Didee Publications International Journal, Vol. 1, Issue 3, April 2026.pp. 441-456

ISSN 3121- 7974

PRINCIPALS ADOPTION OF ARTIFICIAL INTELLIGENCE (AI) FOR HUMAN RESOURCE MANAGEMENT IN SECONDARY SCHOOLS IN ENUGU STATE

[1]UMEH, MAUREEN UZOCHUKWU

[2]DR. COLUMBUS OKEY OGBUABOR

[1]Department of Educational Management, Faculty of Education
Peaceland University, Enugu Enugu State, Nigeria.

[2]Department of Educational Foundations and Administration, Federal College of Education, Eha-Amufu, Enugu State, Nigeria.
Corresponding Author: **maureenu62@gmail.com**

Abstract

This study examined principals' adoption of Artificial Intelligence (AI) for human resource management in secondary schools in Enugu State. Two research questions and two null hypotheses guided the study. The researcher adopted descriptive survey research design for this study. The population for the study was drawn from the two hundred and ninety-five (295) principals in Enugu State public secondary schools, excluding vocational and technical schools. Census sampling was used since the population was manageable. The instrument for data collection was a structured questionnaire developed by the researcher titled: "Principals Adoption of Artificial Intelligence (AI) for Human Resource Management Questionnaire (PAAIHRMQ)." The instrument was face-validated by three research experts, and had overall reliability of 0.76 which was ascertained with Cronbach Alpha. The research questions were answered with mean and standard deviation while the hypotheses were tested with z-test at 0.05 level of significance. The findings of the study were that the extent of adoption of AI for human resources data management by principals in secondary schools in Enugu state is low, while the extent of adoption of AI for effective communication among human resources by principals in secondary schools in Enugu State is high. It was recommended that efforts should be made to adopt and integrate AI for data management by principals of secondary schools as it facilitates proper and accurate data management. Moreso, the adoption of AI for effective communication should be strengthened beyond what is obtainable presently as to sustain its efficacy.

Key words: Principal, Artificial Intelligence, Human Resource Management

Introduction

Human Resource Management (HRM) has to do with gaining and developing a workforce which is talented, to help an institution achieves its goals, as well as its mission, vision and different objectives. Also, HRM is an approach to employee management with the aim of retaining a workforce which is both capable and committed by different techniques, such as cultural, structural and personnel to bring the organization a competitive advantage (Johansson & Herranen, 2019).

HRM practices include recruiting new employees as well as managing and developing employees. Most of these practices have a specific focus on retaining new employees and keeping up their satisfactory level. This is because human resources are such a dynamic part of an institution and is ever changing; therefore, it needs the right management by an institution (Bibi, Pangil & Johari, 2016). Johansson and Herranen (2019) aver that the role that HRM have within an institution has changed significantly and are no longer just used as a way to manage an institution's internal costs of labour. This is applicable in all sectors, including the education system.

In the education system, particularly, secondary schools, human resources are widely considered as parts of the most valuable assets (Markoulli, Lee, ElizaByington, & Felps, 2017), and successful management of this asset by principals is a crucial managerial duty for achieving sustainable success and attaining educational objectives (Armstrong, 2016). In HRM, updated technology is essential to manage and solve tasks successfully, as well as to enhance or at least maintain teachers' performance (Bataineh, 2017). One of the most recent technologies having higher potential in HRM is Artificial Intelligence (AI) (Bhardwaj, Singh, & Kumar, 2020).

The leap into the fourth industrial revolution brought about drastic and dramatic changes and development, especially in the area of technology. These changes led to several innovations like Artificial Intelligence (AI). According to Vázquez-Cano (2021), Artificial Intelligence is the ability of machines to adapt to and deal with new situations, solve problems, answer questions, device plans, and perform various other functions that require some level of intelligence typically evident in human beings. Wang and Lin (2018) see AI as a trained machine which is able to mimic human intelligence and perform like a human.

