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SCHOOL LEADERS' PREPAREDNESS FOR ARTIFICIAL INTELLIGENCE-DRIVEN EDUCATIONAL REFORMS

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Abstract
This study investigated the preparedness of school leaders to adopt artificial intelligence (AI)-driven educational reforms in public secondary schools in Enugu State. Specifically, the study sought to: (1) determine the level of awareness school heads have regarding AI-driven reforms; and (2) assess the capacity of these leaders to adopt such reforms. The study was guided by two research questions. Descriptive survey research design was adopted for the study. The population of the study comprised all the public secondary school principals and vice principals in Enugu State, totaling approximately 642 school leaders. A stratified random sampling technique was used to select 210 respondents from the three senatorial zones of the state. A validated structured questionnaire titled "AI Reforms Preparedness Inventory (AIRPI)" was used to collect data for the study. Data were analyzed using frequencies, percentages, mean and standard deviation. The findings showed that school leaders were aware of AI-driven educational reforms in public secondary schools in Enugu State. The findings further revealed that school heads articulate clear vision, possess sufficient technical knowledge, effectively communicate the benefit of AI-driven reform to teachers and allocate necessary resources for AI-driven reforms. Based on the findings of the study, it was recommended that State education board should regularize the organization of compulsory AI leadership training for all school heads. This is with a view to sustaining their awareness of adoption of AI-driven educational reforms.

Keywords: Artificial Intelligence, Capacity, Reforms, School Heads and Preparedness

Introduction
The 21st-century educational landscape is undergoing a seismic transformation with the integration of artificial intelligence (AI) in teaching, learning, and school administration. AI-driven reforms involve the use of intelligent systems to support decision-making, personalize learning, automate administrative functions, and enhance pedagogical practices (OECD, 2021). As education systems globally embrace these innovations, the preparedness of school leaders—principals and vice principals—to implement and manage such reforms is pivotal to success. Globally, the urgency for AI integration in education has gained momentum, particularly following the COVID-19 pandemic, which exposed systemic inadequacies in traditional schooling models. Countries such as China, Singapore, and the United Kingdom have made significant investments in AI to personalize learning and improve efficiency in educational management (UNESCO, 2022). In Nigeria, the Federal Ministry of Education (2023) acknowledged the transformative potential of AI in reducing inefficiencies and improving data-driven decision-making across schools. However, despite national aspirations,

the readiness of school heads at the grassroots level to drive AI-based reforms remains largely unexplored and underdeveloped.

AI reforms in education encompass both technological adoption and human capacity to use those technologies effectively. For school heads, preparedness involves awareness of AI systems, competence in digital leadership, and the ability to manage change (Harris & Jones, 2020). Unfortunately, many Nigerian school leaders have limited exposure to emerging technologies, with digital literacy levels varying widely across rural and urban schools (Oke & Ogundele, 2021). This is compounded by infrastructural constraints, lack of training, and policy inconsistencies. The major concepts in this study—AI-driven educational reforms and school leaders' preparedness—require clarification. AI-driven educational reforms refer to systemic changes in education processes facilitated by artificial intelligence technologies such as machine learning, natural language processing, and data analytics for instructional and administrative purposes. Preparedness, in this context, implies school leaders' awareness, attitudes, and competencies to adopt and effectively utilize AI tools.

The theoretical anchor of this study is the Technology Acceptance Model 3 (Venkatesh & Bala, 2020), which emphasizes perceived usefulness and perceived ease of use as determinants of behavioral intention and actual system use. Additionally, the Leadership for Learning Framework (MacBeath, 2021) underscores the role of visionary leadership in fostering innovation, adaptability, and knowledge integration in school systems. These frameworks support the idea that unless school heads accept, understand, and can apply AI tools meaningfully, educational reforms will remain rhetorical. The respondents in this study—school heads (principals and vice principals) in Enugu State—are pivotal actors in educational innovation. Their administrative role, influence on teaching practices, and coordination of resources position them as change agents. However, the extent to which they are equipped to embrace AI-driven reforms is uncertain, especially in the context of Enugu State's uneven digital infrastructure and minimal exposure to AI literacy.

