebieme and Bassey (2026) and Etuk, and Charles, (2022) who asserted that a reliability coefficient of 0.70 should be accepted particularly at the early state of the research.

The researcher and trained research assistants handled the administration of the copies of the questionnaire. Simple random technique was used to administer the copies of the questionnaire during break time, having obtained permission from Principals. In the copies of questionnaire, the respondents responded by indicating their extent of agreement or disagreement to each statement by ticking along the column provided. Scoring of the instrument was on a four-point rating scale weighted as follows: Very High Extent (VHE)-4, High Extent (HE)-3, Low Extent (LE)-2, Very Low Extent (VLE)-1. 260 copies of the questionnaire out of 303 copies administered, representing 86% were returned in useable form.

Descriptive and inferential statistics were used for data analysis. Simple linear regression was used to answer research questions, and to test the null hypotheses at .05 level of significance. In order to take decision as regard research questions, any r-value that fell between 0.10-0.39 was regarded as low. 0.40-0.59 moderate, 0.60-0.79 high and 0.80-0.99 very high. In terms of the hypotheses, whenever the p- value was less than or equals .05 level of significance, the null



hypothesis was rejected and also whenever the calculated p-value was greater than the alpha value of .05 level of significance, the null hypotheses was accepted. The Statistical Package for Social Science (SPSS) was used for data analysis.

Results

Research Question 1

To what extent do digital textbooks predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East, Nigeria?

Table 1: Result of Simple Linear Regression of the Extent to which Digital Textbooks Predict Students' Academic Engagement in Financial Accounting in Private Secondary Schools in Akwa Ibom North-East, Nigeria (n=260)

Variables	R	R2	Percentage of Prediction	Decision
Digital textbooks				
	0.551	0.303	30.3	High Extent
Students' academic engagement				

The result in Table 4.1 shows a correlation coefficient (R-value) of 0.551, indicating a high positive relationship between digital textbooks and students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East Senatorial District. The coefficient of determination (R2 – value) of 0.303 also shown in Table 4.1 indicates that 30.3 percent of the variance in student academic engagement is explained or predicted by digital textbooks. This means that digital textbooks predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East Senatorial District to a high extent.

Research Question 2

To what extent do learning management systems predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East, Nigeria?

Table 2: Result of Simple Linear Regression of the extent to which Learning Management Systems Predict Students' Academic Engagement in financial Accounting in Private Secondary Schools in Akwa Ibom North-East, Nigeria (n=260)

Variables	R	R2	Percentage of Prediction	Decision
Learning Management Systems				
	0.947	0.896	89.6	Very High Extent
Students' Academic Engagement				

The result in Table 2 shows a correlation coefficient (R-value) of 0.947, indicating a very high positive relationship between learning management systems and students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East Senatorial District. The coefficient of determination (R2 – value) of 0.896 also shown in Table 2 indicates that 89.6 percent of the variance in student academic engagement is explained or predicted by learning management systems. This means that learning management systems predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East Senatorial District to a very high extent.



Research Question 3

To what extent do accounting simulation software predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East, Nigeria?

Table 3: Result of Simple Linear Regression of the Extent to which Accounting Simulation Software Predict Students' Academic Engagement in Financial Accounting in Private Secondary Schools in Akwa Ibom North-East, Nigeria (n=260)

Variables	R	R ²	Percentage of Prediction	Decision
Accounting simulation software				
	0.975	0.951	95.1	Very High Extent
Students' academic engagement				

The result in Table 3 shows a correlation coefficient (R-value) of 0.975, indicating a very high positive relationship between accounting simulation software and students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East Senatorial District. The coefficient of determination (R² – value) of 0.951 also shown in Table 3 indicates that 95.1 percent of the variance in student academic engagement is explained or predicted by accounting simulation software. This means that accounting simulation software predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East Senatorial District to a high extent.

