International Journal of Science and Research Archive
eISSN: 2582-8185
Cross Ref DOI: 10.30574/ijsra
Journal homepage: https://ijsra.net/

(RESEARCH ARTICLE)

Check for updates

Assessment of lecturers' readiness level on the use of artificial intelligence in colleges of education in Anambra state

Chinwe Onyemaechi [1,*], Okafor Jeremiah [1] and Arinze Anesthesia [2]

[1] *Department of Psychology, Faculty of Social Sciences Chukwuemeka Odumegwu Ojukwu University, Igbariam.*
[2] *Federal College of Education (Technical), Umunnze.*

International Journal of Science and Research Archive, 2025, 14(02), 726-732

Publication history: Received on 27 December 2024; revised on 04 February 2025; accepted on 07 February 2025

Article DOI: https://doi.org/10.30574/ijsra.2025.14.2.0380

Abstract

This study assessed lecturer's readiness level on the utilization of Artificial intelligence in colleges of education in Anambra state. A descriptive survey research design was adopted for the study. Two research questions and two hypotheses guided the study. 95 lecturers drawn from the two colleges of education in Anambra state was used in the study. The instrument for data collection was a Lectures' Readiness Level Questionnaire (LRLQ) developed by the researchers and validated by three experts. The reliability co-efficient was established using cronbach Alpha and a value of 0.87 was obtained. The research questions were answered using mean and standard deviation while the null hypotheses were tested using t-test statistics. It was revealed that the lecturers readiness level on the utilization of Artificial intelligence was low and lack of equipment, inability to adjust to new ways, poor power supply are some of the causes of low level of readiness. It was recommended among others that seminar/workshops be made available for the practicing lecturers, also there should be provision of constant power supply to enable effective use of Artificial Intelligence (AI).

Keywords: Artificial; Colleges; Intelligence; Lecturers; Readiness Level

1. Introduction

Education has widely been acclaimed as the greatest instrument of positive change. It empowers individuals and transforms societies and nation at large. However, changes in technology have continued to alter possibilities and create new challenges for learning and pedagogy. This developmental trend in technology coupled with the needs and expectations from a range of stakeholders have made it imperative for educational organizations, lecturers and society at large to constantly upgrade their strategies and policies as a way to remain effective and competitive. Artificial intelligence which is one of the new trends in electronic technology can be used to enhance teaching and learning in colleges of education in Anambra state.

Artificial Intelligence (AI) refers to computer systems capable of performing complex tasks that historically only a human could do, such as reasoning, making decisions or solving problems, recognizing speech, identifying patterns among others (Seo, Tang, & Roll, 2021). Hwang, Xie, Wah, & Gašević, (2020) stated that Artificial Intelligence (AI), is a subfield of computer science that focuses on creating intelligent agents capable of performing tasks that would typically require human levels of intelligence. These tasks include problem-solving, speech recognition, decision-making, machine vision, natural language processing (NLP), among others. Long, & Magerko, (2020), submitted that the use of AI improves experiences like digital simulation, manipulation and interactivity. According to Jou, Lin, & Wu, (2022), AI is an interdisciplinary science with many approaches; it can be rule-based and operate under a predefined set or conditions, or it can use machine learning algorithms to adapt to its environment. It is the simulation of human intelligence processes by machines, especially computer systems.

* Corresponding author: Chinwe Onyemaechi

Technology makes our lives easier, in the rapidly evolving field of education; Artificial Intelligence has emerged as a transformative force. Currently, Linsey, & Becker, (2022) stated that AI in education is primarily focused on personalizing the learning experience, enhancing teacher effectiveness, and improving administrative efficiency. Artificial intelligent performs tasks in seconds that would take minutes, hours, or even days for human. Jimoh, Hyginus, Samson,Samson, Obe, Olusesan&Ojo (2020) suggested the use of mobile communication technologies to execute given tasks as the answer to cope with the several changes and innovations in learning environment and employment situation. The daily life of educators expands beyond teaching, it involves many administrative, time-and-energy-consuming tasks, including grading assignments and exams, preparing materials and lessons, filling forms, and writing reports opined Onyemaechi (2025). According to Linsey& Becker, (2011) Artificial intelligent can be particularly effective by assisting educators in providing personalized, adaptive learning experiences to all students, especially the generative AI which can be central to fostering an inclusive and accessible learning environment in a highly diverse classroom with students of different backgrounds, economic status, and languages. Kang, & Im, (2023) stated that Generative AI can streamline and speed up some of these tasks, allowing lecturers to work less and devote more attention to students' needs. Generative AI can be a valuable tool for enhancing students' potential by creating complex, unconventional scenarios in all kinds of disciplines (from math and history to arts and music), generative AI can challenge student's existing perspectives, prompting them to think critically to solve these problems. Holstein, Aleven, &Rummel, (2020) has it that AI can provide insights into student performance, helping educators identify areas where students struggle and need additional support. Artificial intelligence can also be used to power monitoring systems to help track students' behavior to glean insights into their development (Lee, 2020).

