Maulana Advances in Inclusive Education

Vol. 1 No. 1 2025

ISSN: 3105-0107

Website : https://maulanapress.com/index.php/maulana

Artificial intelligence, academic staff job performance and students' academic performance in universities in Nigeria

Conrad Ugochukwu Ukozor

Department of Educational Management, University of Abuja, Nigeria

Article information

DOI : xxx

Correspondence : adilova_soliyaxon48@gmail.com

Submission Track

Submission : February 14, 2025
Final Review : February 28, 2025
Accepted : March 2, 2025
Available online : April 5, 2025

Keywords

Academic staff, AI, tertiary institutions, students

Abstract

This paper explores the transformative impact of artificial intelligence (AI) on academic staff job performance and students' academic achievement in Nigerian universities. As a review study, the research relies exclusively on secondary data obtained from a wide array of print and online sources, including peer-reviewed journals, institutional reports, and policy documents. The findings demonstrate that AI technologies, including intelligent tutoring systems, automated grading tools, and AI-powered research platforms, significantly improve the productivity, efficiency, and instructional quality of academic staff. Simultaneously, AI-driven learning tools, personalized content delivery, and adaptive assessment models have enhanced student engagement, learning outcomes, and academic performance. The paper also identifies the growing integration of AI in curriculum delivery, administrative support, and educational decision-making, thereby reinforcing the digital transformation of tertiary education in Nigeria. However, the study acknowledges the challenges of AI adoption, including inadequate digital infrastructure, low technological literacy, and limited policy frameworks guiding ethical AI usage. In response to these findings, the paper recommends strategic investments by both government and private sector actors in AI infrastructure across tertiary institutions. It also underscores the urgent need for targeted training programs to enhance the AI literacy of both lecturers and students, thereby maximizing the potential benefits of AI while ensuring equitable access and responsible usage. Ultimately, the study argues that embracing AI is crucial for positioning Nigerian universities as competitive, innovative, and inclusive institutions in the global knowledge economy.

INTRODUCTION

According to the FRN (2013), university education is expected to make optimum contribution to national development through the intensification and diversification of its programs for the development of high level human resources base within the context of the needs of the nation; make professional course contents to reflect Nigeria's national requirements; make all students, part of the general program of all-round improvement and to offer general study courses such as history of ideas, philosophy of knowledge and nationalism. Universities are expected to encourage and disseminate their research results to both the government and industry. Universities are expected to inculcate community spirit in their students through projects and action research. They are expected to ensure that faculty in their professional fields have relevant industrial and specialized experience.

The realization of universities' objectives depends on the availability of human and material resources, like technological tools. Technological tools include information communication technologies and artificial intelligence. Ogunode and Ukozor (2023) defined AI as programmes designed with human-like intelligence and structured in the form of computers, robots, or other machines to aid in the provision of any kind of service or tasks to improve the social, economic and political development of the society. Artificial Intelligence is an application or program constructed to carry out tasks with human-like intelligence. Frankenfield (2023) defined Artificial Intelligence (AI) as the simulation of human intelligence by software-coded heuristics. Artificial Intelligence is a branch of science producing and studying machines aimed at the stimulation of human intelligence processes. Artificial Intelligence can be defined in this paper as a machine programmed with the simulation of human intelligence that can solve complex problems. Artificial intelligence is a machine programmed with human intelligence that makes it mimic human capacities and solve complex problems. Artificial intelligence is a machine or computer system with the abilities and capacities to carry out complex tasks similar to human intelligence (Ogunode, Abdullahi, & Sani, 2024).

Universities are programmed to work with academic staff or faculty members as curriculum implementers. The academic staff are responsible for the implementation of the teaching programme, research programme and provision of community services. The academic staff are also saddled with the functions of providing academic services like supervision of projects, coordination of academic works (Ogunode 2025). Academic staff, as the name implies, are professionals who handle the teaching, research programmes of the higher institutions and also perform other academic services. The role of academic staff in the development of higher institutions cannot be underestimated because the academic staff are the implementers of instruction in the educational institutions (Musa 2020; Ogunode, Jegede & Abubakar, 2020).

Academic staff job performance is the total performance of teaching, researching, and community services responsibilities that an academic staff carries out in the institutions where he or she work at a particular time. Academic staff job performance is the general record of tasks carried out by academic staff to be compared to the assigned responsibilities and functions given to them. Academic staff job performance can also be seen as the measurement of specific and general tasks given to faculty in an institution, and they are expected to carry them out within a specific timeline (Ogunode 24 et al; Muhammed, 2024). Ogunode, ThankGod and Olatunde-Aiyedun (2022) stated that the academic staff's job performance constitutes all activities and functions it is expected of an academic to execute within a specific time. Academic staff job performance refers to the summation of all official responsibilities executed by a lecturer in a higher institution. Academic staff job performance is the degree and extent to which a lecturer carries out the official tasks and functions in the department or faculty (Ogunode, 2025).

