THE NIGERIAN EDUCATOR,
KABIR, Hauwa Ph.D; ABUBAKAR, Zainab; YUNUSA, Umar
Impact of Artificial Intelligence on Teaching and Learning in Colleges of Education in Kano State, Nigeria
Vol. 13, No. 1, May 2026, p94-101, ISSN: 699-3-7
https://www.thenigerianeducator.com/

IMPACT OF ARTIFICIAL INTELLIGENCE ON TEACHING AND LEARNING IN COLLEGES OF EDUCATION IN KANO STATE, NIGERIA

KABIR, Hauwa Ph.D
Department Of Curriculum and Instruction,
Sa'adatu Rimi College of Education, Kumbotso, Kano State
hauwakabirphd@gmail.com
08065281535,

ABUBAKAR, Zainab
Department Of Curriculum and Instruction,
Sa'adatu Rimi College of Education, Kumbotso, Kano State
zainababubakar@gmail.com
08067363164
&
YUNUSA, Umar
Department of Primary Education Studies
Sa'adatu Rimi College of Education, Kumbotso, Kano
08067632630

Abstract
Currently, teaching and learning has been shifted from traditional approach to modern approach due to globalization and influence of technology in day to day activities. Therefore, the application of artificial intelligence has become a fundamental key in transforming classroom activities that has generated educational reforms in Nigerian education system at all levels including tertiary education. This study seeks to examine the impact of the application of artificial intelligence in teaching and learning in Colleges of Education in Kano state. Three research objectives with corresponding research questions were raised to guide the study. A Descriptive Survey Design was employed involving three hundred and ninety (390) respondents (300 students and 90 lecturers) through multi stage sampling technique. A researcher's made structured questionnaires were used for data collection. The reliability coefficient was established using Cronbach's Alpha method and the value obtained was 0.84 and 0.81 respectively. Frequency counts, Mean and Standard Deviation were the statistical tools used to analyze the data. The results of the study revealed that insufficient funds, poor skills and competencies as well as epileptic power supply are the major challenges facing the application of artificial intelligence in teaching and learning in colleges of education. Therefore it is recommended among others, that education should be fully funded, while lecturers should be given sufficient training on how to apply artificial intelligence to enhance effective instructional delivery in the 21st century.

Introduction
It is evident in this 21st century that technology is an important issue in many fields including education. Learning is however, enhanced through the use of technology and that students need to develop technology skills in order to be productive members of the society. Technology integration entails effective implementation of artificial intelligence to accomplish intended learning outcomes. For this reason, providing a high-quality education includes the expectation that teachers use artificial intelligence effectively in their classroom and that they teach their students to use artificial intelligence in order to facilitate the acquisition of knowledge. Prasad (2016) indicated that the influence of artificial intelligence is felt in almost all the developed countries. There is a growing consensus that developing countries are also feeling the effect of

the artificial intelligence on every facet of their lives. Application of artificial intelligence in teaching and learning process assists educators to adapt to the changing trends in education. Parry and Battista (2019) opined that artificial intelligence help employees to update their skills to compete in the future world of work.

The application of artificial intelligence today, in teaching and learning process is no longer a choice but a need for educators considering the level of infusion of technology on education particularly as it relates to the changing learning environment, demand for flexibility in methodology, and the need to enhance creativity and innovations in learning, which is critical for successful achievement of the set teaching and learning objectives. The application of artificial intelligence has become so irresistible in the teaching and learning process, and it is changing the way teaching is structured and organized, and the job performance of educators. The adoption and usage of artificial intelligence assist educators and students to interact more outside the classroom, and to set up classes at any time and place. Artificial intelligence does not only simplify the teaching and learning process, but also improves the quality of contents, interactions, and teaching methods. Khajeh (2011), opined that Artificial Intelligence has become a critical resource because its absence can result in lack of knowledge, poor decisions and ultimately business failure.

