



Integration of Mobile Learning on Academic Achievement among University Undergraduate Students in South-South Geographical Zone of Nigeria

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Abstract

The study investigated Integration of Mobile Learning on Academic achievement among university first year undergraduate students in SouthSouth Geographical Zone of Nigeria. The study adopted a descriptive survey design using questionnaire for data collection. The population of the study consists of 156 first year students in the university libraries under study which were randomly picked. A total of the 156 questionnaires were distributed, only 132 were retrieved, which represent 84.6% return rate. Data collected were analyzed using descriptive statistics mean and percentage mean score of 2.5 and above and percentage score of 50% were considered. The study revealed the benefits of mobile learning on academic achievement of first year students in government owned university in South South, Nigeria as flexibility and accessibility, increased engagement, personalized learning, continuous learning and real-world application. The study also shows the challenges affecting mobile learning of first year students in government owned university in South South, Nigeria as technical issues like poor internet connectivity, device limitations, privacy concerns, digital literacy gaps, and software and hardware heterogeneity. The study recommends that digital literacy training should be crucial for both students and educators as well as improving the infrastructure and access to mobile learning devices are essential.

Keywords: Mobile Learning, academic achievement, first year undergraduates, university

Introduction

Undergraduates in their first year of college are referred to as first-year students, or freshmen. This year is frequently marked by a big change and the need for new abilities. They will need to embrace mobile learning in order to succeed academically. According to Alrasheedi et al. (2015), mobile learning is the use of portable technologies for education, such as smartphones and tablets that enable flexible learning at any time and from any location. In contrast to traditional e-learning, it offers access to learning resources via apps, social media, and online hubs. It is frequently distinguished by interactive, bite-sized information made for mobile devices and tiny displays. Mobile learning is the use of one's own mobile device to access educational resources and communicate with others in various settings (Zhang & He, 2022). This offers an alternative to location-based learning and enables students to access material wherever they are. For example, mobile learning platforms promote interactive and collaborative learning environments where students can interact with peers and teachers in real time, creating deeper learning connections, in addition to facilitating the distribution of educational content (Kumar et al., 2022). Extensive research examining the relationship between mobile learning and academic achievement has yielded valuable insights, though findings are not universally consistent. An extensive meta-analysis conducted by Zhang & He, (2022) concluded that mobile learning positively impacts academic achievement. Academic achievement is the extent to which a student, teacher, or institution meets its educational goals, and is often measured by things like grades, test scores, and degrees. It includes a student's performance and the knowledge they pick up in a certain amount of time, which may be impacted by things like teaching strategies, emotions, and self-management abilities. Concurrently, research by Kumar et al. (2022) indicates that although mobile learning can result in gains in some topics, the effectiveness of these devices largely depends on the pedagogical strategies employed. Academic performance results have been found to be influenced by a number of factors, including the degree of student involvement, the quality of learning resources, and the degree of teacher assistance. For example, a comparative research found that students' academic achievement improved more significantly when they were assisted by teachers who had received training in



Integration of Mobile Learning on Academic Achievement among ... Eruvwe, U. & Unwana, I. (2026)

mobile learning approaches (Wang et al., 2022). The usage of digital mobile devices, including smartphones, PDAs, and cell phones, for educational purposes is growing (Pimmer et al., 2016). But despite these developments, there are still a lot of challenges. Many students still encounter significant obstacles to mobile learning, such as poor internet access, expensive data prices, and a digital literacy gap, as noted by Sachs (2009). Furthermore, the scalability of mobile learning initiatives in Sub-Saharan Africa is continuously hampered by worries about the dependability of mobile technology in areas that routinely experience power outages or infrastructure issues (Crowe, 2007). In order to maximize the impact of mobile learning throughout the area, it is still crucial to solve these structural concerns. It is in light of the above that prompted the researcher to embark on the title Integration of mobile learning on academic achievement among University First year Undergraduate students in South South Geographical Zone of Nigeria.

Statement of the problem

Nigeria is not an exception to the global trend of mobile learning (m-learning) adoption in several educational areas. First-year undergraduates' students may benefit from every learning opportunity because to mobile technology's enormous ability to assist learning at any time and from any location. The improved access to educational resources that mobile learning offers is one of its main benefits. First-year undergraduates' students have access to a vast array of educational resources via mobile devices, such as research papers, e-books, instructional videos, and interactive content. With this access, first-year undergraduates' students may interact with a variety of educational materials and augment their classroom learning to improve their academic performance. Numerous research demonstrate how mobile learning improves students' academic achievement, but no study has been done on the integration of mobile learning on academic achievement among University First year Undergraduate students in South South Geographical Zone of Nigeria hence the need for the study.