In many areas, including HRM, AI has expanded to robotics, processing of natural language, expert systems and automated reasoning. AI can be implemented and take place in many different forms. For example, it can be as a machine, robot, computer program or software (Ved, Kaundanya & Panda, 2016). Furthermore, according to Ved et al. (2016)

there are five different main areas of implementation of AI which are; interpretation of language, machine perceptions, problem solving, robotics and games.

AI in HRM is a human-computer interaction function that enhances management efficiency to improve the functional procedure for collecting, maintaining and validating data of employees (Bhardwaj, Singh, & Kumar, 2020). It is also a form of HRM software that is able to generate strategies based on data to simplify the management of the human resource department (Bataineh, 2017). Lengnick-Hall, Neely and Stone (2018) asserted that organizations can take advantages of AI in recruiting by designing job description, and afterwards collecting and analysing candidate data from several sources.

AI technologies such as smart software, cloud technology and digitalization have already changed methods of running departments in almost every organization, including HRM area in the education system. Artificial intelligence (AI) is facilitating the implementing of big data analysis, machine and deep learning in increasing HRM efficiency (EY, 2020). Considering the aforementioned managerial roles, recent developments such as machine learning, big data analysis, data mining, and learning analytics have much to offer to ease principals' administrative and managerial burdens (Fullan et al., 2023; Umkabu, 2023). So, this study, specifically, examined the adoption of AI in human resources data management and effective communication among human resources by principals.

In the area of human resources data management, AI tools enable the processing of diverse and large sets of data that cannot be processed by human effort and intelligence alone (Berkat et al., 2024). Through gathering, analyzing, and assessing large datasets, AI-based big data management can extract actionable knowledge and viable patterns from data by employing a variety of technologies and tools, such as statistical analysis, data mining, data visualization, text analytics, social network analysis, signal processing, and machine learning' (Luan et al., 2020).

AI can assist principals in analyzing large volumes of data, such as student performance data, attendance records and

resource allocation. AI-powered systems can identify patterns, trends and insights that can inform decision-making processes in the school (AFSA, 2022). Principals can use this information to develop data-driven strategies for managing staff, improving student outcomes, allocating resources effectively and evaluating teaching and learning. In addition to human resources data management, AI can also aid effective communication among human resources in the education system.

The emergence of artificial intelligence (AI) has resulted in a substantial revolution in the field of communication (Ateeq, Milhem, Alzoraiki, Dawwas, Ali & Yahia Al Astal, 2024). In today's digital world, proficient communication is crucial for the success of many activities, including commercial operations, educational pursuits, and personal connections. Aulia et al. (2024), effective communication is essential for accomplishing objectives, establishing connections, and maintaining the proper operation of institutional and social systems.

Farhi et al. (2022) averred that AI has the potential to sustain effective communication within educational institutions through the mediation of a two-way communication perspective with the benefits which are enhancing communication effectiveness, reducing communication gaps, and facilitating collaboration. Al can aid effective communication in schools between principals, teachers, students, stakeholders, parents, communities, etc. (Niyi & Gregory, 2023). Principals can utilise Chatbots and virtual assistants to handle routine inquiries, provide information and direct staff to the appropriate resources. This can improve efficiency and accessibility in communication, freeing up time for the principal to undertake more complex interactions and strategic decision making.

Generally, the use of AI in education administration helps in effective human resource management. Microsoft Education Team (2025) noted that on the global scale, the adoption of AI in education administration is accelerating significantly as recent reports indicate that about 86% of educational organisations are now using generative AI**,** making education one of the sectors with the highest AI adoption rates. Ogbuoka, Cyrus,

Okere and Obizue (2025) stated that in this era of technological advancement, the integration of AI into educational frameworks has become a pivotal strategy in transforming teaching and learning processes leading to overall advancement in the school management strides. Obizue and Obizue (2018) observed that schools in Nigeria are increasingly exploring and leveraging the potentials of AI to general administrative processes; hence, the system will gradually improve in efficiency, accuracy, decision-making and quality.