University students are regarded as the first critical component in the academic environment because, without the students, there wouldn't be higher institutions. The students are learners in higher institutions, and their academic performance is important to the stakeholders in the institutions. Academic performance, according to Bello (2006), means all things a learner achieves or acquires during and after undergoing some academic activities. He went further to state that the things a learner gains can be in the form of marks obtained from a test or an examination, new skills, new techniques, and behaviour acquired. Bello identified some factors that might affect the academic performance of learners, such as lack of learning and teaching materials, learners' parents' attitude, level of poverty of the learners' parents, learners' experience, and the conduciveness of the environment, as well as teachers' poor attitude to work. Student academic performance refers to the standard which students should be able to know and be able to do (Ijaiya, 2004).

Foster and Young (2004) conceptualized student academic performance as the parameter for determining the worth and carrying capacities of the students. Additionally, as pointed out by Oloyede (2008), the level of academic skill necessary for successful entry into the present day job market, with or without a university education, has risen to the point that a focus on achieving academic success is necessary for all students throughout every year of schooling from nursery/primary to the university level. Ricarda, Anja and Anne (2017) note that academic performance represents achievement outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in instructional environments, specifically in school, college, and university.

Many factors influence both academic staff job performance and students' academic performance in the institutions. Such factors include artificial intelligence (Ogunode, Iyabode & Olatunde-Aiyedun, 2022). Education is a fundamental pillar of any society, as it equips individuals with the knowledge, skills and competencies needed to thrive in an ever-changing world (Tavares et al., 2023). Over the years, advancements in technology have played an important role in shaping various fields, and the education sector is no exception. Integrating artificial intelligence (AI) into the classroom has emerged as a promising approach to revolutionizing education systems worldwide. AI, commonly known as artificial intelligence, involves the development of computer systems capable of performing tasks that normally require human intelligence. These tasks include, but are not limited to, speech recognition, visual perception, problem solving, and decision making. As AI technology advances, its potential applications in education are becoming increasingly apparent. By harnessing the capabilities of AI, educators can enhance their learning experience, personalize instruction, and provide timely feedback to students. It is important to examine the impact of AI on academic staff job performance and students' academic performance in tertiary institutions in Nigeria.

This study aims to determine the impact of artificial intelligence on academic staff job performance and students' academic performance in universities in Nigeria. The specific objectives include;

1. To find out the impact of artificial intelligence on academic staff job performance.
2. To find out the impact of artificial intelligence on students' academic performance.

METHODS

This paper discussed the impact of artificial intelligence on academic staff job performance and students' academic performance in universities in Nigeria. The study used secondary data. The content analysis method was adopted for the selection of data. The data were collected from the following sources: review of published articles from reputable international journals such as CEON, Elsevier, Hindawi, JSTOR, IEEE, Learn Techlib, SAGE, Nebraska and Springer, amongst others (Adapted from Ogunode & Ndayebom, 2023).

RESULT AND DISCUSSION

Impact of artificial intelligence on academic staff job performance

Teaching is the first cardinal programme of the university system. Teaching is defined as the practical implementation of a school curriculum to improve the abilities and capacities of learners. Teaching is important in the university system because it leads to the realization of the university's objectives. Teaching in universities can be done in two major ways, namely, traditional means of teaching and virtual means of teaching. The traditional or physical means of teaching is characterized by teachers' centered and offline, while the virtual is carried out via online and distance learning (Ogunode et al, 2024; Smith, 2021; Smith, 2022). Teaching involves

the delivery of the lesson, preparation of lesson notes, supervision of students' projects, grading of students' examinations and management of students' data (Ogunode & Olowonefa, 2023; Sharma, Tomar, Bhardwaj & Sakalle, 2021). Artificial intelligence can help lecturers in Nigerian universities implement the new Core Curriculum and Minimum Academic Standards (CCMAS).

The teaching programme is a core programme of tertiary institutions and is very critical to the attainment of tertiary education. The teaching programme covers the preparation of lecture notes, presentation of lectures, assessment of students' academic programmes via tests and examinations, marking of students' scripts, preparation of students' results, integration of resources into lecture presentations and classroom management (Ayeni & Nwaorgu, 2018). These entire things that constitute teaching programmes can be easily done by the deployment of Artificial Intelligence. The inability of the relevant agency of government to deploy AI to aid teaching and learning can result in what scholars refer to as a failure of structure (like the government) not to perform its expected role, which leads to negative consequences (Joseph, Cinjel & Ayeni, 2017).