Objectives of the study

The following objectives guided the study

1. To find out the integration of mobile learning on academic achievement among university first year undergraduate students in South South geographical zone of Nigeria
2. To find out the challenges affecting the integration of mobile learning on academic achievement among university first year undergraduate students in South South geographical zone of Nigeria

Research questions

The following research question were formulated to guide the study

1. What are the benefits of integration of mobile learning on academic achievement among university first year undergraduate students in South South geographical zone of Nigeria?
2. What are the challenges affecting the integration of mobile learning on academic achievement among university first year undergraduate students in South South geographical zone of Nigeria?

Literature review

According to research by Mohammadi et al. (2020), students who utilized mobile devices for studying did better on assignments and tests because they could access and use these extra resources. Academic attainment has been demonstrated to be positively impacted by the greater availability of learning tools outside of the typical classroom setting. Additionally, it has been discovered that mobile learning greatly increases student enthusiasm and engagement, both of which are critical components of academic achievement. Mobile platforms' interactive elements, such forums, quizzes, and multimedia resources, encourage more engagement and participation in the educational process. Students who used mobile learning platforms were more involved in their studies, exhibiting better levels of desire and academic dedication, according to Iqbal & Qureshi (2012). Higher academic achievement and better information retention were the results of this involvement. Academic achievement is also significantly influenced by the caliber and applicability of the learning materials offered by mobile learning platforms. Software programs created for mobile devices like smartphones and tablets that support learning and educational activities are known as mobile learning applications, or m-learning apps. They make learning easier and more accessible by giving users the freedom to access educational materials and information at any time and from any location. According to McQuiggan, McQuiggan, Sabourin, and Kosturko (2015), mobile learning is instantaneous, optionally available, anywhere, and anytime learning that enables us to expand our knowledge, satiate our curiosity, work with others, and enhance our experiences. Al-Tarawneh (2014) discovered that students utilize internet search engines and electronic information technologies to find general information about the subject of their interest. Students from many



Integration of Mobile Learning on Academic Achievement among ... Eruvwe, U. & Unwana, I. (2026)

academic disciplines utilize smartphones in diverse ways. According to research by Abdelraheem and Ahmed (2018), students' brain function is negatively impacted by excessive mobile phone use. This is because our brains are not capable of effectively processing numerous incoming information sources at once, making multitasking impossible. Baiden (2020) highlighted how students utilize portable devices for work-related, social, educational, and recreational objectives. The survey's main conclusions highlighted the benefits of students using mobile devices for informal learning, producing and recording, exploring and accessing information, and documenting ideas and experiences. Additionally, various drawbacks of mobile device use were emphasized, such as being invasive, distracting, growing reliant on the gadget, and losing the sense of "physical togetherness." In a study conducted in Pakistan, Iqbal and Bhatti (2020) found that over half of university students believed Facebook had a negative impact on their academic performance. According to Masiu and Chukwuere's (2018) study, South African university students use their phones for socializing, security, and privacy, respectively. College students utilize their cell phones to text during class, according to Ifeanyi and Chukwuere (2018). In addition to having a detrimental effect on their ability to study in class, their covert multitasking during lectures distracted both them and the people seated next to them. Higher completion rates and other measures of academic success are also associated with the frequency of use of mobile learning apps. Students who regularly utilize programs like Google Classroom and Khan Academy for daily or weekly learning tasks typically exhibit higher levels of study interest and perseverance. Continuous learning and instant feedback are made possible by this consistent use, both of which are essential for academic achievement. Additionally, these applications' tailored learning experiences assist meet each student's unique needs, improving academic results (Smith, 2018). For instance, it has been demonstrated that Duolingo's adaptive language learning activities enhance language proficiency, which is associated with better language course grades (Anderson, 2021). Smith (2018) evaluated how Quizlet affected college students' study habits and academic achievement. A sample of 200 students who often utilized Quizlet for their studies participated in the study. Data on students' study habits, app usage frequency, and reported advantages were gathered through surveys. Additionally, students' grades before and after using the app were used to gauge their academic success. According to the results, students who used Quizlet regularly showed improved knowledge retention and received higher marks, with an average GPA improvement of 0.5 points. Additionally, the study discovered that Quizlet's features—such as games, quizzes, and flashcards—helped students improve their test preparation and reinforce their information. Numerous students stated that the app enhanced motivation and engagement by making learning less boring and more interesting. Smith suggested using Quizlet as a useful study aid, especially for topics that need for memory and repeated repetition. In order to improve academic results, the research also recommended that teachers encourage students to integrate digital study tools into their daily routines. This study highlights how mobile learning apps may boost academic achievement and change study habits. It also emphasizes how crucial interactive and captivating teaching resources are to sustaining students' enthusiasm. The study offers insightful information about the real-world uses of mobile learning tools in higher education. For educators and organizations wishing to incorporate digital technologies into their pedagogical approaches, Smith's conclusions are especially pertinent.