So, the use of AI in human resource management in secondary schools, though not popular and prominent, has the capabilities to facilitate result-oriented human resource management. AI can reduce time expended on clerical or paper work tasks, produce accurate information, ensure generation of reports when needed, and facilitate decision-making process. In spite of the perceived impact of AI in human resource management, there are questions about the readiness and capabilities of principals to embrace it in their administrative tasks. Though, there is a growing literature on AI, few studies have focused precisely on its influence on human resource management in secondary schools. It is against this backdrop that the researcher in this study examined the adoption of AI in human resource management by principals of secondary schools in Enugu state.

Statement of Problem

The limited nature of human abilities makes it herculean to keep up with all the tasks that are necessary as it usually requires lots of dedicated time from every individual. The problem that has been identified is that there are human limitations, such as biases, preconceptions and time restraints, which can hinder effective human resource management. It has been identified that adopting technology-based (AI) human resource management is lacking in secondary schools in Nigeria, generally, and Enugu State in particular. Literature is lacking in AI-based human resource management in secondary schools and this needs to be fulfilled. In addition, the implications of AI for HRM in secondary schools are still unclear. Principals of secondary schools require accurate, timely, sufficient, and relevant data and information to carry out their

duties. The deficiencies associated with data management in terms of storage, preservation and presentation of large volumes of information in paper form made managerial processes very cumbersome. Also, communicating effectively with staff and other stakeholders is imperative for proper management. This makes AI-based management system by principals for human resources a very crucial component of modern human resource management in secondary schools.

Purpose of the Study

Generally, this study examines the adoption of Artificial Intelligence (AI) for human resource management by principals of secondary schools in Enugu State.

Specifically, this study sought to:

1. ascertain the extent to which AI is adopted for human resources data management by principals of secondary schools in Enugu State.
2. determine the extent to which AI is adopted for effective communication among human resources by principals of secondary schools in Enugu State.

Research Questions

The following research questions guided the study:

1. What is the extent to which AI is adopted for human resources data management by principals of secondary schools in Enugu State?
2. What is the extent to which AI is adopted for effective communication among human resources by principals of secondary schools in Enugu State?

Hypotheses

$H_0$1 There is no significant difference in the mean scores of male and female principals on the extent to which AI is adopted for human resources data management by principals of secondary schools in Enugu State.

$H_0$2 There is no significant difference in the mean scores of male and female principals on the extent to which AI is adopted for effective communication among human resources by principals of secondary schools in Enugu State.

Methodology

Descriptive survey research design was used for the study. The area of study is Enugu State. The population for the study consists of all the two hundred and ninety-five (295) principals of the government owned secondary schools in Enugu State, comprising of one hundred and eighty-six (186) male principals and one hundred and nine (109) female principals. Census sampling was used since the population is manageable; therefore, there was no sampling. The instrument for data collection is a researcher-made questionnaire titled: "Principals Adoption of Artificial Intelligence for Human Resource Management Questionnaire (PAAIHRMQ)." The instrument consisted of two parts, the first part covers instructions on how to respond to the items as well as collect demographic information of the respondents, while the second part consists of 20 items divided into two clusters according to the research questions. Four-point scale made up this response options. They are VGE – Very Great Extent (4); GE – Great Extent (3); LE – Low Extent (2), and VLE – Very Low Extent (1). The instrument was face validated by three research experts. One research expert in Measurement and Ealuation from the Department of Mathematics and Computer Education and two research experts from Department of Educational Management all from Faculty of Education, Peaceland University, Enugu. The validity of the instrument was conducted by administering 20 copies of the questionnaire to principals in selected secondary schools in Anambra state. The reliability index was determined using Cronbach Alpha, it yielded 0.79 and 0.81 from the two clusters respectively. The overall reliability index is 0.78 which shows that the instrument is reliable for the study. The instrument was distributed by the researcher directly to the respondents. The research questions were answered using mean with standard deviation while the hypotheses were tested using z-test statistics. The decision for interpreting the results were based on the values of calculates Means. Responses on each of the research questions were considered high and accepted when the Mean is 2.50 and above and low and rejected when less. This is derived from the mean of the weight of the response options, i.e. (4+3+2+1)/4=10/4 = 2.5. The hypotheses

were tested at 0.05 level of significance. If the calculated value is equal to or greater than the table value, the null hypotheses was rejected, but if it is less than the table value, the null hypotheses was rejected.

