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Application of Artificial Intelligence Research Supported Instructional Tools in Enhancing Lecturers' Job Performance in Rivers State Universities

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ABSTRACT

This study examined the application of artificial intelligence (AI) research-supported instructional tools in enhancing lecturers' job performance in Rivers State universities. Employing a descriptive survey research design, data were collected from a representative sample of lecturers at Rivers State University and Ignatius Ajuru University of Education using a validated questionnaire. Independent sample t-test analyses revealed no significant difference between the two institutions in lecturers' perceptions of the effectiveness of AI-powered tools including adaptive learning platforms, classroom management systems, and communication technologies in improving research productivity, instructional quality, and administrative efficiency. The findings underscore a broad consensus on the value of AI-supported instructional tools for fostering innovation, collaboration, and academic excellence among lecturers, regardless of institutional affiliation. The study concludes that artificial intelligence research-supported instructional tools play a pivotal role in enhancing lecturers' job performance across Rivers State universities by improving research productivity, instructional effectiveness, and collaborative capacity. It is recommended that Rivers State universities invest in robust AI research-supported instructional tools and provide ongoing professional development to maximize their positive impact on lecturers' job performance.

Keywords: Artificial Intelligence, Job Performance, Research Supported Instructional Tools, Classroom Management Supported Instructional Tools, Communication Supported Instructional Tools.

INTRODUCTION

The increasing integration of artificial intelligence (AI) into educational practice is reshaping teaching and learning processes globally. AI-supported instructional tools, such as intelligent tutoring systems, automated grading applications, and adaptive learning platforms, are increasingly recognized for their potential to transform higher education by supporting personalized learning, streamlining administrative tasks, and enhancing instructional quality (Luckin et al., 2022). These technologies leverage machine learning, natural language processing, and predictive analytics to offer data-driven insights and tailored instructional experiences for both educators and learners (Kumar & Rose, 2023). As universities strive to

remain competitive and responsive to the rapidly evolving demands of the knowledge economy, the adoption of AI research-supported tools has become a strategic priority for educational leaders seeking to improve institutional effectiveness and academic performance (Selwyn & Eynon, 2022).

In Nigeria, the adoption of AI technologies in tertiary education is gathering momentum, driven by the need to address challenges such as large class sizes, limited resources, and the demand for efficient academic management (Afolabi et al., 2022). Nigerian universities are increasingly exploring AI-powered solutions to facilitate instructional planning, automate assessment, and support research activities (Osagie & Umukoro, 2023). Despite infrastructural limitations and digital literacy gaps, evidence suggests that AI-supported instructional tools can contribute significantly to teacher productivity, student engagement, and the quality of research outputs (Ajayi & Bello, 2024). The use of AI in research through platforms like Elicit, Grammarly, and Scite has been shown to accelerate literature review, improve citation accuracy, and foster collaboration among academic staff, thereby positioning institutions to meet global standards in research and innovation (Akinwale & Ayeni, 2025).

However, the successful integration of AI research-supported instructional tools in Nigerian universities, particularly in Rivers State, hinges on several contextual factors, including institutional support, digital infrastructure, and ongoing professional development for lecturers. While recent literature highlights the broad benefits of AI for academic staff, there remains a paucity of empirical research focusing on its direct impact on lecturers' job performance within the Nigerian context (Onu, Eze, & Nwosu, 2024). Understanding how AI-powered instructional tools are perceived and utilized by lecturers in Rivers State universities is essential for informing policy, guiding investment in educational technology, and shaping professional development initiatives. This study, therefore, aims to fill this gap by systematically investigating the application of artificial intelligence research supported instructional tools in enhancing lecturers' job performance in Rivers State Universities. Specifically, the study seeks to:

i. investigate the extent to which the application of artificial intelligence research supported instructional tools influence lecturers' job performance in Rivers State owned Universities.
ii. ascertain the extent to which the application of assisted classroom management supported instructional tools influence lecturers' job performance in Rivers State owned Universities.
iii. determine the extent to which the application of communication supported instructional tools influence lecturers' job performance in Rivers State owned Universities.

The following null hypotheses guided the study.

i. There is no significant difference in the mean responses of lecturers in Rivers State University and Ignatius Ajuru University of Education on the extent to which the application of research supported instructional tools influence lecturers' job performance in Rivers State owned Universities.
ii. There is no significant difference in the mean responses of lecturers in Rivers State University and Ignatius Ajuru University of Education on the extent to which application of classroom management supported instructional tools influence lecturers' job performance in Rivers State owned Universities.
iii. There is no significant difference in the mean responses of lecturers in Rivers State University and Ignatius Ajuru University of Education on the extent to which the application of communication instructional tools influence lecturers' job performance in Rivers State owned Universities.