Hypothesis 1

Digital textbooks do not significantly predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East, Nigeria.

Table 4: Simple Linear Regression Analysis of the Prediction of Students' Academic Engagement in Financial Accounting in Private Secondary Schools in Akwa Ibom North-East, Nigeria by Digital Textbooks (n=260)

Model		Sum of Squares		df	Mean Square	F	Sig.
1	Regression	323.293		1	323.293	112.214	.000b
	Residual	743.307		258	2.881		
	Total	1066.600		259			
Model		Unstandardized Coefficients			Standardized Coefficients	t	Sig.
		B			Beta		
1	(Constant)	9.840			.656	14.998	.000
	Digital_textbooks	.425			.040	10.593	.000

The result in Table 4 shows the F-ratio of 112.214 with the corresponding probability level of significance of .000 alpha at 1 and 258 degrees of freedom. This level of significance is less than .05 in which the decision is based. With this result, the null hypothesis was rejected. The result in Table 4.6 also shows an unstandardized coefficient (B) of .425 which indicates that for every one-unit increase in digital textbooks, students' academic engagement in financial accounting increases by .425. Furthermore, the t-value of 10.593 for digital textbooks, with a corresponding significance level of .000 which is also less than .05, reinforces that digital



textbooks significantly predicts students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East, Nigeria.

Hypothesis 2

Learning management systems do not significantly predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East, Nigeria.

Table 5: Simple Linear Regression Analysis of the Prediction of Students' Academic Engagement in Financial Accounting in private Secondary Schools in Akwa Ibom North-East, Nigeria by Learning Management Systems(n=260)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	956.148	1	956.148	2233.435	.000b
	Residual	110.452	258	.428		
	Total	1066.600	259			
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.941	.336		2.802	.005
	Learning management systems	.938	.020	.947	47.259	.000

The result in Table 5 shows the F-ratio of 2233.43 with the corresponding probability level of significance of .000 alpha at 1 and 258 degrees of freedom. This level of significance is less than .05 in which the decision is based. With this result, the null hypothesis was rejected. The result in Table 4.7 also shows an unstandardized coefficient (B) of 0.938 which indicates that for every one-unit increase in learning management systems, students' academic engagement in financial accounting increases by 0.938. Furthermore, the t-value of 47.26 for learning management systems, with a corresponding significance level of .000 which is also less than .05, reinforces that learning management systems significantly predicts students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East Senatorial District.

Hypothesis 3

Accounting simulation software do not significantly predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East, Nigeria.

Table 6: Simple Linear Regression Analysis of the Prediction of Students' Academic Engagement in Financial Accounting in Private Secondary Schools in Akwa Ibom North-East, Nigeria by Accounting Simulation Software (n=260)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1014.477	1	1014.477	5021.443	.000b
	Residual	52.123	258	.202		
	Total	1066.600	259			
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.288	.233		1.235	.218
	Accounting_simulation_Software	.980	.014	.975	70.862	.000

The result in Table 6 shows the F-ratio of 5021.44 with the corresponding probability level of significance of .000 alpha at 1 and 258 degrees of freedom. This level of significance is less than .05 in which the decision is based. With this result, the null hypothesis was rejected. The result in Table 4.8 also shows an unstandardized coefficient (B) of .980 which indicates that for



every one-unit increase in accounting simulation software, students' academic engagement in financial accounting increases by .980. Furthermore, the t-value of 70.86 for accounting simulation software, with a corresponding significance level of .000 which is also less than .05, reinforces that accounting simulation software significantly predicts students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East Senatorial District.

Findings

The following findings were made:

Digital textbooks significantly highly predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East Senatorial District.

Learning management systems significantly very highly predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East Senatorial District.

Accounting simulation software significantly very highly predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East Senatorial District.