Results

Research Question 1

What is the extent to which AI is adopted for human resources data management by principals of secondary schools in Enugu State?

Table 1: Means scores of male and female principals on the extent to which AI is adopted for human resources data management

S/NO	ITEMS	Male (186)		Female (109)		Total 295		
	What is the extent to which AI is adopted for:	**X**	**SD**	**X**	**SD**	**X**	**SD**	**Dec.**
1	staff rostering	2.51	0.71	2.90	1.07	2.77	0.97	GE
2	keeping student records	2.20	0.63	2.45	0.51	2.37	0.56	LE
3	managing curriculum records	2.26	0.79	2.35	0.75	2.31	0.75	LE
4	facilitating easy access to school records	1.82	0.79	2.35	0.59	2.17	0.70	LE
5	prompt retrieval of required records	2.40	0.92	2.10	0.72	2.25	0.79	LE
6	data-driven decision-making	2.10	0.74	2.30	0.66	2.23	0.68	LE
7	integrating data sources	2.30	0.48	2.50	0.51	2.43	0.50	LE
8	data categorization based on predefined criteria	2.43	0.63	2.00	0.65	1.93	0.64	LE
9	streamlining data retrieval	2.50	0.53	2.15	0.58	2.27	0.58	LE
	Cluster mean	**2.28**	**0.69**	**2.34**	**0.67**	**2.30**	**0.69**	**LE**

Table 1 above shows the mean scores of male and female principals on the adoption of artificial intelligence (AI) for human resources data management in secondary schools in Enugu State. The respondents' means ranged from 1.82 to 2.51 with a cluster mean of 2.28 and a standard deviation of 0.69 for male principals, while those of female principals ranged from 2.00 to 2.90 with a cluster mean of 2.34 and standard deviation of 0.67. Both groups recorded similar responses in all the items. The overall cluster mean of 2.30 and standard deviation of 0.69 indicates that there is low extent of adoption of AI for human resources data management by principals of secondary schools in Enugu State. Apart from staff rostering, principals do not utilise AI for other data management tasks in their human resource management activities.

Research Question 2

What is the extent to which AI is adopted for effective communication among human

resources by principals of secondary schools in Enugu State?

Table 2: Means scores of male and female principals on the extent to which AI is adopted for effective communication among human resources

S/NO	ITEMS	Male (186)		Female (109)		Total 295		
	What is the extent to which AI is adopted to:	**X**	**SD**	**X**	**SD**	**X**	**SD**	**Dec.**
10	ensure free flow of information among all staff	2.15	0.57	2.27	0.95	2.20	0.83	LE
11	provide information when required as to avoid misinformation	2.02	0.82	2.18	1.01	2.10	0.94	LE
12	deliver information directing staff members to appropriate resources	2.40	0.74	2.35	0.95	2.38	0.87	LE
13	communicate with staff and parents	2.44	0.89	2.25	1.10	2.35	1.01	LE
14	streamline interactions with parents, teachers, and staff for improved collaboration	2.10	0.85	2.29	1.19	2.20	1.08	LE
15	foster a more connected school community through communication	2.47	0.42	2.27	0.92	2.37	0.79	LE
16	Issue queries	2.38	0.79	2.40	0.82	2.39	0.82	LE
17	proactively deliver relevant information for improved communication effectiveness	2.26	0.52	2.17	0.80	2.22	0.71	LE
18	customize communication with each staff	2.40	0.70	2.15	0.95	2.28	0.86	LE
19	ensure prompt feedback	2.15	0.82	2.06	0.94	2.11	0.88	LE
	Cluster mean	**2.28**	**0.71**	**2.24**	**0.96**	**2.26**	**0.88**	**LE**