Brown (2019) assessed how Google Classroom may improve academic performance and student engagement in a high school context. Three hundred students participated in the study; one group used Google Classroom, while the other group used conventional classroom techniques. Numerous variables, including participation, attendance, and grades, were monitored throughout the course of a semester. The results demonstrated that students who used Google Classroom had better grades, with an average improvement in their total academic performance of 15%. Additionally, the study found that Google Classroom users were more engaged in class activities and had better attendance. Students found the site useful for organizing their work and getting prompt feedback from professors, according to surveys done as part of the study. Additionally, instructors claimed that Google Classroom improved student collaboration and communication. Brown suggested that Google Classroom be widely used in online learning to improve student engagement and academic achievement. The study underlined how crucial it is to teach educators how to use digital technologies efficiently and incorporate them into their lesson plans. The advantages of employing complete digital platforms in teaching are amply demonstrated by this study. It also emphasizes how technology may be used to make learning settings more dynamic and captivating. For educators and legislators hoping to enhance educational results through technological integration, Brown's findings are important. The impact of mobile learning apps on STEM education among middle school students was examined by Santos (2019), who tracked 400 students over the course of two academic years, focusing on their use of apps



Integration of Mobile Learning on Academic Achievement among ... Eruvwe, U. & Unwana, I. (2026)

like Khan Academy and GeoGebra. Test scores, student surveys, and teacher interviews were used to gather data. The study found that students who regularly used these apps had higher engagement levels and improved performance in STEM subjects, with an average test score increase of 18%. Additionally, the interactive and visual nature of the apps helped students better comprehend their classroom instruction. The study also emphasized how crucial it is for educators to pursue ongoing professional development in order to successfully integrate these resources into their instruction. The use of digital technologies to enhance academic achievement in STEM topics is further supported by this study. It emphasizes how mobile learning applications may interest students and improve their comprehension of difficult material. For educators, developers, and legislators who want to use technology to enhance STEM education, Santos' conclusions are pertinent. Lee (2020) looked into how mobile learning apps are used in higher education, with an emphasis on how they affect academic achievement and student happiness. Over the course of an academic year, 150 undergraduate students who utilized a variety of mobile learning apps, such as Coursera and Edmodo, participated in the study. Academic performance records, interviews, and questionnaires were used to gather data. The results showed that academic performance and student happiness had significantly improved, with an average GPA gain of 0.4 points. According to students, the applications offered flexible learning options that let them study whenever and wherever it was most convenient for them. Additionally, the study discovered that mobile learning applications improved communication between students and teachers and made information easier to obtain. In order to enhance student learning and boost academic results, Lee suggested incorporating mobile learning applications into higher education courses. In order to leverage the advantages of these technologies, the study highlighted the necessity for institutions to offer sufficient assistance and training for both staff and students. This study demonstrates how mobile learning apps may revolutionize higher education by increasing accessibility and personalization. Universities hoping to use technology to improve academic achievement and student engagement will find Lee's results very pertinent. White (2021) evaluated high school students' use of mobile applications in blended learning settings. 500 students participated in the study, and they were divided into two groups at random: a traditional learning group and a blended learning group that used mobile apps like Moodle and Schoology. Test results were used to gauge academic success, while attendance and participation logs were used to monitor involvement. The blended learning group's test scores were much higher, with an average improvement of 12%, according to the results. Additionally, the study discovered that these kids had higher levels of participation and engagement. According to surveys, students valued the mobile apps' accessibility and flexibility, which enabled them evaluate content and do tasks at their own speed. Instructors stated that the applications made courses more dynamic and interesting. In order to improve academic performance, White suggested that policies promote the use of mobile learning apps in educational institutions. In order for instructors to use these tools successfully, the research also recommended continual professional development. This study offers solid proof of the advantages of mobile learning apps in blended learning settings, emphasizing their capacity to enhance academic results. For educators and legislators looking to successfully incorporate technology into the classroom, White's conclusions are crucial.

