Influence of Artificial Intelligence on Undergraduates' Cademic Performance in Ekiti State University, Ado Ekiti

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DOI: https://doi.org/10.51244/IJRSI.2026.1308000075

Received: 19 August 2026; Accepted: 24 August 2026; Published: 04 September 2026

ABSTRACTS

The study was investigated the influence of Artificial Intelligence on undergraduates' academic performance Ekiti State University, Ado Ekiti. Specifically, the study found how the use of Artificial Intelligence has influenced undergraduate students' academic performance in Ekiti State University, Ado Ekiti and identified the challenges encountered by the students on the use of Artificial Intelligence. Thes study adopted descriptive survey research design. The population of the study comprised 23,214 undergraduates in Ekiti State University, Ado Ekiti. A total of 300 undergraduates from the faculty of Education were selected as sample for the study, using multi- stage sampling procedure. The instrument used in the collection of data was a self-structured questionnaire titled "Artificial Intelligence and Undergraduate Academic Performance" "AIUAP". The instrument was structured on a four-point Likert type scale of Strongly Agree (SA) Agree (A) Disagree (D) and Strongly Disagree (SD). The instrument consists of two sections, A and B. Section A sought information on the demographic data of the respondents while Section B consist of 14 items on the extent of the use of Artificial Intelligence by the students and the challenges encountered by them on the use of Artificial Intelligence. Both face and content validity of the instrument were ensured. Test re-test reliability method was ensured by administering the instrument on 20 students who were not part of the sample used in this study on two occasions, the scores obtained from the two administrations were subjected to Pearson's Product Moment Correlation Analysis and a reliability coefficient of 0.65 was obtained. The researcher with the help of two trained research assistants administered the instrument on the selected 300 undergraduates and ensured 100 percent (100%) returned rate. The research questions raised were answered using descriptive statistics such as frequency, percentage, mean and standard deviation. The finding of the study revealed that there is low extent of the usage of Artificial intelligence by undergraduates in Ekiti State University and that some of the challenges encountered by the students on the use of Artificial Intelligence ranges from data privacy, cost to difficulty in the usage. It was concluded that Artificial intelligence is underutilized and this was as a result of data privacy, cost and difficulty in the usage. It was therefore recommended based on the findings in the study that; efforts should be made by the Management to enforce the use of Artificial intelligence in the teaching and learning as this will enrich students learning and adaptability and there should be an orientation for the students on the use of Artificial intelligence.

Keywords: Influence, Artificial intelligence, Undergraduates, Academic Performance

INTRODUCTION

Artificial intelligence (AI) could be traced as a transformative technology invention of the 21st century, revolutionizing various aspects of individuals' lives. Since its inception in the 1950s, Artificial intelligence has undergone significant advancements, transitioning from a particular research area to a mainstream technology with far-reaching implications. It is a vast branch of computer science concerned with developing intelligent computers capable of doing tasks that typically need human intelligence. Tuomi (2018) defined artificial intelligence as a computer system capable of carrying out tasks typically associated with intelligent beings. Artificial Intelligence is a set of technologies that enable machines to perform tasks that typically require human

intelligence, such as learning, reasoning, and problem-solving (Ford, 2019). Artificial intelligence represents a revolutionary advancement in technology that has the potential to transform various aspects of our lives.

Artificial intelligence (AI) is in the domain of information and communication technology (ICT). It has been speculated that Nigerian universities are very slow to catch up with the use of ICT in teaching and learning. A study conducted by Ngonso et al. (2018) on the use of ICT in teaching mass communication revealed that lecturers and students were unable to tap into the full potential of interactive media. The use of this new technology in the Nigerian educational setting has been studied by a few scholars. In a study conducted by Inyaoiza (2024), findings showed that the students are aware of AI and do use it for academic purposes

Artificial intelligence has become increasingly integrated into various aspects of education, offering new opportunities and challenges for students. Turkle (2017), asserts that over-reliance on Artificial Intelligence can lead to a loss of critical thinking skills and deep learning, as students rely on the technology to complete tasks rather than developing their own problem-solving abilities. Therefore, Artificial intelligence has been said to have a substantial impact on undergraduate academic performance. Artificial intelligence has influenced undergraduate academic performance in various ways. According to Nwosu and Okoli (2019), academic performance refers to the quantification of learning outcomes in a systematic and deliberate way, which includes evaluating students' academic advancement through their grades, test scores, attendance, class participation, study habits, and other crucial indicators of academic success.

Scholars have discussed this influence in their research and studies, highlighting both the positive and negative effects of Artificial Intelligence on students' learning outcomes. Li and Liu (2019) found that the use of Artificial Intelligence -based tutoring systems improved students' academic performance by providing personalized feedback and tailored learning experiences. Artificial intelligence technologies can adapt to students' individual needs and learning styles, leading to better comprehension and retention of course material. However, some studies have raised concerns about the potential negative influence of Artificial Intelligence on undergraduate academic performance. A study by Selwyn (2019) highlighted the risk of over-reliance on Artificial Intelligence technologies leading to decreased critical thinking skills and independent learning among students.