Table 2 above shows the mean scores of male and female principals on the adoption of artificial intelligence (AI) for effective communication among human resources in secondary schools in Enugu State. The respondents' means ranged from 2.02 to 2.44 with a cluster mean of 2.28 and a standard deviation of 0.71 for male principals, while those of female principals ranged from 2.06 to 2.40 with a cluster mean of 2.69 and standard deviation of 0.96. Both groups recorded similar responses in all the items. The overall cluster mean of 2.70 and standard deviation of 0.88 indicates that there is high extent of adoption of AI for effective communication among human resources by principals of secondary schools in Enugu State. AI is adopted by principals to ensure free flow of information among all staff, provide information when required as to avoid misinformation, deliver information directing staff members to appropriate resources, communicate with staff and parents, streamline

interactions with parents, teachers, and staff for improved collaboration, foster a more connected school community through communication, issue queries, proactively deliver relevant information for improved communication effectiveness and to ensure prompt feedback.

Hypotheses

Hypothesis 1

$H_0$1 There is no significant difference in the mean scores of male and female principals on the extent to which AI is adopted for human resources data management by principals of secondary schools in Enugu State.

Table 3: t-test of difference in mean ratings of male and female principals on the use of AI in HR data Management

Group	N	X	SD	Df	z-cal	z-crit	Decision
Male	186	2.28	0.69				
				293	0.73	1.96	Do not reject $H0_1$
Female	109	2.34	0.67				

Table 3 shows the z-value for the difference in male and female principals on the extent to which AI is adopted for data management by principals of secondary schools in Enugu State. The result showed that the calculated z-value (0.73) was less than the critical value (1.96). Hence, the null hypothesis was not rejected. Therefore, there is no significant difference between the mean ratings of male and female principals on the extent to which AI is adopted for human resources data management by principals of secondary schools in Enugu State.

Hypothesis 2

$H_0$2 There is no significant difference in the mean scores of male and female principals on the extent to which AI is adopted for effective communication among human resources by principals of secondary schools in Enugu State.

Table 3: t-test of difference in mean ratings of male and female principals on the use of AI for effective communication

Group	N	X	SD	Df	z-cal	z-crit	Decision
Male	186	2.28	0.71				
				293	0.38	1.96	Do not reject $H0_2$
Female	109	2.24	0.96				

Table 4 shows the z-value for the difference in male and female principals on the extent to which AI is adopted for effective communication among human resources by principals of secondary schools in Enugu State. The result showed that the calculated z-value

(0.38) was less than the critical value (1.96). Hence, the null hypothesis was not rejected. Therefore, there is no significant difference between the mean ratings of male and female principals on the extent to which AI is adopted for effective communication among human resources by principals of secondary schools in Enugu State.

Discussion

The finding of the study indicated that there is low extent of adoption of AI for human resources data management by principals of secondary schools in Enugu State. The respondents were of the views that Apart from staff rostering, principals do not utilise AI for other data management tasks in their human resource management activities. Principals of secondary schools in Enugu State are still lagging behind in the use of AI for human resources data management; meanwhile, AI is very effective in human resources data management as it makes data management related tasks very easy and accurate.

This assertion agrees with the submission of Zhang (2024) who posited that by utilizing these innovative technologies (AI) such as data mining, machine learning, GenAI, and learner analytics, principals can identify patterns, trends, relationships and anomalies in data on students, teachers, curriculum, and assessment. Also, AFSA (2022) noted that AI can assist administrators in analyzing large volumes of data, such as student performance data, attendance records and resource allocation.

The findings of the study also showed that there is low extent of adoption of AI for effective communication among human resources by principals of secondary schools in Enugu State. The respondents submitted that AI is not adopted by principals to ensure free flow of information among all staff, provide information when required as to avoid misinformation, deliver information directing staff members to appropriate resources, communicate with staff and parents, streamline interactions with parents, teachers and staff for improved collaboration, foster a more connected school community through communication, issue queries, proactively deliver relevant information for improved communication effectiveness and to ensure prompt feedback.

