



Artificial Intelligence and Implementation of Educational Administration and Planning Programme in Nigerian Tertiary Institutions

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Abstract: Objectives: This paper delves into the impact of artificial intelligence on the implementation of educational administration and planning programs in Nigerian tertiary institutions.

Methods: Content analysis serves as the adopted methodology for this paper. Utilizing both secondary and primary data, sourced from national and international dailies, published and unpublished papers, articles, and reference materials, the data substantiates the raised points.

Findings: Artificial intelligence contributes to the implementation of educational administration and planning programs in Nigerian tertiary institutions. Specifically, it was revealed that artificial intelligence effectively supports the implementation of teaching and research in educational administration and planning programs in Nigerian tertiary institutions. Furthermore, it aids in enhancing students' learning experiences within the mentioned programs at the tertiary level.

Conclusion: The paper concludes that artificial intelligence plays a pivotal role in aiding the implementation of teaching and research in educational administration and planning programs. Additionally, it contributes to effective student learning within these programs in tertiary institutions in Nigeria.

Recommendations: Both the federal and state governments are urged to augment funding for tertiary institutions. This financial support aims to facilitate the acquisition of additional artificial intelligence resources, enhancing their deployment for teaching in educational administration and planning programs within tertiary institutions.

Keywords: Artificial Intelligence, Educational Administration and Planning Programme, Tertiary Institutions.

Introduction

Educational Administration and Planning programs represent a structured educational initiative strategically tailored for delivery within tertiary institutions, with the overarching goal of cultivating adept professional planners and administrators. As elucidated by Ogunode and Babatunde (2022), the conceptualization of the Educational Administration and Planning program positions it as an integral educational offering within the faculty of Education. Positioned at the intersection of education and management sciences, this program plays a pivotal role in shaping the educational landscape within the majority of Nigerian higher institutions.

The Educational Administration and Planning program is dedicated to the production of effective and efficient educational planners and administrators across all levels and forms of education,

contributing significantly to the development of the education sector. Ogunode, Jegede & Olumide (2020) highlighted the introduction of educational administration and planning into Nigerian higher institutions with the specific objective of generating qualified educational administrators and planners for all facets of the country's educational landscape. Situated within tertiary institutions, the Educational Administration and Planning program serves as a driving force for the holistic development of manpower in diverse educational domains, placing a distinct emphasis on the intricate spheres of educational planning and administration. This academic pursuit underscores a commitment to nurturing skilled professionals capable of navigating the intricate complexities of educational systems, thus making substantial contributions to the advancement of educational practices and frameworks within the Nigerian context.

Offered as a distinct program within various Nigerian universities, educational administration and planning is presented as a structured departmental offering. Additionally, it is available as an elective course at the 400 level. The program adopts the nomenclature "Bachelor of Arts Education" (B.A [Ed]) with a focus on Educational Administration and Planning. The program spans four academic sections, requiring a minimum of 148 credit units for graduation. Admission requirements into the program necessitate five credits at SSCE, GCE 'O' Level, NECO, and NABTEB, including English Language, Mathematics, and three other relevant credit passes. Furthermore, candidates must successfully pass the Unified Tertiary Matriculation Examination (UTME) and the university's post UTME screening test to secure admission into the 100 level.

The objectives of educational administration and planning in Nigerian Higher institutions according to Ogunode, Jegede & Olumide (2020) include; to raise an educational administrators and planners who are confidence, independence, efficient, visionary and innovative and problem solving in the educational sectors; to create in students the awareness and enthusiasm for educational administration and planning; to generate in students an appreciation of the importance administration and planning in education, economic, technological and social context; to provide students with the knowledge and skill-base for further studies in projection, forecasting, statistics, micro-planning, data management and demography; and to provide a broad and balance foundation, knowledge and practical skills in educational administration and planning.

The realization of objectives of educational administration and planning in Nigerian tertiary institutions depends on the availability of human resources and material resources. Artificial intelligence is one of the materials resources that can be deployed for implementation of educational administration and planning in Nigerian tertiary institutions. Artificial intelligence aims for the computer to simulate the intelligence processes that occur within the human mind so that the computer has the ability to solve problems and make decisions in a logical and orderly manner in the same way as the human mind thinks, and to represent accounting programs and improve the basic relationship between its elements.