According to Onyemaechi (2025), utilization of artificial intelligence is relatively new in Nigeria's educational system; it is a departure from the conventional approach in curriculum implementation. It targets transformation, reformations and innovations in teaching and learning in every aspect of the educational level including colleges of Education in Anambra state. Adequate utilization of Artificial intelligence provides for credence of independent, expertise, active learning possibility, self-responsibility for learning and facilitates sharing of academic resources .But the fact remains that lecturer who has not really being trained to the use artificial intelligent cannot have the zeal of utilizing it. This is more reasons colleges of education should sponsor their staff for workshops and conferences in Artificial intelligence in order to expose them to global challenges in their respective fields. Common experiences revealed that traditional educational environments do not seem to be suitable for preparing leaners to function or be productive in workplaces of today's society. College of education that do not incorporate the use of new technologies cannot seriously claim to prepare their students for life in the twenty-first century. Technological readiness has been defined as how prepared stakeholders or institutions are to implement e-learning (Adirika & Alike, 2010, Onyemaechi, etal,2022; Obi-Nwosu, et.al 2017)). Mastering capacities of lecturers to search, select, analyze and evaluate information rather than just technical operation of technological equipment is major challenge (Edo, 2016). This means that they must be creative and efficient at using digital tools, communicate and collaborate with other people to actually produce, publish and commercialized their researches, materials and information.

Presently, the challenges are enormous as the space the students engage themselves in the internet usage cannot be compared to the space in which the lecturers embrace it (Odua , Umoh & Ikogi 2021). The rate the students out space the lectures' have sometimes affect the utilization in the classroom set up as no lecturer will be willing to expose their incompetence in the use of the modern technology. There is the need for the lecturers to get themselves equipped the use of modern technology for effective teaching and learning.

1.1. Purpose of the study

The main focus of the study is to determine lecturers' readiness level on the use of Artificial Intelligence (AI) in colleges of education in Anambra State. Specifically, the study sought to compare the readiness level of:

Lecturers in state and federal colleges of education.

Male and female lecturers in colleges of education in Anambra State.

1.2. Research questions

What is the difference in the readiness level of lecturers in state and federal colleges of education in Anambra State?

What is the difference in the readiness level of male and female lecturers on the use of artificial intelligence in colleges of education in Anambra State?

1.3. Research hypotheses

The following null-hypotheses were formulated and tested at 0.05 level of significance

- $Ho_{1:}$ there is no significant difference on the readiness level of male and female lecturers on the use of artificial intelligence in colleges in colleges of education in Anambra state.
- $Ho_{2:}$ there is no significant difference on the readiness level of lecturers in state and federal Colleges of education on the use of artificial intelligence in Anambra state.

2. Methodology

2.1. Design of the study: A descriptive survey research design was adopted for the study

Area of the study: The study was carried out in Government owned Colleges of Education in Anambra State namely Nwafor Orizu College of Education Nsugbe (NOCEN) and Federal College of Education (Technical) Umunze (FCE(T)).The two colleges have many things in common like they use the same minimum standard, they run two semesters also a three year programme and they award Nigerian certificate in education (NCE) and the schools chosen have facilities, personnel, tools and equipment, staff (Academic) who are familiar with ideas relating to the purpose of study with the aim of generalizing the results for the entire population.