Methodology

The study used a questionnaire to collect data using a descriptive survey approach. 156 first-year students who were chosen at random from the university libraries under investigation make up the study's population. Only 132 of the 156 questionnaires that were issued were recovered, yielding an 84.6% return rate. Descriptive statistics were used to evaluate the data. A mean score of 2.5 or higher and a percentage score of 50% were taken into consideration.

Table 1

Population of the study

S/N	Institutions	Population of first year students
1	Delta State University Abraka	56
2	University of Lagos	61
3	University of Nigeria Nsukka	39
	Total	156

The Table I shows the population of the study. Delta State University Abraka has 56 first year students to represent, University of Lagos has 61 first year students' representatives, while University of Nigeria Nsukka has 39 students respectively.



Integration of Mobile Learning on Academic Achievement among ... Eruvwe, U. & Unwana, I. (2026)

Table 2

Presentation of Results

Research Question One

What are the benefits of integration of mobile learning on academic achievement among university first year undergraduate students in South South geographical zone of Nigeria?

The benefits of mobile learning on academic achievement of first year students in government owned university in South South, Nigeria

S/N	Items Statement	A	SA	D	SD	X
1	Flexibility and accessibility	34	52	23	23	2.7
2	Increased engagement	65	41	21	5	3.2
3	Personalized learning	23	44	45	20	2.5
4	Continuous learning	49	42	19	22	2.8
5	Real-world application	21	23	43	45	2.1

From Table 2 above, it shows the benefits of mobile learning on academic achievement of first year students in government owned university in South South, Nigeria as flexibility and accessibility (2.7), increased engagement (3.2), personalized learning (2.5), continuous learning (2.8), and real-world application (2.1) respectively.

Research Question two

What are the challenges affecting the integration of mobile learning on academic achievement among university first year undergraduate students in South South geographical zone of Nigeria?

Table 3

The challenges affecting mobile learning of first year students in government owned university in South South, Nigeria

S/N	Items Statement	A	SA	D	SD	X
1	Technical Issues Like Poor Internet Connectivity	56	45	23	8	3.1
2	Device Limitations	66	43	19	4	3.2
3	Privacy Concerns	58	56	16	2	3.2
4	Digital Literacy Gaps	54	53	21	4	3.1
5	Software And Hardware Heterogeneity	61	54	10	7	3.2

Table 3, The challenges affecting mobile learning of first year students in government owned university in South South, Nigeria are technical issues like poor internet connectivity (3.1), device limitations (3.2) privacy concerns (3.2), digital literacy gaps (3.1), and software and hardware heterogeneity (3.2) respectively.

Discussion of results

The study is on mobile learning and academic achievement of first year students in government owned university in South South, Nigeria. Two research questions were formulated to guide the study. The study revealed the benefits of mobile learning on academic achievement of first year students in government owned university in South South, Nigeria as flexibility and accessibility, increased engagement, personalized learning, continuous learning, and real-world application. The further affirmed the challenges affecting mobile learning of first year students in government owned university in South South, Nigeria are technical issues like poor internet connectivity, device limitations, privacy concerns, digital literacy gaps, and software and hardware heterogeneity respectively.

Recommendations

1. Digital literacy training should be crucial for both students and educators.
2. Improving the infrastructure and access to mobile learning devices are essential.

Conclusion

Mobile learning which has been demonstrated to improve students' comprehension and academic achievement is made easier by mobile learning. Platforms that let first year students communicate with their classmates outside of the classroom promote teamwork, dialogue, and idea exchange. First-year students demonstrated improved problem-solving abilities and a better comprehension of the course material when they utilized mobile devices for group activities and discussions.



Integration of Mobile Learning on Academic Achievement among ... Eruvwe, U. & Unwana, I. (2026)

Students can benefit from peer-to-peer interactions and develop critical thinking skills through collaborative learning, both of which improve academic success. In addition to these benefits, mobile learning systems offer exams and real-time feedback, which are essential for helping students identify their areas of strength and growth. Students were able to concentrate on their areas of difficulty and enhance their overall academic performance thanks to this prompt feedback loop. Nevertheless, despite the many advantages of mobile learning, a number of studies point out issues that may restrict its ability to raise students' academic achievement.

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