Artificial Intelligence (AI) is a broad field encompassing various technologies that has been developed over the years to enable machines to perform tasks traditionally requiring human intelligence, such as perceiving, reasoning, learning and interacting. It is a branch of computer science that deals with the creation of intelligent machines that can perform tasks that typically require human intelligence (Adewale, 2019). To Izuagba (2020), Artificial Intelligence is the development of computer systems that can perform tasks that would typically require human intelligence such as visual perception, speech recognition and decision making. Artificial Intelligence is a multi-disciplinary field that combines computer sciences, mathematics and engineering to create intelligence machines that can interact with humans. It is a set of technologies that enables computers to perform a variety of advanced functions, including the ability to see, understand and translate spoken and written language, analyze data and make recommendations. Indeed, it is the science of making machines that can think like humans. In the context of this study, Artificial Intelligence is an evolving science of technology that tries to simulate human intelligence using machine and incorporating these intelligence into teaching and learning. In a nutshell, AI is a vast branch of computer science that concerned with developing intelligent computers capable of doing tasks that typically need human intelligence. Examples of AI include Siri, Alexa, self-driving cars, Robo-advisors, talking bots and email spam filters (Standford Encyclopaedia of Philosophy, 2020). AI represents a key component of scientific and technological advancement, reshaping societies and economies globally. It focuses on enhancing teaching and learning and promoting national development, elevating students' outcomes and streamlining the administrative task. In the view of Verma, (2018) AI is the intelligent machine and software capable of reasoning, learning, knowledge acquisition, communication, manipulation and perception that promote national development.

Application of Artificial Intelligence into educational system signifies a paradigm shift, presenting numerous opportunities for unprecedented advancement and upliftment of learning process efficiency and national development. Artificial Intelligence has become a transformative force in educational system as well as national development as education is the backbone for every national development. AI plays a vital role in revolutionizing school curriculum in all aspect of teaching and learning that capture the contents, elements, methods and expected outcomes together with the quality assessment approaches to meet the target of educational goals and national development. AI brought fundamental changes to the lives of 21st century learners, who are the most frequent users of AI and online service (OECD, 2016). According to Halverson and

Smith (2009) AI have always held great promise for transforming our teaching, thinking, and learning. The importance of AI and its applications as teaching and learning tools cannot be over-emphasized (Milovanovi, et al., 2013). According to Ahmad and Muhammad (2023), higher education is increasingly utilizing innovative approach like AI and more lecturers are embracing new technology for casual and formal teaching and learning.

Several empirical studies concerning Artificial Intelligence on teaching and learning as well as national development have emerged across various educational domains. Dacanay (2024) worked on reforming education, the global impact of integrating artificial intelligence in classroom environment and found that AI integration in classroom environment has the potentials of significantly enhancing students' learning outcomes, empowered adaptive learning platforms and the intelligent tutoring system, provides personalized instruction, differenciated learning experiences, addresses individual needs and learning styles, data driven decision making, enables teachers to make informed instructional choice based on students data analysis, facilitates collaborative learning, supportive and feedback process. While Ogunode and Ejike (2023), in their study application of Artificial Intelligence in curriculum implementation at post basic education and career development, revealed that AI assists in effective school management, lesson presentation, conducting of examination and online teaching and learning as well as aid in marking of students results and preparation for effective school security. Chin (2018), in his study education in the Artificial Intelligence era revealed that AI in present day reality imitates human in many function such as language translation, medical diagnosis and decision making as well as interacts, analyze, deduce, think logically and reason contextually by improving effective teaching and learning based on powerful computers, high speed internet connections and extensive real time data.

On the other hand, Onouha and Mfonobong (2024), conducted their study on lecturers' integration of AI in curriculum delivery in Abia state University, Nigeria and found out that lecturers utilized AI to a low extent in the University. The finding of their study revealed that lecturers encountered various challenges such as shortage of AI materials, low level of digital literacy, high cost of AI maintenance, inadequate training, insufficient AI facilities and infrastructure, inadequate funding, lack of internet connectivity and unstable power supply. In another study conducted by Ogunsoja and Adebayo (2016), on AI and education in Nigeria challenges and opportunities, the finding revealed that shortage of AI teachers, inadequate infrastructure and facilities, lack of sufficient instructional materials and sound AI curriculum were the major problems facing the development of teaching and learning with AI.

In teaching and learning process, technology lies at the core of the delivery of information to learners. The application of AI is a progressive step toward effective use of technology for the purposes of improving instruction and enhancing learning. Unfortunately, teachers find it particularly challenging, if not impossible, to apply AI when the technologies they would like to use are either not available or not easily accessible to them or their students (Ely, 1999). Even when schools have adequate access and awareness to AI, lecturers and students do not always use them for instructional purposes. The complex and dynamic nature of the teaching and learning process contributes to the difficulty of effective AI application. Most educational systems have the mindset to change the environment by creating one that is technology-infused. This is done in order to reflect the society we live in and, thereby, to raise good citizens who are capable of handling that technology-infused society. Artificial Intelligence is both directly and indirectly impacting education. As a result, it is important that lecturers at tertiary level of education adapt along with these changes in order to provide the best learning environment for their students within the world we live. It's against this backdrop this study seeks to find out the Impact of Artificial Intelligence in Teaching and Learning Process at Colleges of Education in Kano State, Nigeria. The main purpose of this study is therefore, to determine the Impact of Artificial Intelligence on