Discussion of Finding

Digital Textbooks and Students' Academic Engagement

The result of the first hypothesis shown that digital textbooks significantly highly predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East Senatorial District. This is possible because digital textbooks provide interactive features that make complex accounting concepts easier to understand. Unlike traditional textbooks, digital textbooks often include multimedia elements such as videos, animations and simulations that illustrate accounting procedures clearly. These tools help students visualize processes like journal entries, ledger postings, and financial statement preparation. As a result, learners become more interested and motivated to participate actively in their studies. Digital textbooks also allow instant access to definitions, examples, and additional resources through hyperlinks. This immediate access supports deeper exploration of financial accounting topics. Furthermore, many digital textbooks include built-in quizzes and self-assessment activities that encourage continuous practice. Frequent practice helps students stay focused and reinforces their understanding of accounting principles. The portability of digital textbooks also allows students to study anytime and anywhere using phones, tablets, or laptops. This flexibility increases the time students spend engaging with financial accounting materials. The findings of the study is in agreement with the submission made by Bikowski and Casal (2018) that the use of digital textbooks enhances students engagement in learning in a study to investigate interactive digital textbooks and students engagement in learning.

Learning Management Systems and Students' Academic Engagement

The result of the second hypothesis revealed that learning management systems significantly very highly predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East Senatorial District. This is achievable as learning management systems enhanced a structured digital environment for learning activities. These systems organize course materials such as lecture notes, accounting examples and financial statement exercises in one accessible platform. Students can easily access resources related to financial accounting whenever they need them. Learning management systems also support interactive tools like



discussion forums and chat features that encourage collaboration among students. Through these platforms, learners can ask questions and receive feedback from instructors and peers quickly. The availability of online quizzes, assignments, and practice problems helps students regularly test their understanding of accounting concepts. Continuous assessment keeps students actively involved in the learning process. Additionally, learning management systems often send notifications and reminders about deadlines and course updates. These reminders help students stay organized and committed to their financial accounting tasks. The system also allows instructors to monitor student progress and provide timely guidance where necessary. The findings of the study is in line with the assertion made by Swart (2016) that the adoption of learning management system increase students engagement in learning different subjects in a study to examine the how effective the use of a learning management system promotes student engagement in different subjects to promote academic achievement.

Accounting Simulation Software and Students' Academic Engagement

The result of the third hypothesis shown that accounting simulation software significantly very highly predict students' academic engagement in financial accounting in private secondary schools in Akwa Ibom North-East Senatorial District. This is attainable because accounting simulation software boosts a practical and interactive learning environment for students. Unlike traditional teaching methods that rely mainly on theoretical explanations, simulation software allows students to practice accounting procedures in a virtual business setting. Through these simulations, learners record transactions, prepare financial statements, and analyze financial outcomes in a realistic context. This hands-on experience makes financial accounting concepts clearer and easier to understand. Studies show that simulation-based learning helps students apply accounting principles in real-world scenarios, thereby strengthening their skills and understanding. Students also receive immediate feedback from the software, which helps them identify errors and improve their performance quickly. The interactive and problem-solving nature of simulation activities encourages students to participate actively in the learning process. In addition, simulations often include game-like features that increase motivation, curiosity, and sustained attention during accounting lessons. Such features make complex accounting topics more engaging and meaningful for learners. Furthermore, simulation tools enable students to observe the consequences of their financial decisions, which strengthens critical thinking and analytical skills. The findings of the study agree with the submission made by Suryani *et. al.* (2023) that increasing learning interest in accounting students is promoted through game simulation accounting cycle.

Conclusion

Based on the findings of the study, it concludes that the adoption of digital learning technologies transforms traditional instructional practices into interactive, learner-centered experiences that stimulate students' curiosity, motivation, and participation. Through multimedia resources, collaborative platforms, real-time simulations, mobile accessibility, and continuous online assessments, students are better equipped to understand complex accounting concepts and remain actively involved in the learning process. In conclusion, the study establishes that the deliberate integration of digital textbooks, learning management systems, accounting simulation software, educational mobile applications, and online assessment tools can significantly improve students' academic engagement and learning outcomes in financial accounting.