In response to the evolving dynamics of the contemporary age and the ongoing trends in measuring and managing quality, there arises a pressing need to heighten interest and focus on quality-related concepts. This imperative stems from the desire to align with the data-centric nature of this era and modern approaches to assessing and managing quality. The focus extends beyond merely evaluating the attributes of graduates to encompass the quality of elements within the educational service delivery at the institutional level, encompassing directional, cognitive, skill, and behavioral properties.

In light of these considerations, the present paper seeks to evaluate the influence of artificial intelligence on the implementation of educational administration and planning programs in Nigerian tertiary institutions. The study formulates three specific objectives:

- i. To investigate the impact of artificial intelligence on the teaching of the educational administration and planning program curriculum in Nigerian tertiary institutions.

- ii. To assess the influence of artificial intelligence on research within the educational administration and planning program in Nigerian tertiary institutions.
- iii. To examine the effects of artificial intelligence on the learning experiences of students within the educational administration and planning program.

To guide this investigation, three research questions have been articulated:

1. Does artificial intelligence exert an influence on the teaching of the educational administration and planning program curriculum in Nigerian tertiary institutions?
2. To what extent does artificial intelligence contribute to research endeavors within the educational administration and planning program in Nigerian tertiary institutions?
3. What impact does artificial intelligence have on the learning experiences of students within the educational administration and planning program?

Literature Review

Artificial Intelligence (AI), defined by AFSA (2022), Copeland (2023), Alagbe (2023), and Ogunode & Ukozor (2023), encompasses computer systems and technologies that emulate human intelligence, undertaking tasks like learning, reasoning, and problem-solving. These technologies, including machine learning and robotics, have diverse applications across sectors such as health care, finance, transportation, and education, holding the potential to revolutionize industries and create new opportunities for advancement.

The multifaceted nature of AI programming, highlighted by Laskowski & Tucci (2023), is characterized by cognitive skills such as learning, reasoning, self-correction, and creativity. Learning involves acquiring data and creating algorithms for actionable information, while reasoning focuses on choosing the right algorithm for desired outcomes. Self-correction ensures continual refinement of algorithms for optimal accuracy, and creativity employs various AI techniques to generate novel outputs like images, text, music, and ideas. This emphasis on cognitive skills reflects the dynamic and evolving nature of AI's contribution to diverse applications, constantly refining algorithms to meet the demands of an ever-changing landscape.

Ogunode, Okolie, and Chinedu (2023) highlighted the pivotal role of Artificial Intelligence (AI) in tertiary institution management, emphasizing its contribution to effective administration, implementation of teaching programs, enhancement of student learning, and facilitation of examination processes. AI is identified as a valuable tool for supporting virtual learning, refining research program development, optimizing community service programs, managing data effectively, enhancing security, and improving staff attendance in tertiary institutions.

The present study seeks to assess the impact of employing artificial intelligence techniques on the outcomes of higher education within Business Administrative Colleges in the specific universities under investigation, constituting the research community. The sample comprises 130 academic respondents from these universities. The research findings affirm a statistically significant effect of utilizing artificial intelligence techniques, such as expert systems and neural networks, in enhancing the outputs of higher education in the Business Administrative Colleges under scrutiny. The study concludes that AI technologies play a crucial role in identifying graduates capable of spearheading modernization and professional development across various work domains. Furthermore, these technologies contribute to the continuous improvement and development of graduates' skills in the labor market, equipping them with new competencies to effectively fulfill their responsibilities.

Zarrouqi and Falta's (2020) study delves into the role of artificial intelligence (AI) in enhancing the quality of higher education. The findings underscore that academic programs leveraging AI not only expand opportunities for self-education among students but also empower them to actively participate

in the educational process, moving beyond the traditional role of passive information recipients in conventional classroom settings.

Anbar and Muhammad's (2016) study focuses on demonstrating the impact of AI technology on improving the performance and documentation of audit work. The study introduces an electronic program designed to conduct electronic audit tasks, encompassing planning, sample collection and selection, and culminating in the generation of draft reports. The aim is to positively influence the audit profession and assess the expected impact of AI technology in enhancing audit quality.

Al-Bashtawi and Al-Baqmi's (2015) study aims to elucidate the influence of applying expert systems on electronic audit procedures, emphasizing their role in increasing the efficiency of such procedures. The study concludes that implementing expert systems in commercial banks necessitates maintaining the security of assets and files containing crucial information, thereby mitigating human and material risks associated with service provision procedures.

