



# Effects of Educational Applications on Students' Academic Performance in Nigerian Higher Institutions.

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**Abstract:** This study aims to investigate the effectiveness of educational applications on students' academic performance. Today, the number of mobile applications has increased greatly in the society, and the same thing also goes with educational applications that are being used in the higher institutions. The purpose of the study is to examine the availability of educational applications in higher institutions, how well they are being used during teaching and how they can affect students' academic performance in higher institutions. The study adopted descriptive research design of the survey type. Simple random sampling techniques were used to select 50 undergraduate students from higher institutions in the South-West geo-political zone of Nigeria. A self-constructed questionnaire titled "Effects of Educational Application on Students' Academic Performance" was used to seek relevant information from respondents. The results from the findings showed that educational applications help in time management in higher institutions and also help make abstract topics real to the students. It was recommended that Educational Applications should be used by students during and after lectures, which will help to improve the academic performance of students in higher institutions and also help in developing their cognitive abilities.

**Keywords:** Educational application; Academic performance; Higher institutions; Blended Learning.

## I. INTRODUCTION

### INTRODUCTION

Technology is a major aspect of the world, and people's lives have been shaped and sharpened by this technology (Ababa et al., 2021). Technology has restructured every aspect of man's life, not just in the educational sector. Equally, technology has opened new ways to new inventions in the educational world, one of which is the educational application (Hanimoğlu, 2018). Educational applications can be used to teach different courses in the Tertiary Institution, some of which are Duolingo, U-lesson, Microsoft word, Coursera, Udemy, Google meet, Zoom etc. Misty & Elena (2019) stated that educational applications are currently causing transformation and drastic evolution in the educational sector, not only in Nigeria or Africa but the World at large. Therefore, educational applications are programmed in such a way that teaching and learning can be carried out anywhere and at any time at one's convenience. Hence, educational applications make use of mobile devices such as smartphones and tablet computers with the major aim of innovatively changing the teaching and learning process (Güntüç & Kuzu, 2014; Bağcı & Pekşen, 2018). According to Kant et al., (2021) an educational application platform is the integration of learning management systems and technologies to provide a customized end-to-end solution battling with teaching and learning. This application can also be used in both formal and informal learning environments, which is mostly designed to cover a wide range of subjects and age groups (Xie et al., 2019). It has been discovered that most higher institution students are not exposed to educational applications in their various higher institutions, thereby making them ignorant of the advantage and benefit that comes with using these applications for learning. Therefore, most higher institutions teachers are also ignorant of these educational applications and how best to utilize them in the teaching and learning process. Thus, teachers shy away from the usage of these apps because they don't know how they operate and most of these teachers are technologically illiterate. Moreover, these educational applications can be used to teach various subjects and skills, including language, math, and science subjects both in Primary, Secondary and Tertiary Institution of learning. In this way, educational applications make learning more interactive and they provide a variety of learning opportunities using applications such as games, quizzes, simulations, and videos. Whereas, Menon, (2022) opined that Educational Apps as a mobile learning device enables instant accessible anywhere and anytime, thereby making learning environment worth cooperating to acquire knowledge, satisfy one's curiosity, collaborate with others to share ideas and opinions.

According to Noum et al., (2019) mobile learning is the use of portable devices such as smartphones, iPads, and tablets to provide anywhere, anytime learning experience. Therefore, it can be said that mobile learning can be used with educational applications to enhance the performance of students in the learning environment to yield a positive outcome. Academic performance of a student

is an indicator of the achievement of the student in a number of academic subjects (Ababa et al., 2021) whereas educators and school administrators usually assess success by academic achievements, general grade average, test scores and the outcomes of examinations. Likewise, distance is a major barrier to the process of teaching and learning likewise time management of which affect greatly the academic performance of students in higher institutions. Hence, this study is carried out in order to understand the possible ways of introducing the teachers to the advantages that comes along with usage of these educational apps while teaching. The main goal of this study is to determine the impact of educational application in teaching and learning science subjects in secondary schools and how best to make use of these applications.

The aim of this study is to examine the effects of educational applications on students' academic performance in Nigerian higher institutions.

### Literature Review

The modern technologies tools have given room for enhancement through the method of teaching in the learning environment which instructors stimulate different perceptions of teaching in the academic's field (Olufunke, 2020) and since we keep having new trends and innovations in the education sectors, it is of great necessity to evaluate literature that talks about the effect and impact of educational applications on students in higher institutions.