Recommendations

Based on the findings of this study, the following recommendations are made possible;

Teachers of financial accounting should integrate digital textbooks into their teaching practices to enhance students' comprehension and participation. Digital textbooks that include interactive elements such as embedded videos, quizzes, and hyperlinks should be adopted to replace or supplement traditional printed materials.

Private secondary schools should adopt and effectively utilize learning management systems such as Google Classroom, Moodle, or Canvas to facilitate instructional delivery, assignments, and communication. Administrators should ensure that both teachers and students receive adequate training on the use of LMS platforms to promote continuous engagement, collaboration, and feedback.

Accounting teachers should incorporate simulation software such as QuickBooks, Tally, or Peachtree into the teaching of financial accounting to provide students with hands-on experiences that bridge theory and practice. Training workshops should be organized regularly to enhance teachers' proficiency in using simulation tools.

Schools should integrate online assessment tools such as Quizizz, Google Forms, and Kahoot into classroom assessment practices to promote continuous feedback and learner motivation. Teachers should use these platforms to conduct formative and summative evaluations that engage students actively and provide immediate feedback.

Regular capacity-building programmes should be organized for teachers and school administrators to enhance their ICT literacy and digital teaching competence. Such professional development should focus on instructional design, content creation, online assessment, and classroom management in digital environments.

Curriculum planners should revise the financial accounting curriculum to incorporate digital learning objectives, simulation exercises, and technology-based assignments. At the policy level, the Ministry of Education should create and enforce guidelines for the systematic integration of digital learning tools across all subjects.

Future researchers should derive further studies from this by examining the moderating effects of variables such as gender, socio-economic background, teacher competence, and school type on the relationship between digital learning tools and academic engagement.

REFERENCES

- Alrashidi, O., Phan, H. P., and Ngu, B. H. (2016). Academic engagement: an overview of its definitions, dimensions, and major conceptualisations. *International Education Studies*, 9 (1): 41 – 52.
- Bassey, A. S., and Ebieme, E. E. (2026). Integration of artificial intelligence into the Business Education programmes: A panacea for building a technological driven workforce. *Studies in Education*, 24(10): 95-102.
- Belle, L. J. (2017). Factors that influence student behaviour in secondary schools. *European Journal of Educational and Development Psychology*, 5 (5): 27 – 36.
- Bikowski, D., and Casal, J. E. (2018). Interactive digital textbooks and engagement: A learning strategies framework. *Language Learning and Technology*, 22 (1): 119 – 136.



Bond, M., Buntins, K., Bedenlier, S., Zawacki-Richter, O., and Kerres, M. (2020). Mapping research in student engagement and educational technology in higher education: A systematic evidence map. *International Journal of Educational Technology in Higher Education*, 17 (1): 2 - 14.

Bonsu, E. K., Boateng, F. O., and Mensah, A. (2021). Exploring the potential of LMS in Ghanaian tertiary institutions. *Educational Technology Research*, 18 (1), 123-145.

Brown, D. (2020). *The 13 must-have features of a learning management system*. <https://www.peoplefleuent.com/blog/learning/13-must-havefeatures-of-alearningmanagement-system> (Retrieved July 20, 2026).

Brush, K. (2019). *Learning Management System (LMS)*. Retrieved from <https://searchcio.techtarget.com/definition/learning-management> (Retrieved August 3, 2026).

Creswell, J. W., and Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage publications.

Etuk, O. U. and Charles, C. I. (2022). Material management practices and effective operations of

table productions companies in Akwa Ibom State. *Journal of sustainable education*. Vol. 11(1): 120-131

Charles, C. I and Etuk, O. U (2022). Entrepreneurship Education: A panacee for reducing Insecurity

and Youth Unemployment for Nigerians national development. *Journal of education* Vol 13(1): 189-198.

