

## **Perceived Lecturers' Awareness on the Use of Artificial Intelligence Platforms for Teaching in Colleges of Education, Yobe State, Nigeria**

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### **Abstract**

The study investigated perceived lecturers' awareness of using Artificial Intelligence (AI) for teaching in colleges of education, in Yobe State, Nigeria. The study adopted a descriptive survey design. The study was guided by two research objectives and two research questions. The study's target population was 146 lecturers from three Colleges of Education in Yobe State. A random sampling technique was used to determine the sample from the population. The sample has a total population of 121 lecturers. The sample size was obtained using the Krejcie and Morgan table for sample size. The instrument used for data collection was a questionnaire titled "Perceived lecturers, Awareness on use of artificial intelligence for teaching and learning" and validated by six experts. It was also pilot-tested at Sir Kashim Ibrahim College of Education, Maiduguri. The result of pilot testing was analyzed using Cronbach alpha and yielded a reliability coefficient of 0.593 and 0.727 respectively. Frequency count and percentage were used to analyze the demographic data, mean and standard deviation were used to answer the research questions and Kruskalwalli's non-parametric tests were used in testing the null hypotheses. From the result, both null hypotheses were rejected. The study revealed that lecturers perceived that artificial intelligence is useful for teaching and learning in Colleges of Education (mean score of 3.11) and lecturers perceived artificial intelligence as easy to use in teaching and learning in Colleges of Education (mean score of 2.79). There is a significant difference in the lecturers' level of perceived usefulness of artificial intelligence in teaching and learning based on their years of experience and it is hereby rejected (H-test = 102.399, df = 2, p = 0.000) and there is a significant difference on the lecturers' level perceived ease of use of artificial intelligence platform in teaching and learning based on their schools (H-test = 96.829, df = 2, p = 0.000). It is therefore recommended that Governments and Non-Government

Organizations (NGOs) should encourage lecturers' by organizing sensitization workshops for them, to enlighten them on the existence and importance of artificial intelligence for teaching and learning in Colleges of Education in such a way that it will make them more aware of the resourcefulness of Artificial Intelligence (AI).

**Key Words:** Lecturers; Artificial Intelligence; Perceived Usefulness; Perceived ease of use

## **Introduction**

Information Communications Technology devices are currently becoming more creative, not only the use of computers but also include links to the internet. It enables distance learning to take place in which students and instructors are not limited by time and freedom to interact and conduct the learning process, either synchronously or asynchronously. Synchronous distance learning situation is where the lecturer and students convene at the same time but in different locations, while asynchronous distance learning takes place where the location in which both the time and place are different (Newby, 2011).

Information and Communication Technology (ICT) are tools for both students and teachers. ICT has the possibility of being used to meet up with the learning desires of students, increase self-efficiency and freedom of learning among students and improve students' progress. ICT is the integration of communication technologies such as telecommunication, computers and the Internet to manage and transmit information in various formats (Sharma, 2015).

Awareness refers to familiarity with understanding and uses of technological tools, and platform band systems (Fry & Lenhart, 2018). It also involves recognizing the potential impact and uses of these technologies in everyday life. Awareness in the digital age has expanded to include knowledge of digital tools, cyber security risks and technological advancements such as artificial intelligence and blotching. Individual organizations are increasingly expected to understand how technology affects their personal, business and societal lives (Fry & Lenhart, 2018).

A lecturer is an academic instructor primarily responsible for delivering lectures, facilitating learning, and supporting students' academic progress at a higher education institution. Lecturers engage in activities such as preparing and delivering lectures, assessing student performance, and often contributing to curriculum development (Gosling & Moon, 2001). Their role may vary depending on institutional requirements but typically focuses on fostering a

conducive learning environment and facilitating students' comprehension and knowledge acquisition.

Perceived usefulness refers to the degree to which users believe that Artificial Intelligence (AI) technology will improve their educational tasks, enhance teaching and learning processes and lead to better performance. Davis, (2018). This concept originally derived from Davi's Technology Acceptance Model (TAM) is crucial in understanding how educators and students assess the impact of AI-based tools on educational efficiency and effectiveness. Artificial Intelligence (AI) platforms are perceived as useful when they streamline the learning process by offering personalized learning experiences and automating routine tasks like grading, thus saving time for both students and teachers (Tondeur et al, 2020).