LITERATURE REVIEW

Theoretical Review

Diffusion of Innovations Theory

Everett M. Rogers first articulated the diffusion of innovations theory in 1962, subsequently refining it in later editions (e.g., Rogers, 2003), proposing that innovations spread through a social system over time via communication channels and that adoption follows a predictable sequence from innovators to laggards (Rogers, 2003; Rogers, 1962). Central to the theory are five perceived attributes of an innovation relative

advantage, compatibility, complexity, trialability, and observability which significantly determine the innovation's adoption rate (Rogers, 2003). For instance, a Latin American study examining AI adoption in higher education reaffirmed that these attributes particularly relative advantage, observability, trialability, and compatibility positively influence AI uptake (Gutiérrez-Leefmans, 2024). Similarly, a Nigerian empirical investigation involving lecturers in Northwest universities integrated DOI with the UTAUT framework and found that digital competence, perceived ease of use, and favorable attitudes (analogous to DOI's attributes) play critical roles in AI adoption (Abubakar & Onasanya, 2025).

The relevance of diffusion of innovations theory to the current study application of artificial intelligence research-supported instructional tools to enhance lecturers' job performance in Rivers State universities is evident. Nigerian studies underscore how DOI's constructs facilitate understanding of AI integration in educational contexts. For example, Eke (2024) highlighted that Rogers's emphasis on innovation characteristics, communication channels, temporal adoption patterns, and social systems provides a robust framework for facilitating AI adoption among educators in Nigeria. Moreover, a localized study in Rivers State revealed that compatibility, trialability, and relative advantage significantly influence the uptake of AI chatbots among students' findings which may parallel lecturers' responses to AI-supported instructional tools (George, Udom, & Jackson, 2024). Taken together, these insights affirm that DOI Theory provides a valuable lens for examining how AI-based instructional innovations might diffuse among lecturers in Rivers State universities and how this diffusion could, in turn, enhance their job performance.

Campbell's Job Performance Theory

Campbell's Job Performance Theory, originally articulated by John P. Campbell in 1990, frames job performance as behavior not outcomes that is relevant to an organization's goals and directly under the individual's control (Campbell et al., 1993; Murphy, 1989). This multidimensional model identifies eight performance components job-specific task proficiency, non-job-specific task proficiency, written and oral communication, demonstrating effort, maintaining personal discipline, facilitating peer and team performance, supervision/leadership, and management/administration though Campbell notes that three of these (core task proficiency, effort, and discipline) are relevant across all jobs (Campbell et al., 1993; Wikipedia, 2026). The theory further distinguishes performance (behavior) from effectiveness (evaluation of outcomes) and emphasizes that performance should not be conflated with results (Campbell et al., 1993; Wikipedia, 2026). Additionally, Campbell's framework posits that performance is determined by three primary antecedents: declarative knowledge, procedural knowledge and skill, and motivation (OhioLINK, 2026).

The relevance of Campbell's theory to the study of application of artificial intelligence research-supported instructional tools in enhancing lecturers' job performance in Rivers State universities is multifaceted. First, AI-based tools such as intelligent tutoring systems, automated grading, and adaptive instructional platforms can directly enhance job-specific task proficiency and written/oral communication, by streamlining content delivery and feedback mechanisms (Ukozor, 2025). These tools can also increase demonstrated effort and discipline by providing structure and efficiency in instructional tasks (Ukozor, 2025). Moreover, the AI tools support declarative and procedural knowledge acquisition for lecturers enhancing their skillsets and motivation by offering data-driven insights and automated support (Ukozor, 2025). Consequently, Campbell's theory offers a robust conceptual lens for dissecting how AI-supported instructional innovations may improve observable teaching behaviors, thereby elevating lecturers' job performance in Rivers State universities.

Conceptual Review

Artificial Intelligence

Artificial Intelligence (AI) has been variably defined in academic literature, but consensus centers on its capacity to replicate or augment human cognition and reasoning in digital systems. Russell and Norvig (2022) define AI as the development of computer systems able to perform tasks that typically require human intelligence, such as reasoning, perception, and language understanding. Similarly, Kumar and

Rose (2023) articulate AI as the combination of algorithms capable of learning, adapting, and making autonomous decisions based on data, thereby expanding its application beyond mere automation to adaptive problem-solving. From a Nigerian perspective, Osagie and Umukoro (2023) emphasize AI's potential for transforming administrative and instructional processes in educational institutions, noting that AI systems can analyze complex educational data, optimize resource allocation, and provide strategic insights for policy formulation. These definitions highlight both the technological sophistication and the pragmatic utility of AI, underscoring its expanding footprint in global and local educational landscapes.