Study of Al-Sarhani, (2013), which aimed to identify international and international standards for total quality and their impact on achieving excellence for Arab universities, including universities in the Kingdom of Saudi Arabia; The results of the study showed that Saudi universities obtain academic accreditation through their application of comprehensive quality standards that enable them to reach distinguished academic outputs capable of meeting the needs and requirements of the Saudi community and the local market. Also, A study of Helmy, (2012) aimed at examining the effect of applying artificial neural networks in discovering fundamental errors in the financial statements of industrial companies registered in the stock exchange. Financial data.

Methods

Content analysis was adopted for the paper. Both secondary and primary data were used in the paper to support points raised. The data were sourced from national and international dailies, published, unpublished papers and articles and reference materials.

Discussion of Findings

Does Artificial Intelligence influence teaching of educational administration and planning programme curriculum in Nigerian tertiary institutions?

Artificial intelligence influences teaching of educational administration and planning programme curriculum in Nigerian tertiary institutions. This submission is confirmed by Smith, (2022) and Smith, (2021) that maintained that artificial intelligence aid effective implementation of teaching programme in tertiary institutions. Westagilelabs (2022) 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. Ogunode and Gregory (2023) Noted that AI can be applied to aid delivery of lecture or implementation of teaching programme in educational institutions.

Does Artificial Intelligence influence researches in educational administration and planning programme in Nigerian tertiary institutions?

Artificial intelligence aids lecturers, students and researchers to carry out researches in educational administration and planning programme in Nigerian tertiary institutions. This assertion is reaffirmed by Ogunode & Ukozor (2023), and Xiaolin Xia & Li Xiaojun (2022) who claimed that

artificial intelligence is used to conduct researches in tertiary institutions. Ogunode, Agbade & Bassey, (2023) and Oztok, & Zingaro (2019) submitted that artificial intelligence can use in all aspects research work. It can be used in literature review, selection of theoretical framework, data analysis, data computation and interpretation. 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 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.

Does Artificial Intelligence have impact on students of educational administration and planning learning?

Artificial intelligence aids students learning in tertiary institutions. Artificial intelligence aid student's collaboration learning and distance learning education. Borbajo, Malbas, & Dacanay, (2023) discovered that AI technologies facilitate collaborative learning experiences among students. Virtual collaborative platforms, intelligent chatbots, and AI-based discussion forums enable students to engage in collaborative problem-solving, peer feedback, and knowledge sharing. AI tools can also assist in the formation of student groups based on complementary skills or learning needs. This integration of AI promotes collaboration, communication, and critical thinking skills, enhancing the overall learning experience. The integration of AI technologies in education facilitates personalized instruction and differentiated learning. AI-powered adaptive learning platforms and intelligent tutoring systems analyze student data and provide tailored learning experiences. These technologies adapt instructional content, pacing, and feedback based on individual student needs and learning styles. As a result, teachers can better address the diverse needs of their students, offering customized instruction and support. Also, Namboodiri, (2022) submitted that the integration of AI in the classroom holds significant implications for educational reform. AI technologies have the potential to transform traditional education systems from a one-size-fits-all approach to personalized and adaptive learning environments. This shift can lead to improved learning outcomes, increased student engagement, and greater equity in education.

Findings:

The findings of this research unequivocally demonstrate that artificial intelligence (AI) significantly contributes to the successful implementation of educational administration and planning programs in Nigerian tertiary institutions. Specifically, the study reveals that AI plays a pivotal role in enhancing the implementation of teaching and research within these programs, leading to more effective student learning experiences in educational administration and planning at the tertiary level.

Conclusion and Recommendations:

In conclusion, the evidence presented in this study strongly supports the assertion that artificial intelligence serves as a crucial catalyst in the implementation of teaching and research activities

within educational administration and planning programs in Nigerian tertiary institutions. Moreover, the positive impact extends to the realm of student learning, where AI technologies contribute to creating more effective and engaging learning experiences. As such, the integration of artificial intelligence emerges as a valuable asset in advancing the landscape of educational administration and planning programs in the tertiary institution context in Nigeria.

Based on these findings, it is recommended that educational institutions in Nigeria consider further exploration and integration of artificial intelligence technologies to enhance teaching, research, and student learning within educational administration and planning programs. Additionally, stakeholders and policymakers should prioritize initiatives that facilitate the effective adoption and implementation of AI in tertiary education, ensuring its seamless integration for the benefit of both educators and students.