teaching and learning process at Colleges of Education in Kano State, Nigeria. Specifically, the objectives of the study are to; Examine whether students and teachers have awareness of Artificial Intelligence application in teaching and learning process; Find out the rate at which students and teachers utilize AI in teaching and learning process and also identify the challenges of the application of AI in teaching and learning process at Colleges of Education in Kano State, Nigeria. The following research questions guided the study.

1. Do lecturers and students have awareness of AI application in teaching and learning at Colleges of Education in Kano State, Nigeria?
2. To what extent do the students and lecturers utilize AI for teaching and learning at Colleges of Education in Kano State, Nigeria?
3. To what extent do students and lecturers face challenges in the application of AI in teaching and learning at Colleges of Education in Kano State, Nigeria?

Method

The study adopted Descriptive Survey Research design since the opinions of respondents were sought. Data were gathered through structured questionnaires. A total of three hundred and ninety (390) questionnaires were administered to respondents that consist of lecturers and students selected from three (3) selected Colleges of Education in the State. The sample size was drawn using multi stage sampling technique; purposive sampling was first employed to select three colleges of education (Sa'adatu Rimi College of Education, College of Preliminary Studies and Aminu Kano College of Islamic and Legal Studies) cluster sampling and simple random sampling technique were used in selecting departments and respondents. The instruments used for data collection were structured questionnaires; Students Impact of Artificial Intelligence in Teaching and Learning Questionnaire (SIAITLQ) and Lecturers Impact of Artificial Intelligence in Teaching and Learning Questionnaire (LIAITLQ). The questionnaires have two sections. Section A of the questionnaire was used to collect general information about the respondents. Section B of the questionnaire has 55 items intended to elicit responses on the Impact of the application of Artificial Intelligence in Teaching and Learning at Colleges of Education in Kano State. The first 40 items were structured on Modified four-point Likert rating scale of: Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE), and for the remaining 15 items were structured based on four point Likert type scale of Strongly Agree, Agree, Disagree and Strongly Disagree. and the questionnaires contain questions that were relevant to the achievement of the stated objectives.

The questionnaires were validated by experts in the field of Test and Measurement from Bayero University, Kano and Sa'adatu Rimi College of Education, Kumbotso. A pilot study was done for the study and a reliability coefficient value of 0.86 and 0.79 was obtained through the use of Cronbach Alpha method. The collected data were analyzed using descriptive statistics. An item with a calculated mean value of equal to or greater than 2.50 was accepted while item with mean value of less than 2.50 was rejected.

Results

Research Question One: Does lecturers and student have awareness on AI in teaching and learning at Colleges of Education in Kano State, Nigeria?

Table1: Mean and Standard Deviation scores of Respondents' awareness of AI in teaching and learning at Colleges of Education in Kano State.

S/N	Awareness of AI	Lecturers (N = 90)		Students (300)		Overall application (390)		
		X	SD	Decision	X	SD	Decision	X Dec

1. Personalized learning
2. Intelligent tutoring system
3. Automated Grading and feedback tools
4. Enhanced students analytics tools
5. Virtual Learning Environment tools
6. Natural language Processing
7. Teacher Support and Lesson Planning tools
8. Parental engagement and Communication tools
9. Adaptive learning platforms
10. Virtual mentoring Progress
11. Automatic attendance and Behavior tracking
12. AI Powered career assessment tools
13. Sentiment Analysis tools
14. AI-powered teacher evaluation tools
15. AI-driven educational games
16. AI-safety and security tools
18. AI-powered research and citation tools 19. virtual labs
20. Accessibility
21. virtual Debate and Discussion Platforms