Students may become too dependent on Artificial Intelligence tools for problem-solving, which could hinder their ability to think creatively and analytically and some challenges might surface in the process. Students encounter various challenges when using artificial intelligence (AI) in their education, primarily revolving around ethical concerns and skill divide. Also, many students face difficulties due to a lack of technical skills required to effectively utilize Artificial Intelligence tools. Students could effectively use Artificial intelligence if the challenges are addressed.

Students' performance is not only felt individually but also as a group. Baker (2016), carried out a study and found that Artificial intelligence systems used in education, such as intelligent tutoring systems, may provide feedback or suggestions based on incorrect interpretations of student data, leading to errors or misleading guidance. Luckin, Holmes, Griffiths, and Forcier, (2016) report discussed ethical considerations, data privacy, and the need for human oversight as significant challenges. Solutions include establishing clear ethical guidelines for Artificial Intelligence use in education, ensuring data protection through robust privacy policies, and maintaining human oversight to ensure Artificial Intelligence complements rather than replaces human educators.

Literature suggests that different researchers have focused on student's performance on the use of Artificial Intelligence and others on the relationship between the academic performance of students that use Artificial Intelligence and those that do not but to the researchers' knowledge, much have not been done on the Perceived Influence of Artificial Intelligence on Undergraduate Students' Academic Performance.

Statement of the problem

The objective of sending students to the university is to assist them to learn some basic skills, beliefs and knowledge, necessary for their personal and societal development. The lecturers' role is mainly to assist and guide the students to achieve their objectives. Despite the increase in the number and quality of lecturers in

Nigerian universities (through training and retraining/workshops/seminars), students' performance still appears to be poor, this could either be evidenced in the lecturers, students, or the subjects.

Due to the global competition in academics, most especially those in sciences and vocational aspect and the quest to make life easier and more meaningful, there has been an advocacy on the use of artificial intelligence but it appears that some university students still find it difficult to make use of these gadgets.

As the world advance these days, Lecturers also are not left out in the quest to make education more realizable for the students at all level and disciplines. Hence, the use of Artificial intelligence. However, some of the lecturers and students are still not familiar with the use of artificial intelligence in the course delivery and learning by the students. There is need to ascertain the perception of the undergraduate students who utilize it for their studies. It is against this background that the research was conducted to determine the influence of Artificial Intelligence as perceived by the undergraduates of Ekiti State University

Purpose of the Study

The purpose of the study was to investigate the influence of Artificial Intelligence on undergraduates' academic performance in Ekiti State University, Ado Ekiti. Specifically, the study sought to;

find how the use of Artificial Intelligence has influenced undergraduate students' academic performance in Ekiti State University, Ado Ekiti.

identify the challenges encountered by the students on the use of Artificial Intelligence.

Research Questions

The following research questions were raised to guide the study;

1. To what extent has the use of Artificial Intelligence influenced undergraduate students' academic performance in Ekiti State University, Ado Ekiti?

2. What are the challenges encountered by the students on the use of Artificial Intelligence?

METHODOLOGY

This study adopted a descriptive survey research design. Descriptive survey enables researchers to cover a large number of sample and utilize data collected the way it is without any manipulation; hence it is considered most appropriate for the study. The population of this study comprised 23,214 undergraduate Ekiti State University, Ado Ekiti as obtained from Student Affairs, unit, Ekiti State University, Ado Ekiti. A total of 300 undergraduate students from the faculty of Education were selected as sample for the study, using multi- stage sampling procedure. Stage one involved the selection of two departments from the faculty of Education, through purposive sampling technique. The criterion for this was to ensured that science inclined students were selected, hence, students from Science Education and Vocational and Technical Education Department were selected at first stage. The second stage was the selection of 400 level students, using purposive sampling technique. This gave the researcher the advantage of selecting students who are already familiar with the use of Artificial intelligence in their studies. The last stage was the selection of 150 undergraduates from both Science Education and Vocational and Technical Education Departments, using simple random sampling technique to make the total 300 respondents that were used in this study.

The instrument used in the collection of data was a self-structured questionnaire titled "Artificial Intelligence and Undergraduate Academic Performance" "AIUAP". The instrument was structured on a four-point Likert type scale of Strongly Agree (SA) Agree (A) Disagree (D) and Strongly Disagree (SD). The instrument consists of two sections, A and B. Section A sought information on the demographic data of the respondents while Section B consist of 14 items on the extent of the use of Artificial Intelligence by the students and the challenges encountered by them on the use of Artificial Intelligence.