AI is the simulation of human intelligence in machine or computer systems that are designed to perform tasks that typically require human cognitive function, such as learning, reasoning, problem-solving, understanding language and decision-making. AI systems can analyze large amounts of data, recognize patterns and make predictions or actions based on that data, often improving over time through a process known as machine learning. AI enables machines to mimic or replicate aspects of human thought and behaviours, often improving their performance over time through machine learning algorithms (Russell & Norvig, 2021).

Perceived ease of use has to do with the degree to which an individual believes that using a particular technology will be free from effort. The context of AI's perceived ease of use relates to how simple and intuitive users such as teachers and students find the platform to operate. It is a core concept derived from Davi's Technology Acceptance Model (TAM) which suggests that technologies that are easier to use are more likely to be accepted and adopted. Perceived as ease to use teachers may view an AI tool as easier to use if they can start using it effectively with a minimal tutorial or technical support as opposed to a platform that requires extensive training sessions (Sharman et al, 2021).

### **Statement of Problem**

Teaching and learning have gone beyond teachers standing in front of a group of students and disseminating information to them without the students' adequate participation (Ajayi 2008). This conventional method still survives in academia because it is cheap and efficient.

Unfortunately, it does not adequately develop learners' cognitive ability. They instead remain more passive in the classroom. In the conventional teaching method, students are dependent on the instructors in every instructional-related activity. Such dependence supersedes students' creativity so many of them never get to know their strengths. Part of the disadvantages of the conventional teaching method are over crowd of students in classrooms which leads to low academic performance of students. In this method, a teacher stands in the classroom, faces and explains the contents of the lecture to a large number of students by using chalk/marker and board.

It appears that tools such as Skype, WhatsApp, Google Classroom, Moodle, Edmodo, Schoolboy, Dig and Nin are available and accessible for the teaching and learning process online. The use of these tools according to Ajayi (2008), involves various methods such as systemized feedback systems, computer-based operation networks, video conferencing and audio conferencing, internet/worldwide websites and computer-assisted instruction. However, effective utilization of such innovative teaching tools and methods depends on the lecturer's perceived use.

The usability of innovative technology tools in teaching is lagging behind expectations and desires in Nigerian colleges of education. Tools used in retrieving, storing and sharing information or instructional content should be made accessible to lecturers to ease instruction and have a positive impact on students' academic performance. In this information era, e-learning has become the knowledge provider. Knowledge is disseminated and is made available to many seekers via information technology advanced in social media tools and software facilities, communication and networking systems (Penick & Bonnseter, 2006). With the idea to appeal to the mind through visual and auditory sense organs, educators of all ages seek to utilize audio, visual and audio-visual equipment and materials for teaching and learning. Osuji (2004), noted that the growth in the use of technology has brought outstanding development into modern education. Osuji further noted that media serve as channels through which messages, information, ideas and knowledge are disseminated.

There is a need for a shift from a teachers-centred to learners-centred approach using innovative teaching strategies. Artificial intelligence platforms are among the innovative advanced learning tools that explore learners' creativity, and strengths and are actively involved in constructing knowledge. Artificial intelligence is one of the top

educational networking platforms promoting the quality of innovation, creativity, active contribution and partnership (Russell & Norvig, 2021). With the above information, there is a need to study the lecturers' perception on the use of Artificial Intelligence platform for teaching Education courses in Colleges of Education in Yobe State, Nigeria.

### **Objectives of the Study**

The main objective of this study is to assess the lecture's perceived use of artificial intelligence (AI) platform for teaching in Colleges of Education in Yobe State. Specifically, the study seeks to determine:

- I. Lecturers' perceived usefulness on the use of artificial intelligence platforms for teaching in Colleges of Education in Yobe state.
- II. Lecturers' perceived ease of use of artificial intelligence platforms for teaching in Colleges of Education in Yobe State.

### **Research Questions**

The following research questions were raised to guide the study:

- I. What is the level of lecturers' perceived usefulness of artificial intelligence platforms for teaching in Colleges of Education in Yobe State?
- II. What is the level of lecturers' perceived ease of use of artificial intelligence platforms for teaching in Colleges of Education in Yobe State?

### **Methodology**

The research adopted a survey design. Alamu & Olukosi (2008), say that survey research deals with the collection of data to describe and interpret existing conditions, prevailing practices, beliefs, attitudes and ongoing processes. The population of this study comprises all lecturers from colleges of education in Yobe State. The target population consists of lecturers from schools of Education. Lecturers spread across the schools in the colleges consisted of 146. FCE POT. 74, CAI POT has 11 and USCOE GSH has 61 lecturers. A sample was drawn from the population from three Colleges of Education in Yobe State. 121 lecturers formed the sample of the study from three colleges of education. A simple random sampling technique was used in the selection of the respondents. Krejcie & Morgan (1970) table for sample size was adopted. The instrument used for data collection was

a questionnaire tagged “Perceived Lecturers’ Usefulness and, Ease of Use Artificial Intelligence Platform for Teaching and Learning in Colleges of Education (PLUEAIPL).