Cluster mean

2.91 0.88 HE 2.89 0.69 HE 2.90 0.79 HE 1.96 0.91 LE 2.11 0.76 LE 2.04 0.84 LE

2.72 0.68 HE 2.51 0.88 HE 2.62 0.78 HE

3.01 0.66 HE 3.00 0.74 HE 3.01 0.70 HE

2.89 0.77 HE 2.76 0.81 HE 2.83 0.79 HE

2.10	1.01	LE	2.06	0.97	LE	2.08	0.99	LE
3.14	0.80	HE	2.99	0.75	HE	3.07	0.78	HE
2.88	0.73	HE	2.72	0.81	HE	2.80	0.77	HE
3.16	0.67	HE	2.98	0.77	HE	3.08	0.72	HE
2.66	0.86	HE	2.75	0.88	HE	2.71	0.87	HE
2.89	0.94	HE	2.94	0.74	HE	2.92	0.84	HE
2.78	0.87	HE	2.84	0.82	HE	2.81	0.85	HE
1.76	0.71	HE	2.01	1.02	LE	1.89	0.87	LE
3.21	0.69	HE	2.68	0.87	HE	2.95	0.78	HE
3.01	0.74	HE	2.61	0.68	HE	2.81	0.71	HE
2.86	0.81	HE	2.79	0.77	HE	2.83	0.79	HE
3.17	0.75	HE	2.98	0.87	HE	3.08	0.81	HE
2.68	0.94	HE	2.98	0.70	HE	2.73	0.82	HE
2.71	0.71	HE	2.66	0.80	HE	2.69	0.76	HE
2.66	0.68	HE	2.50	0.84	HE	2.58	0.76	HE
2.61	**0.79**	**HE**	**2.68**	**0.81**	**HE**	**2.65**	**0.80**	**HE**

Source: *Field Survey, 2026* The data on Table 1 shows that all the 20 items of respondents' awareness of AI had a mean values ranging from 2.04 to 3.08 with a grand mean value of (Mean = 2.65; SD = 0.80), indicating that the mean scores of 17 items exceed the acceptable mean of 2.50, while only 3 items has the mean of less than acceptable value (2.50). The cluster mean value (2.65) reveals that lecturers and students have awareness of AI, while the moderate standard deviation (0.80) suggests that responses were fairly consistent among respondents, with limited variation in their opinion. This implies that respondents positively have awareness of AI in teaching and learning process.

Research Question Two: To what extent do students and lecturers utilize AI tools for teaching and learning at Colleges of Education in Kano State?

Table 2: Mean and Standard Deviation of Lecturers' and Students' Utilization of AI for

Utilization of AI	Lecturers (N = 90)			Students (300)			Overall (390)		
	$\bar{X}$	SD	Decision	$\bar{X}$	SD	Decision	$\bar{X}$	SD	D
Personalized learning	3.20	0.89	HE	2.90	0.79	HE	3.05	0.84	HE
Intelligent tutoring system	2.91	0.85	HE	3.20	0.89	HE	3.06	0.87	HE
Automated Grading and feedback tools	2.96	0.89	HE	3.11	0.86	HE	3.04	0.88	HE
Enhanced students analytics tools	2.87	0.85	HE	3.27	0.77	HE	3.07	0.81	HE
Natural language Processing	3.06	0.75	HE	3.01	0.82	HE	3.04	0.79	HE
Teacher Support and Lesson Planning tools	2.62	0.89	HE	2.63	0.69	HE	2.63	0.79	HE
Parental engagement and Communication tools	1.58	1.00	LE	1.88	0.92	LE	1.73	0.96	LE
Adaptive learning platforms	2.91	0.88	HE	2.76	0.81	HE	2.84	0.85	HE
Virtual mentoring Progress	2.89	0.77	HE	2.51	0.88	HE	2.70	0.83	HE
Automatic attendance and Behavior tracking	2.90	0.68	HE	2.88	0.83	HE	2.89	0.76	HE
AI Powered carreer assessment tools	3.14	0.88	HE	3.01	0.70	HE	3.05	0.79	HE

teaching and learning at Colleges of Education in Kano State

Sentiment Analysis tools	3.28	0.72	HE	2.71	0.71	HE	2.99	0.72	HE
AI-powered teacher evaluation tools	2.70	0.83	HE	3.14	0.88	HE	2.92	0.86	HE
AI-driven educational games	3.00	0.90	HE	2.50	0.84	HE	2.75	0.87	HE
AI-safety and security tools	2.93	0.77	HE	2.63	0.69	HE	2.78	0.73	HE
AI-powered research and citation tools	1.76	0.81	LE	1.58	1.00	LE	1.67	0.91	LE
Virtual labs	2.71	0.71	HE	2.62	0.89	HE	2.67	0.80	HE
Accessibility	3.01	0.70	HE	2.93	0.77	HE	2.97	0.74	HE
Virtual Debate and Discussion Platforms	2.45	0.82	LE	2.43	0.94	LE	2.24	0.88	LE
Virtual Learning Environment	2.50	0.84	HE	2.51	0.81	HE	2.51	0.83	HE
Cluster Mean	**2.77**	**0.82**	**HE**	**2.70**	**0.82**	**HE**	**2.73**	**0.78**	**HE**