**Figure 1.** Modern technologies tools for teaching students in the learning environment

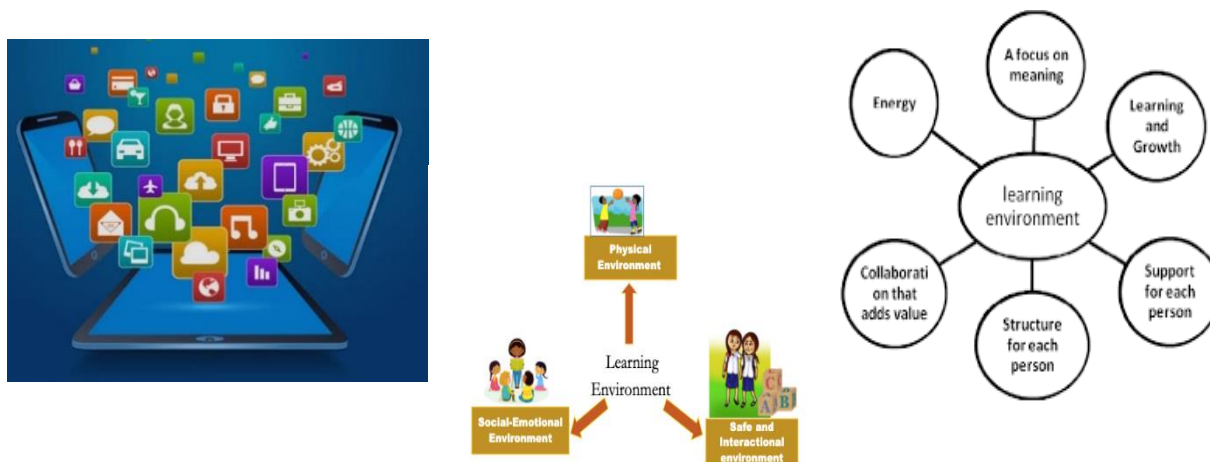
Therefore, a higher institution is said to be a formal school setting where an individual acquires skills and knowledge necessary for the achievement of goals and value. The higher institutions majorly contain high percentage of undergraduate student (Henriksen et al., 2016) who refers to someone who is into the university for his/her first degree known as "Bachelor's".

According to Akinrefon & Adejumo (2012) undergraduates' class in higher institutions are most time larger with many populations and less individualized in such a way that most students are left to their own development due to the indagate time to teach a course and also the large populations of the students. It is believed that this most time leads to poor academic performance by the students and time wastage by the lecturers while passing out the study. The connection between undergraduate students being taught using blended learning is so explicit with the focus on their academic performance to achieve better results (Greenhow & Galvin, 2020) and becomes active, students could also be asked to complete a planning document where groups brainstorm and note down what activities they plan to do as part of their collaboration in the learning environment. Nevertheless, in a university situation, the implementation of blended instructional approach has aids to improve students' academic performance. Whereas, blended learning is an approach that syndicates face to face teaching with other technology enhanced facilities (Dooga, 2007) of instructional package (mobile or immobile) together with the traditional approach of teaching (Yeonjeong, 2011).

However, blended learning approach enables teachers to pass instructions with ease to students while teachings and also helps students to learn without stress (Cross et al., 2019) which contribute to the academic enhancement of students in the higher institutions. In a review of the research, Goundar & Kumar, (2022) acknowledged blended learning as an academic approach that gives room for face-to-face teaching with diverse technology enhanced facilities and platforms that could be in form of instructional package combination in a mobile structure (Educational application/Mobile learning) or immobile form. Nevertheless, the academic performance of students in higher institutions is a major factor that most determines how effective and efficient teaching method can be well achieved in the learning environment with the use of technological facilities. As previously identified, the outcome of student's academic performance as a yardstick for determining student's performance can be affirmed to how effective and efficient a teaching method has been instigated in the lecture room. Bawa & Bagudo (2020) confirmed that teaching and learning nowadays are no more limited to the four walls of the classroom settings. Thus, this implies that students can learn with the help of educational application at their own pace irrespective of the populations in the lecture room. Moreover, educational applications have translated a lot of topics within limited time among higher institutions students in order to save time to be wasted on unnecessary topics by the instructors.

Educational applications according to (Francisco et al., 2021) assist instructors to encourage the participation of students to classroom activities so as improve their motivational interest to learning for better academic performance. In view of this, educational application aids to reduce the time use by teachers in higher institution motivating the students to achieve their goals.

Thus, when instructors use more strength and time in motivating students without the use of educational application, they get easily tired and the learning might be so bored.



**Figure 2.** Learning environment in connection to educational applications.

In spite of this, Murtagh et al., (2018) found out that educational application helps to motivate students’ academic performance as stated by Abraham Maslow that motivation is also a key factor in deriving the best from students. The literature agrees that students also learn and be motivated mostly from mobile games which can also be considered as educational applications. In addition, social Media platforms can become an educational application in as much as it is used for students-teacher communication (Sivakumar, 2020). In order to carry out a realistic teaching method in the learning environment, any applications that can support an individual to learn academically or independently are cogitated majorly as educational application.

**RESEARCH METHODOLOGY**

The research was conducted in a large higher education institution in South-West geo-political Zone of Nigeria. The institution was selected for the study because of its strong motivation on, and the use of technology to facilitate students learning. Descriptive survey design was used to gather data for this study. The study measured the effect of educational applications on students’ academic performance in Nigerian higher institutions. The sample for the study consisted of Fifty (50) undergraduate students which was randomly selected from higher institutions in South-West geo-political Zone of Nigeria. The instrument used in this study was a self-constructed questionnaire tagged “Effects of Educational Application on Students Academic Performance” and was used to seek relevant information from respondents.