This finding opposes the submission of Farhi et al. (2022) who averred that AI has the potential to sustain effective communication within institutions and organisations through the mediation of a two-way communication perspective with the benefits which are enhancing communication effectiveness, reducing communication gaps, and facilitating collaboration. Also, the finding disagrees with Florea and Croitoru (2025) who asserted that AI is an essential tool for automating and optimizing communication processes, allowing employees to focus on strategic and creative tasks rather than getting lost in repetitive activities like managing emails or processing feedback. These findings explain some of the crisis being witnessed in secondary schools in Enugu State. Most of these crisis usually border on human resource management and breakdown in communication. Meanwhile, most of the principals assume that the traditional methods of communication are adequate for the school system, neglecting the technological advancement that is remodeling human interaction. This gap in communication, needs to be addressed for effective management of secondary schools in Enugu State.

Conclusion

This study confirms that AI is crucial and significant in human resource management for human resources data management and effective communication. The findings emphasize the general significance of human resources data management and effective communication techniques in integrating AI. The application of Al in human resource management can lead to effective data analysis, effective communication, proper school administration, resource optimization, student support and intervention, streamlined communication and engagement and enhanced security and safety. The real need of implementing AI for human resource management comes handy because AI software provides avenue for proficient human resources data management, productive communication, and overall improved human resource management practices.

Recommendations

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

i. Principals of secondary schools and education stakeholders should take seriously the adoption of AI in human resources data management and leverage its potentials for keeping student records, managing curriculum records, facilitating easy access to school records, ensure prompt retrieval of required records, engage in data-driven decision-making, and streamlining data retrieval.

ii. Effort should be made by principals to improve on the use of AI for effective communication among human resources, especially in the areas of customize communication with each staff issue queries and customizing communication with each staff.

REFERENCES

AFSA (2022) *Artificial Intelligence and education.* https://www.theschoolleader.org/news/artificial-intelligence-and-education

Armstrong, M. (2016). *Handbook of strategic human resource management*. London: Kogan Page.

Ateeq, A., Milhem, M., Alzoraiki, M., Dawwas, M. I. F., Ali, S.A., & Yahia Al Astal, A. (2024). The impact of AI as a mediator on effective communication: enhancing interaction in the digital age. Front. *Hum. Dyn. 6*, 1467384.

Aulia, M. R., Junaidi, E., & Hendrayani, R. (2024). The development of the partnership program and business performance: In terms of communication behavior and social networks of MSMEs. *J. Syst. Manag. Sci. 14*, 159–174.

Bataineh, K. A. (2017). The impact of electronic management on the employees' performance. *Journal of Management and Strategy, 8*(5), 86-100. https://doi.org/10.5430/jms.v8n5p86

Berkat, B., Alexandro, R., & Basrowi, B. (2024). Utilization of big data and artificial intelligence on quality education management and its implications on school sustainability. International *Journal of Data and Network Science, 8*(3), 1895-1906. https://doi.org/10.5267/j.ijdns.2024.1.023

Bhardwaj, G., Singh, S., & Kumar, V. (2020). An empirical study of artificial intelligence and its impact on human resource functions. *International Conference on Computation, Automation and Knowledge Management* (pp. 1-5). Amity University. https://doi.org/10.1109/ICCAKM46823.2020.9051544

Bibi, P., Pangil, F., & Johari, J. (2016). HRM practices and employees' retention: the perspective of job embeddedness theory. *Asian Journal of multidisciplinary study*, 4(5), 41-47.

EY. (2020, March 01). *The new age: artificial intelligence for human resource opportunities and functions.* https://www.ey.com/Publication/vwLUAssets/EY-the-new-age-artificial-intelligence-for-human-resource-opportunities-and-functions/$FILE/EY-the-new-age-artificial-intelligence-for-human-resource-opportunities-and-functions.pdf

Farhi, F., Jeljeli, R., & Belarbi, A. (2022). Artificial intelligence in sustaining

internal communication in corporate sector: The mediation of two-way communication perspective of PR. *2022 International Arab Conference on Information Technology (ACIT)*. https://doi.org/10.1109/acit57182.2022.9994146

Florea, N. V., & Croitoru, G. (2025). The impact of artificial intelligence on communication dynamics and performance in organizational leadership. *Administrative Sciences, 15*(2), 33. https://doi.org/10.3390/ admsci15020033

Fullan, M., Azorín, C., Harris, A., & Jones, M. (2023). Artificial intelligence and school leadership: challenges, opportunities and implications. *School Leadership & Management*, 1-8. https://doi.org/10.1080/13632434.2023.2246856

Gerlich, M. (2024b). Public anxieties about AI: Implications for corporate strategy and societal impact. *Administrative Sciences, 14*(11), 288.