The questionnaire contained two sections; Section A requires the respondents’ demographic information, while Section B is subdivided into two sub-sections. Sub-sections one and two contained 10 statement items each on lecturers’ perceived usefulness and perceived ease of use of artificial intelligence for teaching and learning. It adopted four Point Likert scales which the respondents choose from the options provided. Strongly Agree (SA) = 4, Agree (A) = 3, Strongly Disagree (SD) = 2 and Disagree (DA) = 1. The instrument was validated by three lecturers from the Department of Educational Foundations and Curriculum and three Lecturers from the Department of Education Psychology Ahmadu Bello University Zaria, each of them not below the rank of senior lecturer. All corrections, grammatical and spelling errors, and recommendations made by experts were affected and a final copy of the instrument was produced and subjected to pilot testing. The instrument was pilot-tested to ascertain and ensure its reliability.

The pilot testing was carried out at Sir Kashim Ibrahim College of Education Maiduguri, Borno State. The reliability of the instrument was ascertained using the Cronbach alpha reliability coefficient. The result of the pilot testing indicates that the perceived usefulness is 0.593 and, the perceived ease of use is 0.727 respectively. The data was analyzed using descriptive and inferential statistics. Both research questions were answered using mean score and standard deviation, where a mean score cut off of 2.5 was considered agreed while a mean score of 2.4 and below was considered not agreed concerning the research question. All analyses were tested using a statistical package for social sciences (SPSS) Version 23.

## Results

### Analysis of Demographic Data

**Table 1:** Distribution of Lecturers Based on Years of Experience

<b>Years of Experience</b>	<b>Frequency</b>	<b>Percentage</b>
1-15	71	59.5
16-30	36	29.8
31- above	13	10.7
<b>Total</b>	<b>121</b>	<b>100.0</b>

Table 1 shows that 71 lecturers which represent 59.5% of the respondents are within 1-15 years of experience, while 36 lecturers

representing 29.8% of respondents are within 16-30 years of experience and 13 lecturers representing 10.7% are within 31- Above years of experience. The result indicates that lecturers that are within 1-15 years of experience are the majority of the respondents compared to those having 16-30 years of experience and 31-above years of experience.

**Table 2:** Distribution of Lecturers Based on Colleges

Colleges	Frequency	Percentage
F C E Potiskum	52	43.0
C O A I Potiskum	10	8.3
C O E Gashua	59	48.8
<b>Total</b>	<b>121</b>	<b>100.0</b>

From table 3, it indicates that fifty-two of the lecturers which represent 43.0% are from FCE, ten lecturers represent 8.3% are from COAI while fifty-nine which represent 48.8% are from COE which shows that most of the respondents are from COE Gashua, followed by FCE Potiskum and COAI Potiskum.

**Research Question One:** What is the levels of lecturers' perceived usefulness of artificial intelligence platforms for teaching in Colleges of Education in Yobe State?

**Table 3:** Mean and standard Deviation of respondents on the Lecturers' perceived usefulness of artificial intelligence platform for Teaching in Colleges of Education in Yobe State.

S/No	Items	Mean	SD	Decision
1	Using an Artificial intelligence platform will enhance my effectiveness in my teaching career.	3.42	0.80	Agree
2	The use of an Artificial intelligence platform gives me more control and freedom to facilitate my teaching.	3.34	0.61	Agree
3	Artificial intelligence platforms support the critical part of my tasks.	2.31	1.01	Disagree
4	The use of Artificial intelligence platforms in teaching will make my lessons more diverse.	2.90	1.02	Agree
5	Artificial intelligence platform usage will increase my daily productivity.	3.26	0.98	Agree
6	The use of an Artificial intelligence platform will be counter-productive due to insufficient technical resources.	2.83	0.89	Agree
7	Artificial intelligence platform usage will reduce the stress and tension inherent in teaching large classes.	3.81	0.45	Agree
8	Artificial intelligence platforms will eliminate eye contact and reduce students' seriousness.	3.46	0.91	Agree
9	Artificial intelligence platforms will help me finish the content of my lesson quickly.	2.61	1.01	Agree