Source: *Field Survey, 2026*

The data on Table 2 shows that all the 17 items of respondents' view on the utilization of AI had a mean values ranging from 2.50 to 3.07 that exceed the acceptable value of 2.50 while only 3 items are below the acceptable value. In the same vein, the cluster mean value of the whole items (Mean = 2.73; SD = 0.78), indicating that the mean scores of all the 20 items exceed the acceptable mean of 2.50. The mean value (2.73) shows that all the AI tools are available and utilize by students and lecturers for teaching and learning process, while the moderate standard deviation (0.78) suggests that responses were fairly consistent among respondents, with limited variation in their opinion. This implies that respondents agree that all the items listed above are utilized for teaching and learning process.

Research Question Three: To what extent do students and lecturers face challenges of the application of AI in teaching and learning at Colleges of Education in Kano State?

Table 3: Mean and Standard Deviation of Respondents' view on challenges of the application of AI in teaching and learning at Colleges of Education in Kano State.

Items	Lecturers (N = 90)			Students (300)			Overall (390)		
	$\bar{X}$	SD	Decision	$\bar{X}$	SD	Decision	$\bar{X}$	SD	D Decision
Lack of technical expertise on AI applications	2.91	0.68	A	2.88	0.71	A	2.90	0.70	HE
Limited access to AI powered tools and resources	3.02	0.80	A	3.00	0.81	A	2.94	0.71	HE
Insufficient training and professional development	2.98	0.67	A	2.89	0.75	A	2.94	0.71	HE
Resistance to change about AI roles and in education	2.66	0.97	A	2.75	0.82	A	2.71	0.90	HE
Concerns about job replacement or diminished teachers roles	3.14	0.88	A	3.09	0.77	A	3.12	0.83	HE
Data privacy and security concerns	2.88	0.86	A	2.92	0.74	A	2.90	0.80	HE

Parental and community misinformation about AI in education	2.71	0.83	A	2.85	0.68	A	2.78	0.76	HE
Difficulty in measuring AI's impact on students' outcome	3.21	0.81	A	3.23	0.67	A	3.22	0.75	HE
Dependency on technology and potential technical issues	3.06	0.69	A	2.91	0.78	A	2.99	0.74	HE

Source: *Field Survey, 2026*

The data from the table above shows that all the 15 items of respondents' challenges of application of AI had a mean values ranging from 2.66 to 3.26 with a grand mean value of (Mean = 2.98; SD = 0.75), indicating that the mean scores of all the 15 items exceed the acceptable mean of 2.50. The mean value (2.98) indicates that lecturers and students have agreed that the items from the table are the challenges facing effective application of AI, while the moderate standard deviation (0.75) suggests that responses were fairly consistent among respondents, with limited variation in their opinion. This implies that all the 15 items listed are the challenges facing effective application of AI in teaching and learning process.

Discussion

Analysis on table 1 revealed the mean responses of lecturers and students in colleges of education level of awareness of AI in Kano state. The findings revealed that both lecturers and students have AI awareness to a high extent level that will promote effective teaching and learning in colleges of education. The findings is in line with Dacanay (2024), who found that teachers are aware of AI and that has potential of significant enhancing teaching and learning. The second findings revealed that both lecturers and students utilized AI to a high extent in colleges of education in Kano state. The findings correspond with the findings of Ogunode and Ejieke (2023), who found that students and teachers utilized AI at high extent despite other challenges. On the other hand, the findings is contrary with the findings of Onuoha-Chidiebere and Mfonobong (2024), who found that lecturers utilized AI to a low extent in universities.

The views of respondents on table three expressed serious concerns about several challenges that impede the successful application of AI in the teaching and learning process at Colleges of Education in Kano State. Some of the major challenges identified includes: Epileptic power supply, insufficient skills or expertise, funding, poor professional development, resistance to change, poor internet connections, and poor administrative support system. This finding agreed with the findings of Onuoha-Chidiebere (2024), and Ogunode and Ejike(2023); who identified them as impediments of effective utilization of AI. Moreover, the findings show that these challenges are closely connected and are surmountable through combination of efforts

by actors and stakeholders in education including educators, policy makers, curriculum planners, and students just to mention but a few.