In the area of research, which is another critical area of academic staff jobs in universities, AI has a lot of opportunities to offer both the students, researchers and academic staff who are involved constantly in the conduct of research. This is because tertiary education is believed to focus more on research, among other things (Ogunode, Ayeni, & Ogwuche, 2024). AI tools have been developed to assist students in carrying out research without much stress. AI has offered academic staff many tools to help them come up with research topics and design methods for the conduct (Ogunode and Gregory, 2023; Oztok, & Zingaro, 2019; Singh, & Singh, 2021). Kundariya (2023) noted that AI has simplified research processes and learning, making the education process easier for students and scholars.

Impact of artificial intelligence on students' academic performance

Bordia (2023) concluded that educational institutions can use AI-powered chatbots to provide uninterrupted learning to students. As chatbots are available, students can use them to resolve doubts in real-time. Westagilelabs (2022) and Uy, Sasan, & Kilag (2023) observed that tutoring programs or intelligent tutoring systems (ITS) based on artificial intelligence are equipped to handle personalized feedback and instructions for one-on-one teaching. However, they cannot replace teachers since they are not advanced enough to teach how a human can. They can help in scenarios where human tutors are not available for small lessons that can be taught and evaluated online. It can be an effective tool in e-learning platforms to teach languages, geography, circuits, medical diagnosis, computer programming, mathematics, physics, genetics, chemistry, etc. They are designed to factor in engagement, metrics for grading and comprehension. Additionally, AI can aid in the development of intelligent tutoring systems that provide immediate feedback and guidance to students, even outside the classroom. Intelligent tutoring systems leverage AI algorithms to assess student progress, identify misconceptions, and offer targeted interventions or resources to address gaps specific learning. These systems can tailor their instruction in real time, providing personalized pathways for each student's academic growth (Saxena, Saxena, Pandey, Flato, & Shukla, 2023).

Educators can use the power of AI to personalize learning, automate administrative tasks, create rich learning experiences, and deliver intelligent learning systems. One of the primary advantages of integrating AI in the classroom is its potential to personalize instruction. AI-powered tools and platforms can adapt to individual students' needs, learning styles, and progress, providing tailored recommendations and interventions. For example, adaptive learning algorithms can analyze students' performance data to identify areas of strength and

weakness, enabling educators to deliver targeted interventions and personalized support (Muñoz, Ojeda, Jurado, Peña, Carranza, Berríos, & Vasquez-Pauca, 2022). This personalized approach promotes student engagement, motivation, and academic success. AI integration facilitated personalized learning experiences by tailoring instruction to individual student abilities and preferences. Intelligent algorithms analyzed student data and provided adaptive feedback, suggesting targeted learning materials and activities. This personalized approach allowed students to learn at their own pace and focus on areas where they needed additional support. Consequently, students demonstrated improved comprehension, retention, and mastery of academic content. Integrating Artificial Intelligence in the classroom has a positive impact on student learning outcomes. The use of AI technologies enhances student engagement, personalization, and real-time feedback, leading to improved academic performance (Borbajo, Malbas, & Dacanay, 2023; Tavares, Azevedo, Marques, & Bastos, 2023).

Students of tertiary institutions also conduct research. Research conduct is one of the requirements for graduation in the final year. AI have assisted students in carrying out research in the various institutions across Nigeria. Brock (2023) and Ogunode, Idoko and ThankGod (2024) noted that AI helped many undergraduate and post-graduate students to analyze their data. Bilal (2023) and Poth (2023) observed that AI supported the students in searching for research topics, reviewing their literature and supporting the students in data collection. Khedkar (2023) observed that researchers can use AI tools for writing a research grant, a book, or even academic journal articles. Some AI-powered tools can help researchers to edit their articles and use grammatically correct English. Analyzing data from the experiments conducted is an important aspect of research. AI-powered data analysis tools can help researchers analyze data more efficiently and make the process free of any bias. Researchers can save hundreds of hours by using AI tools that can read complex papers and summarize them. Researchers can also make use of AI tools for citing literature and keeping their sources organized. AI-powered research tools for reading, annotating, and note-taking can make the process of acquiring knowledge considerably more efficient. Such tools can provide the user with excerpts from the literature source, with the most relevant information highlighted, and help one decide whether an article is worth reading. This can help the user quickly locate relevant information in research articles, determine which paragraphs to read in-depth and compile notes on the subject. To use such an AI-powered tool most effectively for research, the users should critically assess the output without accepting it as "the truth" and read the original text instead of simply relying on AI-generated summaries. To use AI tools effectively for creating experimental design models, researchers must design models that take a wide range of variables and parameters into account. By inputting specific criteria into such models, researchers can generate optimal designs that maximize their study effectiveness.