**IV. RESULTS AND DISCUSSION**

Based on the results of the data analysis, it was found that the level of availability of educational application in Nigerian higher institutions while collaborating with class task was in agreement to the responses of the students from the self-structured developed Questionnaire with the high percent of 75% agreement while 25% students disagreed on the responses, this is shown in Table 1. It was also found from the results, that educational application in Nigerian higher institutions is well utilized while lecturing and learning in the educational environment with high responses from the students that responded to the filling of the questionnaire, this is indicated in Table 2. The study furtherly found that educational application affects students’ academic performance in Nigerian higher institution to improve their interest in learning for better achievement, this is denoted in Table 3.

**Table 1:** Availability of Educational applications in Nigerian higher Institutions

Items	Frequency		Percentage	
	Agree	Disagree	Agree	Disagree
Higher Institutions makes use of educational application while collaborating with class task.	75	25	75.0%	25.0%

Table 1 indicates that 75% of the respondents agrees that higher institutions make use of educational application while collaborating with class task, and 26% of the respondents disagrees that the higher institution does not make use of educational application during class activities. This implies that using educational application to learn and collaborate with others work create a learning fun environment for the students desire to learn better.

**Table 2:** The use of Educational Application during Teaching and Learning

Items	Frequency		Percentage	
	Agree	Disagree	Agree	Disagree
Higher institution makes use of educational application while lecturing.	75	25	75.0%	25.0%
Instructors makes use of educational application to explain abstracts topics.	67	33	67.0%	33%

Table 2 shows that 75% of the respondents agrees that higher institutions make use of educational application while lecturing, and 25% of the respondents disagrees. It also illustrates that 67% agrees that Instructors makes use of educational application to explain abstracts topics in the higher institution while 33% disagrees. This signifies that higher institution of learning allow educational application in order to assist the instructors for explaining abstract topics to the students while teaching.

**Table 3:** How Educational Application affects Students academic performance

Items	Frequency		Percentage	
	Agree	Disagree	Agree	Disagree
Educational Application helps in time management while learning.	84	16	84.0%	16.0%
Using Educational applications to learn improve my interest in learning.	82	18	82.0%	18%
Using Educational applications to solve my course assignment makes it easier	98	2	98.0%	2.0%

Table 3 indicates that 84% of the respondents agrees that educational application helps in time management while 16% of the respondents disagrees that educational application does not help with time management. It also shows that 82% agrees that using educational application to learn, improve their interest in learning while 18% disagrees. Table 3 indicates also, that 98% agrees that using educational application to solve their course assignment makes it easier while doing it while 2% disagrees with this. This implies therefore, that educational application does not just help in time management of the student while being use but it also enables students in the higher institutions to understand their courses better and assimilate what has been taught by their instructors.

### Discussions

Based on the results of the questionnaire data analysis in table 1 showed the usefulness of educational application on the student academic performance and the usage by the instructors in the higher institutions. This is because it supports the enhancement and improvement of students' academic performance and also to interact with other colleagues in the learning environment. This corroborates the findings by Suhair & Aseel, (2021) stated that educational applications improve students' complexity and cognitive reasoning to perform well in their academics. In connection with the use of educational application while lecturing and the way students learn with the application in table 2 and table 3, it is evident that there is a significant increase in the student disposition to learning when educational application is being used which stimulates the students desire to learn more and also participate actively while learning which ascertains the findings of Ababa et al., (2021) that educational applications has positively increase the students effectiveness and productivity while performing the class tasks given to them. This discussion has looked at the results of educational application on students' academic performance in various areas where the students can be motivated during their learning task in the learning environment, therefore, this suggestion supports the findings of Nicholas et al., (2012) who stated that educational application opens the path for mobile learning, which provides the learner with resources to be used anytime, encouraging students to develop self-learning.

### Conclusion

Based on the results of the analysis and discussion in this study, it can be concluded that the usefulness of educational applications in Nigerian higher institutions have improved students' interest in learning and also makes them actively participated in the teaching and learning process after utilizing educational applications in the real environment. This study shows that the use of educational applications by the instructors while teaching and by the students while solving their assignment, positively affect their academics performance in the higher institutions. Thus, it is expected that Instructors should make use of educational application while teaching abstract topics and also develop instructional applications that are in line with the curriculum. Furthermore, Ads should be reduced by mobile application developers in other to reduce distractions while making use of the applications and students should be encourage to make use of educational applications while solving their assignments and also minimize the time spent on exploring unnecessary findings on the internet during learning.

## II. ACKNOWLEDGMENT

The authors would also like to thank Department of Vocational and Technical Education, Faculty of Education, Ekiti State University, Ado-Ekiti, Nigeria for the support in making this research possible with rigorous supervision.

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