10	The teaching-learning process will become easier with the use of Artificial intelligence platforms.	3.12	0.84	Agree
	<b>Cumulative</b>	<b>Mean</b>		
	<b>3.11</b>			

**Decision Mean 2.50**

Table 3 reveals the responses of the respondents on the lecturers' perceived usefulness of artificial intelligence platforms for teaching in colleges of Education. It shows that the majority of the respondents agree that lecturers perceived that artificial intelligence is useful for teaching, while some of the respondents disagree that artificial intelligence is useful for teaching. The cumulative mean is 3.11, which is greater than the decision mean of 2.50. This implies that lecturers agree on the perceived usefulness of artificial intelligence platforms for teaching.

**Research Question two:** What is the levels of lecturers' perceived ease of use of artificial intelligence platforms for teaching in Colleges of Education in Yobe State?

**Table 4:** Mean and standard Deviation on Lecturers' perceived Ease of use of Artificial Intelligence Platform for Teaching in Colleges of Education Yobe State, Nigeria

S/No	Statement	Mean	SD	Decision
1	The use of Artificial intelligence platforms will make my lesson easy.	2.51	0.94	Agree
2	Using an Artificial intelligence platform to teach will be frustrating.	1.68	0.97	Disagree
3	The use of Artificial intelligence platforms will take more of my time than necessary.	2.35	1.12	Disagree
4	Using Artificial intelligent platforms is effortless.	3.04	0.84	Agree
5	Network problems will hinder lessons using the Artificial intelligence platform	3.55	0.83	Agree
6	I can use Artificial intelligence platforms in teaching without written instruction.	2.98	0.80	Agree
7	Artificial intelligence platform usage is always cumbersome.	2.50	1.20	Agree
8	Artificial intelligent platforms are easy to navigate	3.12	1.07	Agree
9	It is easy to become skilful at using Artificial intelligent platform in teaching.	3.38	0.70	Agree
10	Artificial intelligence platform utilization in teaching will be too complex.	2.82	1.18	Agree
	<b>Cumulative</b>	<b>Mean</b>		
	<b>2.79</b>			



### **Decision Mean 2.50**

Table 4 reveals responses of respondents on the lecturers' perceived ease of use of artificial intelligence platforms for teaching education in Colleges of Education in Yobe State. It reveals that majority of the respondents agree that the use of Artificial intelligence platforms for teaching education is easy, while some of the respondents disagree that the use of Artificial intelligence platforms for teaching is easy. This is because the cumulative mean score is 2.79 which is greater than the decision mean of 2.50. This implies that lecturers agree on the perceived ease of use of artificial intelligence platforms for teaching in colleges of education.

### **Discussion**

From the findings of this study, it was deduced that lecturers affirmed the perceived usefulness, and ease of use and have positive perceptions towards the use of artificial intelligence for teaching at colleges of education. Which in line with Zawacki-Richt et al, (2019) Findings suggest that lecturers generally view AI as beneficial for automating administrative tasks, providing individualized support, and enhancing student engagement. Educators valued AI for reducing workload and enabling a more personalized learning experience, though concerns over implementation and accessibility were noted.

Also, the finding is in line with Teo (2011) who indicated that lecturers were more likely to adopt AI when they perceived it as easy to use. The study highlighted that user-friendly interfaces and training support played crucial roles in influencing ease-of-use perceptions among college lecturers.

On perceived ease of use, the findings reveal that lecturers have seen use of AI as a positive way of imparting knowledge which is not in line with Salem & Abu-Naser (2019), whose result shows that lack of technical skills negatively impacted perceptions of ease of use of AI for teaching. The study underscored those lecturers who received adequate training found AI applications more intuitive, suggesting a strong link between technical support and ease of use in educational settings. On the other hand, findings of the current study is in agreement with that of Huang & Hsiao (2012) indicated that lecturers who frequently used AI for administrative tasks reported a higher perception of ease of use for teaching purposes as well. The study also suggested that familiarity with similar digital tools contributed to the perception that AI was manageable and user-friendly.

## Recommendations

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

- I. The government should provide all facilities and funds for Lecturers to utilize artificial intelligence platforms effectively.
- II. The School Authority should organize regular seminars/workshops for college lecturers to be more use of artificial intelligence platforms for teaching in Colleges of Education.
- III. Service providers should reduce internet service tariffs so that lecturers and students can afford and use internet services easily.

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