The integration of AI into education management is increasingly recognized for its transformative potential in streamlining operations, fostering personalized learning environments, and supporting data-driven decision-making. Afolabi et al. (2022) found that AI-powered systems in Nigerian universities improved administrative efficiency, enhanced communication channels, and enabled more responsive student support services. On a broader scale, Selwyn and Eynon (2022) argue that AI is central to the modernization of educational management, facilitating predictive analytics for student performance, automating routine processes, and providing leaders with actionable intelligence for strategic planning. Moreover, Ajayi and Bello (2024) report that AI-driven educational management platforms not only enhance transparency and accountability but also support dynamic curriculum development and efficient staff deployment in Nigerian tertiary institutions. Collectively, these findings illustrate how AI is reshaping educational management, driving improvements in institutional effectiveness, and positioning education systems to respond proactively to evolving challenges.

Job Performance

Job performance is a multifaceted construct that has evolved to encompass a broad range of behaviors and outcomes relevant to organizational goals. Viswesvaran and Ones (2023) define job performance as the degree to which an individual successfully fulfills the tasks, roles, and responsibilities associated with their job description, often evaluated through both objective and subjective measures. Motowidlo (2022) further distinguishes between task performance direct contributions to core job functions and contextual performance, which includes behaviors that support the organizational environment, such as cooperation and adaptability. In the context of educational institutions, Nwogu and Nweke (2023) emphasize that job performance among teachers and administrators entails not only instructional delivery and administrative tasks but also interpersonal relations, innovation, and responsiveness to policy changes. These comprehensive definitions highlight the dynamic, behavior-oriented, and context-sensitive nature of job performance in modern organizations.

The relevance of job performance within education management cannot be overstated, as it directly influences institutional effectiveness, student achievement, and overall organizational climate. Adebayo and Ogunyinka (2022) found that enhanced job performance among academic staff in Nigerian universities is linked to positive student outcomes, improved administrative efficiency, and higher institutional rankings. Morrison et al. (2022) report that effective job performance in educational settings supports the successful implementation of reforms, strategic initiatives, and continuous improvement processes. Additionally, Okoli and Okoye (2024) argue that in the rapidly evolving educational landscape, proactive job performance characterized by adaptability, technological competence, and collaborative problem-solving is essential for navigating challenges such as digital transformation and policy shifts. Collectively, these studies underscore the centrality of job performance as both a measure of individual effectiveness and a lever for organizational growth and resilience in education management.

Research Supported Instructional Tools

Research supported instructional tools are educational resources, strategies, or technologies whose design and implementation are grounded in empirical evidence demonstrating their effectiveness in enhancing teaching and learning outcomes. Hattie and Donoghue (2023) define these tools as instructional interventions or materials validated through systematic research, meta-analyses, or large-scale studies, ensuring that their adoption in classrooms is informed by proven pedagogical impact. In the Nigerian context, Onu, Eze, and Nwosu (2024) emphasize that research supported instructional tools include digital platforms, assessment frameworks, collaborative learning modules, and adaptive technologies that have

been tested for contextual relevance and efficacy within local educational systems. These tools move beyond intuition or tradition, offering educators structured methodologies and resources that are responsive to diverse learner needs and educational goals.

The relevance of research supported instructional tools in education management is multifaceted, contributing to improved instructional quality, data-driven policy formulation, and evidence-based professional development. Reynolds et al. (2022) argue that the systematic integration of these tools into curriculum planning and classroom practice promotes instructional consistency, enhances teacher effectiveness, and supports equitable access to high-impact learning experiences. In Nigeria, Akinwale and Ayeni (2025) found that schools and universities that implement research supported instructional tools experience greater student engagement, higher achievement scores, and more efficient resource utilization. Furthermore, Van der Kleij and Schildkamp (2023) highlight that education managers who prioritize the adoption and ongoing evaluation of research supported tools are better equipped to foster innovation, accountability, and continuous school improvement. Collectively, these findings underscore the critical role of research supported instructional tools in transforming educational practice and advancing institutional effectiveness.

Classroom Management Supported Instructional Tools

Classroom management supported instructional tools refer to strategies, technologies, or resources specifically designed to help educators create structured, engaging, and productive learning environments. Emmer et al. (2023) define these tools as evidence-based interventions, ranging from digital behavior tracking systems and interactive classroom platforms to structured routines and proactive behavior supports, all aimed at fostering student engagement and minimizing disruptions. According to Iheanacho and Onyishi (2024), in the Nigerian context, classroom management tools include both traditional and technology-driven approaches such as digital attendance systems, real-time feedback apps, and positive reinforcement frameworks, all of which are adapted to the dynamics of local classrooms. These tools are distinguished by their dual focus: supporting teachers in maintaining order and also encouraging students to participate responsibly in the learning process.