Enugu State, located in southeastern Nigeria, is home to a mix of urban and rural secondary schools. While the capital city has begun experimenting with digital learning systems, most schools in rural areas operate with outdated technologies or none at all. The state presents a representative microcosm of the national education system’s challenges in transitioning to digital and AI-enhanced education. Thus, the study is timely and crucial. If school leaders are ill-prepared, the promise of AI integration in education may become another missed opportunity. Therefore, assessing their level of awareness and capacity to implement AI reforms becomes critical to shaping future leadership training, policy design, and sustainable innovation in Nigerian education.

Statement of the Problem

As global education systems move toward intelligent automation and data-driven reforms, the role of school leaders in championing such transformation becomes increasingly critical. Ideally, school heads should be knowledgeable, adaptive, and capable of integrating AI tools to enhance educational outcomes. However, in Nigeria and particularly in Enugu State, there exists a wide gap between policy aspirations and on-ground realities. While the government is advocating AI inclusion in educational practice, many school leaders lack foundational digital skills and access to adequate training or infrastructure. This discrepancy raises concerns about the feasibility of AI-driven reforms. What is the current state of school heads’ awareness of AI in education? Are they equipped with the capacity to lead these reforms? If not addressed, this gap could hinder Nigeria's ambition to build a future-ready education

system. Hence, the problem of this study is: to what extent are school leaders in Enugu State prepared to implement AI-driven educational reforms?

Purpose of the Study

The main purpose of this study is to investigate school leaders' preparedness for adopting AI-driven educational reforms in public secondary schools in Enugu State. Specifically, the study intends to:

1. Identify school heads' awareness levels of AI-driven educational reforms.
2. Examine school heads' capacity to adopt AI-driven educational reforms.

Research Questions

1. Are school heads aware of AI-driven educational reforms?
2. What is the capacity of school heads to adopt AI-driven educational reforms?

Methods

The study adopted adopted the descriptive survey design. According to Nworgu (2015), survey research design involves a collection of opinions, attitudes or feelings of a population or its representative sample using questionnaire or interview to explain existing phenomenon. The study was conducted in Enugu State, Nigeria. Descriptive survey research design was considered appropriate for this study because a questionnaire was used to elicit data from school heads regarding their preparedness for adopting AI-driven educational reforms in public secondary schools in Enugu State. The population of the study consisted of all public secondary school heads (principals and vice principals) in Enugu State, estimated at 642 school leaders based on data from the Enugu State Post Primary Schools Management Board (PPSMB, 2024). A multi-stage sampling technique was used. First, stratified sampling was applied to ensure representation across the three senatorial zones. From each zone, 70 school heads (both principals and vice principals) were randomly selected, making a total sample size of 210 respondents. The instrument for data collection was a structured questionnaire titled: Artificial Intelligence Reforms Preparedness Inventory (AIRPI). It consisted of 20 items organized into three sections: Section A: Respondents' demographic data. Section B: Items addressing AI awareness (RQ1) while section C addressed school heads' adoption capacity (RQ2). Section B was structured on a two-point scale of Aware (A) and Not Aware (NA) while Section C was structured on a Strongly Agree (SA = 4), Agree (A = 3), Disagree (D = 2), Strongly Disagree (SD = 1). The AIRPI was validated by three experts—two in Educational Technology and one in Educational Measurement and Evaluation—from the University of Nigeria, Nsukka. The content validity index was calculated to be 0.87, indicating a high level of appropriateness. The reliability of section B of the instrument was established using Kuder-Richardson-21 as the items are dichotomously scored to obtain reliability coefficient value of 0.81 while reliability of section C was ascertained using Cronbach Alpha method to obtain an overall reliability coefficient of 0.89 suggesting strong internal consistency. Data were collected through direct administration of the questionnaire by trained research assistants. Participants were briefed and consent was obtained. The data collection lasted two weeks. Frequencies and percentages were used to answer research question one while mean and standard deviation were used to answer research question two. The decision rule for research question one was that any percentage score of 50 and above was interpreted as Aware while percentage score of less than 50 was taken as Not Aware. For research question two, real limit of numbers was used for interpretation to the effect that 3.50-4.00 was taken as Strongly Agree, 2.50 to 3.49 – Agree, 1.50 to 2.49 – Disagree and 1.00-1.49 –Strongly Disagree.