The population for the study: The population of the study was 1,510 lecturers in the 1 federal and 1 state college of education in Anambra state. The bursary unit of the two colleges was contacted and email addresses of all lecturers in the two colleges of education were collected. A money survey service was used to send the questionnaire to all emails. All 95 lecturers that responded to the survey formed the sample of study. (Source: Statistics units of the two Colleges of Education, 2024).

Instrument for data collection: Data was collected through structured questionnaire, tagged; "lecturers Readiness Level Questionnaire (LRIQ)". It consists of two sections, namely; section A and B. Section measured the demographic variables of the respondents, section B consist of a 12-item on readiness level. It was developed by the researchers through literature review based on the specific purposes of the study. The items of the questionnaire were structured on a four-point scale thus strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD) representing 4, 3, 2, and 1 respectively. The content and face validity of the instrument was done by three expects, two from Home Economics Department and one from Measurement and Evaluation of Federal College of Education (Tech) Asaba. The reliability of the instrument was established using Cronbach Alpha statistical tool which yielded the reliability co-efficient of 0.87.

Data analysis techniques: Data collected from the study were analyzed using means score and standard deviation. t-test was used at 0.05level of significance to test the research hypotheses. A mean score of 2.50 and above was accepted while a mean score below 2.50 was rejected.

3. Results

3.1. Researcher question 1: what is the difference in the readiness level of lecturers in state and federal colleges of education in Anambra State on the use of Artificial intelligence?

Table 1 Mean and Standard Deviation of state and federal lecturers' readiness level

s/n	Items	State (N= 26)			Federal (N=69)		
		X	SD	DECISION	X	SD	DECISION
1	I know how to communicate using email, skype and text/audio/video files using cloud computing	2.65	0.67	Low	2.00	0.65	low
2	1 know how to download and install software	2.23	0.56	Low	2.47	0.98	Low
3	I have the basic skills to search for information by browsing the internet and receive data	2.20	0.66	Low	2.65	0.79	High
4	I have basic skills to use a computer	2.71	0.98	High	3.65	1.21	High

5	I can create presentations using PowerPoint, create spreadsheets using word for content delivery	2.33	0.78	Low	2.48	2.67	Low
6	The thought of using artificial intelligence motivates me	2.34	0.67	Low	2.35	20.73	Low
7	I am interested to upgrade my work performance through artificial intelligence	2.45	0.67	Low	3.50	1.24	High
8	I have access to high speed internet	2.23	0.76	Low	3.56	1.21	High
9	I have access to adequate software	2.45	0.78	Low	2.01	0.67	Low
10	I have access to relevant hardware, printer, scanners, and overhead projectors.	2.33	0.45	Low	2.38	0.66	Low
11	I have access to a computer in the school	2.43	0.78	Low	2.10	2.68	Low
12	I can troubleshoot most problems associated with using a computer	3.40	1.09	High	2.18	0.68	Low
	Total	2.45	0.98	Low	2.33	1.09	low

Note: X1= Mean1; X2 = Mean2; SD1= Standard Deviation1; SD2 = Standard deviation

Table 1 above shows the mean response scores of lecturers of state and federal tertiary institutions on the use of Artificial Intelligence. The total means values of 2.45 and 2.33 respectively, showing that lecturers from both state and federal colleges of education had a low readiness level.

3.2. Research Question 2: what is the difference in the readiness level of male and female lectures on the use of artificial intelligence in the colleges of education in Anambra state?

Table 2 Mean scores of male and female lectures on the use of artificial intelligence in the colleges of education in Anambra state

s/n	Items	Male (N= 58)			Female (N= 37)		
		X1	SD1	Decision	X2	SD2	Decision
1	I know how to communicate using email, skype and text/audio/video files using cloud computing	2.20	1.13	Low	2.00	0.65	low
2	1 know how to download and install software	2.01	0.65	Low	2.67	0.98	High
3	I have the basic skills to search for information by browsing the internet and receive data	2.50	0.88	Low	2.65	0.79	High
4	I have basic skills to use a computer	3.50	1.21	High	3.65	1.21	High
5	I can create presentations using PowerPoint, create spreadsheets using word for content delivery	2.40	0.80	Low	2.48	0.87	Low
6	The thought of using artificial intelligence motivates me	2.05	0.87	Low	2.45	0.66	Low
7	I am interested to upgrade my work performance through artificial intelligence	2.41	0.77	Low	3.50	0.85	High
8	I have access to high speed internet	2.45	0.98	Low	2.44	0.69	Low
9	I have access to adequate software	2.34	0.65	Low	2.47	0.66	Low
10	I have access to relevant hardware, printer, scanners, and overhead projectors.	2.00	0.88	Low	2.36	0.89	Low
11	I have access to a computer in the school	2.09	0.62	Low	2.12	0.87	Low
12	I can troubleshoot most problems associated with using a computer	3.12 0.62	0.72	High	2.27	0.77	Low
	Total	2.35	0.98	Low	2.38	0.87	low