Conclusion

Based on the findings of the study, it was concluded that, there are numerous challenges that limits the smooth application of AI in the teaching and learning process. The result affirms that the application of AI is increasingly significant and central to the achievement of teaching and learning objectives in the 21st century. The awareness of AI for both lecturers and students in the colleges of education does not automatically suggest that is applicable in teaching and learning. Learners must make conscious effort to apply AI resources available into their learning styles if only they want to benefit from the advantages these resources present. The use of AI is not a green card to academic excellence but how effective learners use it to learn. It is also evident that AI helps to modify outdated contents and methods used in the traditional teaching and learning process. Therefore, there is need to educate lecturers and students on effective use of AI to solve academic problems.

Recommendations

Based on the outcome of the study, the following recommendations were made:

1. Educational institutions should formulate flexible policies that would encourage the application of AI in teaching and learning process.
2. There should be a periodic training and retraining of academic staff to update their knowledge on learning technologies especially AI.
3. There is the need for both the lecturers and students to develop positive attitude towards the
   use of technologies especially AI
4. Educational institutions should ensure the provision of relevant infrastructures to facilitate the adoption and application of AI.
5. There should be an increased budgetary allocation for educational institutions to improve their capacity to acquire, implement, upgrade, and maintain AI and other technologies.

References

Adewale, A. A. (2019) Artificial Intelligence: A review of current trends and future prospects. *Nigerian Journal of Technology,38(1) 1-15*

Ahmad, A. and Muhammad, As. (2023) Promising Emerging Technologies for Teaching and Learning: *Recent Developments and Future Challenges, Sustainability* 15(8), 6917; https://doi.org/10.3390/su15086917.

Chin, R. T. (2018) Education in the Artificial Intelligence era. Q S WOWNEWS https: // qswownews.com/education-in-the-artificial-intelligence-era.

Dacanay, F.Y. (2024) Artificial Intelligence and implication in higher education. *Journal of Engineering Research and Application 10(1) 15-28*

Ely, D. P. (1999). Conditions that facilitate the implementation of educational technology innovations. *Educational Technology*, 39(6) pp. 23–27.

Halverson, R and Smith, A (2009) How New Technologies Have (and Have Not) Changed Teaching and Learning in Schools Journal of Computing in Teacher Education Volume 26/ Number 2 49-54

Izuagba, E.A. (2020) Artificial Intelligence and machine learning. A review of current research and application. *Journal of Engineering Research and Application 10(2) 1-18*

Khajeh, S., 2011. The Impact of Information Technology in Banking System (A Case Study in Bank Keshavarzi IRAN). Social and Behavioral cited by Jawad et al. (2014). Performance of Employees (A Case Study on Allied Bank Ltd, Pakistan). *World Applied Sciences Journal*, 29 (2): 271-276.

Milovanoviæ, M, Obradoviæ, J. & Milajiæ, A. (2013), "Application 0f Interactive Multimedia :Tools In Teaching Mathematics – Examples of Lessons from Geometry (2013)", Tojet: *The Turkish Online Journal of Educational Technology*, 12(1), 19-31.

OECD publishing, Paris http//dx.doi.orlio,17871102456c7cc. Retrieved August 10, 2019

Ogunode, N. J. & Ejike, C. N. (2023) Artificial Intelligence and curriculum implication in post basic education and career development, Journal of innovation in education and social research 1 (4), 50-59

Ogunsola, S. & Adebayo, O. (2016) Artificial Intelligence and education in Nigeria, challenges and opportunities, Journal of education and practice 7 (2)1-8

Onuoha-Chidiebere, U. & Mfonobong, E. J. (2024) lecturers integration of Artificial Intelligence in curriculum delivery in Abia State University, Nigeria, ABSU journal of curriculum and teacher education 4 (2) 68-79

Parry E and Battista V (2019). The impact of emerging technologies on work: a review of the evidence and implications for the human resource function. *Emerald Open Research*, 1(5): 1-13 (https://doi.org/10.12688/emeraldopenres.12907.1). Standford Encyclopaedia of Philosophy (2020) https://doi.org/10.13488/emeraldopenres.12907.1

Verma, A. N. (2016). Impact of Modern Technology on Higher Education Role of ICT in Language Teaching. Unpublished Paper: *Department of Collegiate Education,* Bangalore.

sagepub.com/base/download.xml