Etuk, O. U., Umoh, C.R. and Ukpoho, O. J. (2024). Integration of ICT skilss in Business Education for Sustainable National Development. *International journal of vocational Education , library and information Science*. Vol.2 (1): 53-61.

Eze, P. and Nwosu, A. (2023). Simulation-based learning and its impact on student comprehension in financial accounting. *African Journal of Business Education*, 15 (3), 120 – 135.

Fredricks, J. A., Filsecker, M. and Lawson, M. A. (2021). Student engagement, context, and adjustment: Addressing definitional, measurement, and methodological issues. *Learning and Instruction*, 43, 1 – 4.

Ishola, N. A., Alao, O. E., and Ukpogon, M. J. (2020). Teachers' instructional quality and students' difficulty level in financial accounting at senior secondary schools in Lagos State, Nigeria. *Multidisciplinary Journal of Language and Social Sciences Education*, 3 (3): 51 – 72.

Ghasemi, M. R., Moonaghi, H. K., and Heydari, A. (2018). Student-related factors affecting academic engagement: A qualitative study exploring the experiences of Iranian undergraduate nursing students. *Electronic Physician*, 10 (7): 7078 – 7085.

Kaysi, F. (2025). Investigating the impact of simulation software on students' learning processes. *International Journal of Technology in Education and Science (IJTES)*, 9 (1), 35 – 53.

Mahajan, S. (2023). Online assessment and evaluation. *International Journal for Multidisciplinary Research (IJFMR)*, 5 (5): 1 – 8.

Obayi, A. U., Etuk, O. U. and Oriola, D. A. (2021). Repositioning technical vocational Education



and training (TVET): A Panacea for Achieving industrial development. *Journal of Association of*

Vocational and Technical Education in Nigeria Vol. 7(2): 94-100

Okafor, C., and Ogbu, E. (2023). The impact of digital textbooks on learning outcomes in financial education.

West African Journal of Educational Technology, 7 (1): 102 – 118.

Putri, N. L. P. S. U., and Jayanta, I. N. L. (2023). Digital practicum module in integrated science for elementary school subjects. *Journal of Education Technology*, 7 (2): 343–350.

Raza, S. A., Qazi, W., Khan, K. A., and Salam, J. (2021). Social isolation and acceptance of the learning management system (LMS) in the time of COVID-19 pandemic: An expansion of the UTAUT model. *Journal of Educational Computing Research*, 59(2), 183–208.

Salman, E., Sharif-Rasslan, A., Fattum, A., and Awad, N. (2019). Digital textbooks in the classroom challenges and opportunities. Retrieved 25th November, 2023 from: .

Siregar, M., and Sumantri, A. (2024). Challenges and opportunities of digital media in elementary education in Indonesia. *Journal of Educational Technology and Pedagogy*, 11 (1): 11 – 22.

Suryani, P., Daurrohmah, W., and Tantri, S. N. (2023). Increasing learning interest in accounting students through the game simulation accounting cycle. *Enrichment: Journal of Management*, 13 (5): 3497 – 3502.

Swart, A. J. (2016). The effective use of a learning management system still promotes student engagement! Global Engineering Education Conference (EDUCON), 10 (13): 40 – 44.

Tsulaia, N. (2023). Digital learning tools to create new learning environments. *Reviews of Modern Science*. Proceedings of the 3rd International Scientific Conference, held in Zurich Switzerland on July 6 – 7, 2023.

Ukoima, E. F., Akpanobong, U. E., Usip, M. E., and Uke, A. F. (2024). *Introduction to Financial Accounting: Chamber for Business Educators*. Calabar: Academic Publishing Centre, South-South, University. 317p.

Usen, S. A., and Umosen, A. O. (2021). *Revolutionary Pedagogy: A Paradigm Shift for Nigerian Educational System*. Uyo: Benchmark Educational Services.