Note: X1= Mean1; X2 = Mean2; SD1= Standard Deviation1; SD2 = Standard deviation

Table 2: above shows the mean scores of male and female lectures on the use of artificial intelligence in the colleges of education in Anambra state. The total of 2.35 and 2.38 respectively, show that both male and female lecturers had a low readiness on the use of artificial intelligence in Anambra state.

3.3. Research Hypotheses

- **$H0_1$:** There is no significant difference on the readiness level between lecturers of state and federal colleges of education in Anambra State on the use of artificial intelligence.

Table 3 T-test Statistics on the Readiness Level of State and Federal Lecturers

Categories	N	X	St.D	d_f	P	t_{cal}	t_{crit}	Decision
State	26	2.45	0.98					$H0_1$
				119	0.05	1.48	1.96	Accepted
Federal	69	2.31	0.87					

The result of table indicated that the t_{cal} value is 1.48 which is lower than the t_{crit} value, 1.960. This implies that the null hypothesis is not rejected. Therefore, there is no significant difference on the readiness level between State and Federal lecturers on the use of artificial intelligence in colleges of education Anambra.

- **$H0_2$:** There is no significant difference on the readiness level between male and female lecturers on the use of artificial intelligence in colleges of colleges.

Table 4 t-test Statistics on the Readiness Level of Male and Female Lecturers

Categories	N	X	St.D	d_f	P	t_{cal}	t_{crit}	Decision
Male	58	2.45	0.98					$H0_1$
				119	0.05	0.66	1.96	Accepted
Female	37	2.31	0.87					

The result of table indicated that the t_{cal} value is 0.66 which is lower than the t_{crit} value, 1.960. This implies that the null hypothesis is not rejected. Therefore, there is no significant difference on the readiness level between male and female lecturers on the use of artificial intelligence in colleges of education in Anambra state.

4. Discussion of Findings

Finding from the research question 1 revealed that the readiness level of lecturers in state and Federal colleges of education in Anambra state are low. The hypothesis further confirms that there is no significant difference in the readiness level of lecturers of state and federal colleges of education in Anambra state. This finding is in line with of Goode (2010) who reported that attitude towards technology is not a function of type of college/institution.

Finding from research question 2 revealed that the readiness level of male and female lecturers on the use of artificial intelligence was low. The finding from research hypothesis 1 also revealed that there is no significant difference in the readiness level of male and female lecturers on the use of artificial intelligence in Anambra state. The finding is in line with that of Edo (2016) and Munif (2017) who independently reported that attitudes towards learning with new technology do not change with gender.

5. Conclusion

The paper deals with the assessment of lecturers' readiness on the use of artificial intelligence in colleges of education in Anambra State. Education has widely been acclaimed as the greatest instrument of positive change. It empowers individuals and transforms societies and nation at large especially all these 21st century innovations which in one way or the other helps in teaching and learning also gives room for more effective instructional delivery as well as technical competence to enhance the students learning ability and retention.

However, Technology can only help us to achieve educational objectives when we are ready to make use of it. This paper therefore, calls for readiness on the part of lecturers on use of AI which has it's primarily focus on personalizing the learning experience, enhancing teacher effectiveness, and improving administrative efficiency. Artificial intelligent performs tasks in seconds that would take minutes, hours, or even days for human to perform.

Based on the findings, it is therefore concluded that the readiness of lecturers of colleges of education in Anambra State is low and lack of equipment, inability to adjust to new ways, poor power supply are some of the causes of low level of readiness. And gender and type of college have nothing to do with lecturers' readiness level on the use of artificial intelligence.