References

- Al-Bashtawi, S., & Al-Baqmi, M. (2015). The effect of applying expert systems in commercial banks on electronic auditing procedures from the point of view of external certified accountants: A comparative study in the Hashemite Kingdom of Jordan and the Kingdom of Saudi Arabia. *The Jordanian Journal of Business Administration*, 11(1), 117-151.
- Abu Naser, S. S., & Al Shobaki, M. J. (2016). Enhancing the use of Decision Support Systems for Re-engineering of Operations and Business: Applied Study on the Palestinian Universities. *Journal of Multidisciplinary Engineering Science Studies (JMESS)*, 2(5), 505-512.
- AFSA. (2022). Artificial intelligence and education. Retrieved June 22, 2023, from <https://www.theschoolleader.org/news/artificial-intelligence-and-education>
- Al-Sarhani, A. bin F. (2013). International and global standards for comprehensive quality and their impact on achieving academic excellence for universities (Naif Arab University for Security Sciences as a model). In *The Role of Excellence and Leadership in the Excellence of Business Organizations* (pp. 1-11). International Islamic Sciences University.
- Alagbe, J., Awodele, O., & Ayorinde, I. (2021). Is Nigeria ready for Artificial Intelligence in schools? <https://punchng.com/is-nigeria-ready-for-artificial-intelligence-in-schools/>
- Bojorquez, H., & Vega, M. M. (2023). Importance of artificial intelligence in education for all students. <https://www.idra.org/resource-center/the-importance-of-artificial-intelligence-in-education-for-all-students/>
- 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*, 01(05), 16-27.
- Copeland, B. J. (2022). Artificial Intelligence. <https://www.britannica.com/technology/artificial-intelligence>
- Helmy, A. G. (2012). Using Artificial Neural Networks to Discover Fundamental Errors in Financial Data. In *Business Intelligence and Knowledge Economy* (pp. 1-10). Al-Zaytoonah University.
- Language magazine (2023). Importance of artificial intelligence in education for all students. <https://www.languagemagazine.com/2023/05/31/the-importance-of-artificial-intelligence-in-education-for-all-students/#:~:text=AI%20can%20also%20help%20teachers,to%20reach%20their%20full%20potential>

- Laskowski, N. B., & Tucci, L. (2023). Artificial intelligence (AI). <https://www.techtarget.com/searchenterpriseai/definition/AI-Artificial-Intelligence>
- Ogunode, N. J., & Ukozor, C. U. (2023). Curriculum revolution in higher education: the mighty role of Artificial Intelligence. *International Journal on Orange Technologies*, 5(10), 7-16. <https://ijins.umsida.ac.id/index.php/ijins/article/view/971/1183>
- Ogunode, N. J., Agbade, O. P., & Bassey, U. O. (2023). Barriers to Effective Usage of Artificial Intelligence in Tertiary Institution in North-Central, Nigeria. *Web of Semantics: Journal of Interdisciplinary Science*, 1(1), 38–43. <http://web.semanticjournals.org/index.php/wos/article/view/13>
- Ogunode, N. J., Gregory, D. M. (2023). Artificial Intelligence (AI) in Educational Administration. *International Journal on Orange Technologies*, 5(10), 7-16. <https://journals.researchparks.org/index.php/IJOT/article/view/483>
- Ogunode, N. J., Jegede, J., & Ogunode, O. (2020). An Investigation into Problem Facing the Teaching and Learning of Educational Administration and Planning. *International Journal of Teaching & Education*, 3(1), 1-6.
- Ogunode, N. J., & Babatunde, A. F. (2022). Challenges facing teaching and learning of educational administration and planning programme in Nigerian higher institutions and way forward. *International Journal of Culture and Modernity*, 7, 77-83.
- Ogunode, N. J., Okolie, K. E., & Chinedu, R. (2023). Artificial intelligence and tertiary education management. *Electronic Research Journal of Social Sciences and Humanities*, 5(4), 18-31.
- Oztok, M., & Zingaro, D. (2019). Artificial intelligence in education. Springer.
- 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>
- 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/>
- Xiaolin Xia, & Li Xiaojun (2022). Artificial Intelligence for Higher Education Development and Teaching Skills. *Wireless Communications and Mobile Computing*, 1-10.
- Zarrouqi, R., & Falta, A. (2020). Role of Artificial Intelligence in improving the quality of higher education. *Arab Journal of Specific Education*, 4(12), 1-11.