Results

Research Question 1: Are school heads aware of AI-driven educational reforms?

Table 1: Frequencies and Percentages of School Heads on Awareness of AI-Driven Educational Reforms

		Aware		Not Aware		
		Freq	%	Freq	%	Decision
1.	I am aware of AI applications in education.	128	61.0	82	39.0	Aware
2.	I am aware of how AI can be used to personalize learning.	72	34.3	138	65.7	Not Aware
3.	I am aware of AI tools like chatbots or intelligent tutoring systems.	93	44.3	117	55.7	Not Aware
4.	My school has received training or orientation on AI.	115	54.8	95	45.2	Aware
5.	I am aware of updates about AI reforms in education.	107	51.0	103	49.0	Aware

Results in Table 1 show the frequency and percentages of school heads aware of AI-driven educational reforms. It indicates that majority of the respondents are of aware of: AI applications in education, their schools' receipt of training or orientation on AI and updates about reforms in education. However, majority are not aware of AI tools like Chatbots or intelligent tutoring systems nor aware of how AI can be used to personalize learning. Overall, school heads are aware of AI-driven educational reforms in public secondary schools in Enugu State.

Research Question 2: What is the capacity of school heads to adopt AI-driven educational reforms?

Table 2: Mean Ratings of School Heads on their Capacity to Adopt AI-Driven Educational Reforms

S/N	As a school head, I:	SA	A	D	SD	Mean	SD	Remark
1.	iculate a clear vision for integrating AI-driven education reforms.	132	28	30	20	3.29	.97	A
2.	Possess sufficient technical knowledge to lead AI-driven reform.	110	16	50	34	2.96	.83	A
3.	Effectively communicate the benefit of AI-driven reforms to teachers.	74	90	31	15	3.06	.81	A
4.	Allocate necessary resources for AI-driven reforms.	95	67	33	15	3.15	.85	A
5.	Foster a collaborative environment for teachers to share best practices on AI-driven education reforms.	53	59	58	40	2.60	.73	A
	Grand Mean					**3.01**	**.84**	**A**

Results in Table 2 show the item by item analysis of school heads capacity to adopt AI-driven educational reforms. From the analysis, the school heads are in agreement with the above-listed items. The grand mean of 3.01 indicate that the school heads possess the

capacity to adopt AI-driven educational reforms in public secondary schools in Enugu State. The standard deviation score of 0.84 means that the responses of the respondents moderately vary from the mean.

Discussions

School Heads' Awareness of AI-Driven Educational Reforms

The findings revealed that school heads were aware of AI-driven reforms in public secondary schools in Enugu State. This is understandably so given the ubiquity of AI. Again, there awareness could be attributed to the fact that the government of Enugu State is digitalizing education as evidenced in their building of smart schools. In dissonance with the finding of the present study, Oke and Ogundele (2021) observed that many Nigerian school leaders have limited exposure to emerging technologies, with digital literacy levels varying widely across rural and urban schools. The afore-mentioned contradiction may not be unconnected to sample characteristics and the variations in timing of the researches.

School Heads on their Capacity to Adopt AI-Driven Educational Reforms

The study finding indicated that school heads possess the capacity to adopt AI-driven educational reforms in public secondary schools in Enugu State. This could be attributed to the fact that school heads in line with global trend have been exposed to conferences on the use of AI-driven educational reforms. In addition, it is expected given that technology has become a current fad. Much as there is paucity of research works on school heads' capacity to adopt AI-driven educational reforms, MacBeath (2021) emphasizes leadership adaptability in the face of technological reforms. Thus, the place of leadership in the adoption of AI-driven educational reforms cannot be over-stressed.

Conclusion

The ubiquity and the usefulness of AI makes its utilization for educational reform, a matter of urgency. This is in line with global trend of the use of the digitalization of administrative processes. Based on the finding of the study, it was concluded that school leaders are prepared for AI-driven educational reforms in public secondary schools in Enugu State.

Recommendations

1. State education board should regularize the organization of compulsory AI leadership training for all school heads. This is with a view to sustaining their awareness of adoption of AI-driven educational reforms.
2. School heads should continually conscious efforts towards capacity building on the use of AI so as to increase its adoption for educational reforms.

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