Both face and content validity of the instrument were ensured. Copies of the instrument were given to experts in Science Education, Vocational and Technical Education and Tests and Measurement, they looked critically into the coverage of the items and corrected where necessary. Test re-test reliability method was ensured by administering the instrument on 20 students who were not part of the sample used in this study on two occasions, the scores obtained from the two administrations were subjected to Pearson's Product Moment Correlation Analysis and a reliability coefficient of 0.65 was obtained which was high enough for the study.

The researcher with the help of two trained research assistants administered the instrument on the selected 300 undergraduates and ensured 100 percent (100%) returned rate. The research questions raised were answered using descriptive statistics such as frequency, percentage, mean and standard deviation.

RESULTS

Descriptive Analysis

Research Question 1: To what extent has the use of Artificial Intelligence influenced undergraduate students' academic performance in Ekiti State University, Ado Ekiti?

Table 1: Frequency and Percentage of the extent to which the use of Artificial Intelligence influenced undergraduate students' academic performance in Ekiti State University

S/N	Items	Agreed		Disagreed		Mean	SD
		Freq	%	Freq	%		
1	Using artificial intelligent tools has improved my overall academic performance	71	23.67	229	76.33	1.44	0.44
2	Artificial Intelligence helps me understand complex Subject better	105	35.0	195	65.0	2.16	0.25
3	Artificial Intelligence applications make it easier	121	40.33	179	59.67	1.89	0.16
4	Artificial Intelligence has increased my motivation to study	205	68.33	95	31.67	2.89	0.37
5	Using Artificial intelligence has improved in exams and tests	56	18.67	244	81.33	1.13	0.24
6	Artificial Intelligence help me manage my study time More effectively	79	26.33	221	73.67	1.71	0.19
7	Overall, Artificial Intelligence has a positive impact on My learning experience	58	19.33	242	80.67	1.18	0.23
Grand Mean = 1.77							

Mean Cut Off = 2.50

Table 1 shows the frequency and percentage of the extent to which the use of Artificial Intelligence influenced undergraduate students' academic performance in Ekiti State University, Ado Ekiti. Respondents' responses were collapsed to agree and disagree for easy interpretation. Using a mean cut off of 2.50 of the scale, all the items in the scale except item 4 had a mean score lower than the mean cut off of the scale. It could be said from the above table that there is low extent of the usage of Artificial intelligence by undergraduates in Ekiti State University.

Research Question 2: What are the challenges encountered by the students on the use of Artificial Intelligence?

Table 2: Frequency and Percentage of the challenges encountered by the students on the use of Artificial Intelligence

S/N	Items	Agreed		Disagreed	
		Freq	%	Freq	%
1	I find artificial intelligence tool difficult to understand and use	221	73.67	79	26.33
2	There is not enough support or training on how to use artificial intelligence	56	18.67	244	81.33
3	Artificial Intelligence tools are often not reliable and Malfunction	49	16.33	251	83.67
4	Using Artificial intelligence tools are too expensive	241	80.33	59	19.67
5	Artificial intelligence tools sometimes give incorrect or misleading information	87	29.0	213	71.0
6	There is a lack of Artificial intelligence tools that are Relevant to my course of study	104	34.67	196	65.33
7	I worry about my data privacy when using Artificial Intelligence.	289	96.33	11	3.67

Table 2 shows the frequency and percentage of the challenges encountered by the students on the use of Artificial Intelligence. Respondents' responses were collapsed to agree and disagree for easy interpretation. 289 (96.33%) of the respondents said that they worry about their data privacy when using Artificial Intelligence while 241 (80.33%) of them said that Using Artificial intelligence tools are too expensive. About 221 (73.67%) of the respondents said that the find artificial intelligence tool difficult to understand and use. It could be said from the above table that some of the challenges encountered by the students on the use of Artificial Intelligence ranges from data privacy, cost to difficulty in the usage.

DISCUSSION

The finding of this study revealed that there is low extent of the usage of Artificial intelligence by undergraduates in Ekiti State University. this finding is in contrast to the submission of Li and Liu (2019) which submitted that the use of Artificial Intelligence -based tutoring systems improved students' academic performance by providing personalized feedback and tailored learning experiences.

The finding of this study also revealed that some of the challenges encountered by the students on the use of Artificial Intelligence ranges from data privacy, cost to difficulty in the usage. This finding is in agreement with the finding of Luckin, Holmes, Griffiths, and Forcier, (2016) which reported that ethical considerations, data privacy, and the need for human oversight as significant challenges on the usage of Artificial intelligence.

CONCLUSION

Based on the findings in this study, it was concluded that Artificial intelligence is underutilized and this was as a result of data privacy, cost and difficulty in the usage.

RECOMMENDATIONS

Based on the findings in this study, the following recommendations were made:

1. Effort should be made by the Management to enforce the use of Artificial intelligence in the teaching and learning as this will enrich students learning and adaptability.

2. There should be an orientation for the students on the use of Artificial intelligence.

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