Recommendations

Based on the findings of the study, the following were recommended.

- Technological facilities should be provided to enable the lecturers to develop the required mindset to use them readily.
- Lecturers should be trained to adequately utilize technology in enhancing their teaching especially this AI and there should be provision of constant power supply to enable effective use of Artificial Intelligence (AI)
- Lecturers should collectively use methodologies and competencies in AI that will aid adequate skill acquisition and knowledge retention in colleges of education students in Anambra state.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from individual participants included in the study.

References

[1] Adirika, B.N & Alike, G (2010). Technological innovations as enhancement tool for competitive and entrepreneurship in Nigeria Teacher Education. UNIZIK Orient Journal of Education, 5(1), 25-29.

[2] Edo, B.L. (2016). Attitude of Academic Staff towards e-learning in tertiary institutions in Rivers State. International journal of education and evaluation. 2(2), 1-11.

[3] Goode, J. (2010), mind the Gap: the Digital Dimension of College Access. The Journal of Higher Education, 81(5), 583-618.

[4] Holstein, K., Aleven, V., &Rummel, N. (2020).A conceptual framework for human–AI hybrid adaptivity in education. In: International conference on artificial intelligence in education pp. 240–254.

[5] Hwang, G. J., Xie, H., Wah, B. W., &Gašević, D. (2020).Vision, challenges, roles and research issues of Artificial Intelligence in Education. Computers and Education: Artificial Intelligence, 1, 100001.

[6] Jimoh,B, Hyginus, O.O, Samson, O.A, Samson, I.N, Obe, P.I, Olusesan, J.O., & Ojo, A.O. (2020) innovation into industrial-technology programmes of Nigerian Universities for quality assurance. Indonesian Journal of Electrical Engineering and computer science, 20 (3), 1315-1324.

[7] Jou, M., Lin, Y. T., & Wu, D. W. (2022).Effect of a blended learning environment on student critical thinking and knowledge transformation. Interactive Learning Environments, 24(6), 1131–1147.

[8] Kang, M., &Im, T. (2023). Factors of learner–instructor interaction which predict perceived learning outcomes in online learning environment. Journal of Computer Assisted Learning, 29(3), 292–301.

[9] Lee, S. (2020). Proctorio CEO releases student's chat logs, sparking renewed privacy concerns. Retrieved January 8, 2024, from https://www.ubyssey.ca/news/proctorio-chat-logs/

[10] Linsey, J. S., & Becker, B. (2022). Effectiveness of brain writing techniques: comparing nominal groups to real teams. In: Design creativity pp. 165–171.

[11] Long, D., &Magerko, B. (2020). What is AI literacy? Competencies and design considerations. In: Proceedings of the 2020 CHI conference on human factors in computing systems pp. 1–16.

[12] Munif, A. (2017), investigating the E-readiness of subject supervisors to Adopt E-learning in the State of Kuwait. An unpublished Ph.D. Thesis submitted to the School of Education, Southampton University, UK.

[13] Obi- Nwosu, H., Okere, E., Nwafor, C., Agu, R. & Onyemaechi, C.I. (2017). An overview of the impact of new media on family dynamics. In J.O. Ezeokana, I.Dunu and C.E.Nwafor (ed).New Media and Capacity Building in Developing Economies.

[14] Onyemaechi, C.I, Unadike, M., Izuchukwu, C., Onwusobalu, P. & Umenweke, O. (2022). Internet Addiction and Its Psychological Wellbeing Correlate Among Undergraduates. Journal of Psychology and Behavioural Disciplines, Coou 2 (1)

[15] Onyemaechi, C. I. (2025). Economic Crises in Nigeria: A psychological perspective. Ojukwu Journal of Psychological Services 1(1), 1-10. https://doi.org/10.5281/zenodo.14764142

[16] Odua N.N, Umoh F.N & Ikogi R.I (2021), assessment of lecturers' readiness level on the use of e-learning platform in Tertiary Institutions in Bayelsa State. Journal of assertiveness 15(1), 98–108.

[17] Seo, K., Tang, J., & Roll, I. (2021).The impact of artificial intelligence on learner–instructor interaction in online learning.Int J EducTechnol High Educ 18, 54 https://doi.org/10.1186/s41239-021-00292-9