Gobert, J., Yang, S. J., Ogata, H., & Tsai, C. C. (2020). Challenges and future directions of big data and artificial intelligence in education. *Frontiers in Psychology, 11*, 580820. https://doi.org/10.3389/fpsyg.2020.580820

Johansson, J., & Herranen, S. (2019). The application of artificial intelligence (AI) in human resource management: Current state of AI and its impact on the traditional recruitment process. *Thesis.* Jonkoping University.

Lengnick-Hall, M. L., Neely, A. R., & Stone, C. B. (2018). Human resource management in the digital age: Big data, HR analytics and artificial intelligence. In P. N. Melo, & C. Machado, *Management and technological challenges in the digital age* (pp. 13-42). US: CRC Press. https://doi.org/10.1201/9781351238922-1

Markoulli, M., Lee, C. I., ElizaByington, H., & Felps, W. A. (2017). Mapping human resource management: Reviewing the field. *Human Resource Management Review, 27*(3), 367-396. https://doi.org/10.1016/j.hrmr.2016.10.001

Microsoft Education Team. (2025). *AI in education report: Insights to support teaching and learning*. https://www.microsoft.com/en-us/education/blog/2025/08/ai-in-education-report-insights-to-support-teaching-and-learning/?utm_source=chatgpt.com

Nilsson, N. J. (2014). *Principles of artificial intelligence.* California: Morgan Kaufmann.

Niyi, J. O., & Gregory, D. M. (2023). Artificial intelligence (AI) in educational administration. *International Journal on Orange Technology, 5*(10), 7-16. https://journals.researchparks.org/index.php/IJOT

Obizue, E.C. & Obizue, M.N. (2018).Politics of digitalisation of education in Nigeria: Programme accreditation for quality assurance in Nigerian tertiary education. *Journal of African Research Scholars, 4*(2), 211-226.

Ogbuoka, O. M., Cyrus, S. N., Okere, R. N., & Obizue, E. C. (2025). Artificial intelligence and effective school management in Nigeria. *International Journal of Education, Research and Scientific Development, 8*(1), 158-172.

Umkabu, T. (2023). The impact of supervisory management and service-learning pedagogy on the development strategy of junior high schools. *Journal of Pedagogical Research, 7*(5), 223–236. https://doi.org/10.33902/jpr.202323857

Vázquez-Cano, E. (2021). Artificial intelligence and education: A pedagogical challenge for the 21st century. *Educational Process*

International Journal, *10*(3), 7-12. https://dx.doi.org/10.22521/edupij.2021.103.1

Ved, S., Kaundanya, N. S., & Panda, O. P. (2016). Applications and current achievements in the field of artificial intelligence. *Imperial Journal of Interdisciplinary Research*, *2*(11), 932-936.

Wang, C. H., & Lin, H. C. K. (2018). Constructing an affective tutoring system for designing course learning and evaluation. *J. Educ. Comput. Res. 55*, 1111–1128. doi: 10.1177/0735633117699955

Wang, W., & Siau, K. (2019). Artificial intelligence, machine learning, automation, robotics, future of work and future of humanity: A review and research agenda. *Journal of Database Management*, *30*(1), 61-79. https://doi.org/10.4018/JDM.2019010104

Zhang, Z. (2024). Innovative teaching strategies for aesthetic arts in higher education institutions based on big data technology. *Applied Mathematics and Nonlinear Sciences*, *9*(1), 1–17. https://doi.org/10.2478/amns.2023.2.00170