Based on this, the paper recommends that both government and private institutions should invest heavily in developing and upgrading AI infrastructure facilities within tertiary institutions. Such investments should include the provision of high-performance computing systems, AI laboratories, intelligent classroom technologies, and access to licensed AI software and platforms. This infrastructural support is essential to integrate AI seamlessly into teaching, research, and administrative processes. In addition, training programs should be systematically organized for both lecturers and students to enhance their AI literacy and technical competencies. These programs should cover not only the theoretical foundations of artificial intelligence but also its practical applications in academia, such as data analysis, natural language processing, machine learning, and automated assessment tools. By equipping academic staff and students with relevant AI skills, institutions can foster innovation, improve educational delivery, and prepare graduates for the demands of an increasingly digital and AI-driven global workforce.

Long-term collaboration with industry partners and international AI research centers is also recommended to ensure sustainability and alignment with global best practices of the global.

CONCLUSION

This paper examined the impact of artificial intelligence on academic staff job performance and students' academic performance in universities in Nigeria. The paper established that artificial intelligence enhances academic staff job performance and students' academic performance. AI supported both lecturers and students to carry out their academic functions in tertiary institutions. It enabled lecturers to automate routine administrative tasks, personalize instruction, and access intelligent research tools, thereby improving productivity and instructional quality. For students, AI facilitated adaptive learning, access to virtual tutors, and immediate feedback, all of which contributed to improved learning outcomes. The findings of this study underscore the transformative potential of AI in reshaping higher education in Nigeria. However, to fully harness these benefits, stakeholders must address existing challenges such as inadequate infrastructure, limited digital literacy, and regulatory gaps. Ultimately, a strategic and inclusive approach that prioritizes investment in AI technologies, continuous capacity building, and policy support is vital to ensuring that Nigerian universities remain competitive and responsive to the evolving demands of global education.

REFERENCES

Bello, O. T. (2006). *Relationship between teachers' disciplinary styles and students' academic performance in Ilorin East local government area secondary schools, Kwara State* [Master's thesis, University of Ilorin]. Unpublished.

Bilal, M. (2023). The best AI tools to power your academic research. *Euronews*. https://www.euronews.com/next/2024/01/20/best-ai-tools-academic-research-chatgpt-consensus-chatpdf-elicit-research-rabbit-scite

Borbajo, N. M., Malbas, M. H., & Dacanay, L. R. (2023). Reforming education: The global impact of integrating artificial intelligence in the classroom environment. *American Journal of Language, Literacy and Learning in STEM Education*, *1*(05), 16–27.

Bordia, D. (2023). How is AI used in education and academics? *Teachmint Blog*. https://blog.teachmint.com/how-is-ai-used-in-education-academics

Brock, T. (2023). The 5 best AI tools for teachers that help optimize the learning process. *iSpring Blog*. https://www.ispringsolutions.com/blog/ai-tools-for-teachers

Copeland, B. J. (2022). Artificial intelligence. *Encyclopaedia Britannica*. https://www.britannica.com/technology/artificialintelligence

Federal Republic of Nigeria. (2013). *National policy on education* (6th ed.). NERDC Press.

Foster, R., & Young, J. (2004). Leadership: Current themes from the educational literature. *The C.A.P. Journal*, *2*(12), 29–30.

Ijaiya, N. Y. S. (2004). Agents of examination malpractice in Nigerian public examinations: The strongest links. *Nigerian Journal of Educational Research and Evaluation*, *5*(1), 55–62.

Khedkar, S. (2023). Using AI-powered tools effectively for academic research. *Editage Insights*. https://www.editage.com/insights/using-ai-powered-tools-effectively-for-academicresearch

Laskowski, N. B., & Tucci, L. (2023). Artificial intelligence (AI). *TechTarget*. https://www.techtarget.com/searchenterpriseai/definition/AI-Artificial-Intelligence

Muñoz, J. L. R., Ojeda, F. M., Jurado, D. L. A., Peña, P. F. P., Carranza, C. P. M., Berríos, H.

Q., & Vasquez-Pauca, M. J. (2022). Systematic review of adaptive learning technology for learning in higher education. *Eurasian Journal of Educational Research*, *98*(98), 221–233.

Ogunode, N. J. (2025). Benefit of digital literacy for academic staff and students of tertiary institutions in Nigeria. *American Journal of Alternative Education*, *2*(2), 43–53.

Ogunode, N. J., Abdullahi, A., & Sani, K. (2024). Core curriculum and minimum academic standards (CCMAS) implementation in Nigerian universities: Roles of artificial intelligence. *American Journal of Technology Advancement*, *1*(2).

Ogunode, N. J., Agbade, O. P., & Bassey, U. O. (2023b). Barriers to effective usage of artificial intelligence in tertiary institutions in North-Central Nigeria. *Web of Semantics: Journal of Interdisciplinary Science*, *1*(1), 38–43.

Ogunode, N. J., Edinoh, K., & Chinedu, O. R. (2023). Artificial intelligence and tertiary education management. *Electronic Research Journal of Social Sciences and Humanities*, *5*(IV), 18–31.

Ogunode, N. J., Gregory, D. M. (2023). Artificial intelligence (AI) in educational administration. *International Journal on Orange Technologies*, *5*(10), 7–16.

Ogunode, N. J., Idoko, G., & ThankGod, P. (2024). Artificial intelligence and implementation of educational administration and planning programme in Nigerian tertiary institutions. *International Journal of Academic Integrity and Curriculum Development*, *1*(1), 41–47.

Ogunode, N. J., Iyabode, A. E., & Olatunde-Aiyedun, T. G. (2022). Community service programme of Nigerian public tertiary institutions: Problems and the way forward. *Spanish Journal of Innovation and Integrity*, *5*, 1–9.

Ogunode, N. J., Olowonefa, J. A. (2023). AI education in Nigerian schools. *International Journal of Human Computing Studies*, *5*(10), 47–55.

Ogunode, N. J., ThankGod, P., & Olatunde-Aiyedun, T. G. (2022). Impact of supervision on teachers' job performance in secondary schools in Nigeria. *International Journal of Inclusive and Sustainable Education*, *2*(11), 33–44. https://inter publishing.com/index.php/IJISE/article/view/2852/2427

Ogunode, N. J., & Ukozor, C. U. (2023). Curriculum revolution in higher education: The mighty role of artificial intelligence. *International Journal of Innovation and Narrative Studies*. https://ijins.umsida.ac.id/index.php/ijins/article/view/971/1183

Oloyede, O. A. (2008). *Leadership strategies, discipline and student academic achievement in public and private secondary schools in Kwara State Nigeria* [Doctoral dissertation, University of Ilorin]. Unpublished.

Oztok, M., & Zingaro, D. (2019). *Artificial intelligence in education*. Springer.

Poth, D. R. (2023). 7 AI tools that help teachers work more efficiently. *Edutopia*. https://www.edutopia.org/article/7-ai-tools-that-help-teachers-work-more-efficiently/

Ricarda, S., Anja, M., & Anne, F. (2017). Academic achievement. *Oxford Bibliographies*. http://www.oxfordbibliographies.com/view/document/obo-9780199756810/obo-9780199756810-0108.xml

Saxena, P., Saxena, V., Pandey, A., Flato, U., & Shukla, K. (2023). *Multiple aspects of artificial intelligence*. Book Saga Publications.

Sharma, U., Tomar, P., Bhardwaj, H., & Sakalle, A. (2021). Artificial intelligence and its implications in education. In *Impact of AI technologies on teaching, learning, and research in higher education* (pp. 222–235). IGI Global.

Singh, V., & Singh, A. (2021). Role of artificial intelligence in educational management. *Journal of Education and Practice*, *12*(12), 78–85.

Smith, J. (2021). Applications of AI in educational management. *International Journal of Educational Technology in Higher Education*, *18*(1), 1–17. https://doi.org/10.1186/s41239-021-00279-9

Smith, J. (2022). Applications of artificial intelligence in educational management. *Educational Technology Research and Development*, *70*(2), 457–478. https://doi.org/10.1007/s11423-022-09981-1

Tavares, M. C., Azevedo, G., Marques, R. P., & Bastos, M. A. (2023). Challenges of education in the accounting profession in the Era 5.0: A systematic review. *Cogent Business & Management*, *10*(2), 2220198.

Uy, F. T., Sasan, J. M., & Kilag, O. K. (2023). School principal administrative-supervisory leadership during the pandemic: A phenomenological qualitative study. *International Journal of Theory and Application in Elementary and Secondary School Education*, *5*(1), 44–62.

Westagilelabs. (2022). How artificial intelligence (AI) is transforming education: 8 cutting-edge applications. https://www.westagilelabs.com/blog/8-applications-of-artificial-intelligence-in-education/