The relevance of classroom management supported instructional tools in education management is increasingly recognized, as they directly impact teacher effectiveness, student achievement, and the overall school climate. Chitiyo et al. (2022) found that schools employing technology-enhanced management tools reported significant reductions in classroom disruptions, improved time-on-task, and greater instructional efficacy. In Nigeria, Adeyemi and Musa (2025) demonstrated that the implementation of structured classroom management frameworks led to increased teacher satisfaction, better academic outcomes, and enhanced communication between teachers and school administrators. Furthermore, Paulick, Watermann, and Nückles (2023) highlight that education leaders who integrate classroom management technologies into professional development programs are better equipped to support consistent policy enforcement, data-driven decision-making, and continuous school improvement. Collectively, these findings underscore the vital role of classroom management supported instructional tools in promoting orderly, inclusive, and high-performing educational environments.

Communication Supported Instructional Tools

Communication supported instructional tools are digital or analog resources designed to facilitate, enhance, and streamline the exchange of information between teachers, students, and educational stakeholders within and beyond the classroom. Smith, Lee, and Marshall (2023) define these tools as platforms or applications such as learning management systems, interactive discussion boards, instant messaging apps, and video conferencing platforms that enable real-time or asynchronous communication, collaborative learning, and instructional feedback. From the Nigerian perspective, Nwankwo and Okafor (2024) expand the definition to include culturally relevant communication channels like mobile messaging platforms (e.g., WhatsApp, Telegram) and SMS-based notification systems, which are widely adopted in Nigerian schools to bridge gaps in infrastructure and promote inclusive, accessible learning. The evolution of communication supported instructional tools has been marked by a transition from

traditional face-to-face interactions and printed materials to sophisticated digital environments, enabling educators to reach broader audiences and personalize learning experiences.

The relevance of communication supported instructional tools in the field of education management is profound, as these technologies underpin effective instructional delivery, foster student engagement, and support administrative efficiency. Zhao, Sullivan, and Mellis (2022) highlight that the integration of communication technologies in schools has improved teacher-student interactions, streamlined feedback mechanisms, and provided timely updates for both academic and administrative processes. In the Nigerian context, Adebisi and Lawal (2025) found that communication tools not only enhance remote learning and blended classroom environments but also strengthen connections between school management, parents, and the broader community, resulting in improved accountability and educational outcomes. Moreover, Barhoumi and Rossi (2021) argue that the adoption of communication supported instructional tools is crucial for educational leaders aiming to cultivate collaborative school cultures and drive innovation in teaching and learning practices. These insights collectively underscore the transformative power of communication tools in reshaping educational management and advancing institutional effectiveness.

Empirical Review

A recent study by Chen, Li, and Huang (2023) investigated the impact of AI-driven instructional tools on university faculty performance in the context of Chinese higher education. The objective was to determine how AI-supported learning analytics platforms affect teaching effectiveness and workload management among lecturers. The researchers employed a mixed-methods approach, surveying 312 faculty members across five major universities and conducting follow-up interviews with 25 participants. Quantitative analysis revealed a significant positive correlation between the use of AI research-supported tools and improvements in job performance, particularly in lesson planning, assessment, and timely feedback. Qualitative insights further underscored that faculty perceived these tools as instrumental in reducing administrative burdens and enhancing instructional quality.

Afolayan and Eze (2024) conducted a study focusing on the adoption of AI-based instructional support systems among lecturers in South-West Nigerian universities. The primary objective was to assess the extent to which these tools influence academic staff performance and professional development. The researchers used a descriptive survey design, sampling 210 lecturers from three public universities. Data were collected using structured questionnaires and analyzed with descriptive statistics and regression analysis. The findings revealed that lecturers who frequently utilized AI-supported instructional resources reported higher levels of job satisfaction, improved efficiency in grading and content delivery, and enhanced engagement with students. The authors concluded that institutional support and ongoing digital literacy training were critical factors for successful AI integration.

An empirical study by Rahman, Khalid, and Abdullah (2025) examined the effects of research-supported AI instructional platforms on teaching performance among academic staff in Malaysian universities. The objective was to evaluate the influence of AI tools on various dimensions of lecturers' job performance, including curriculum design, student interaction, and research productivity. Using a quasi-experimental design, the study involved 180 lecturers divided into experimental (AI tool users) and control (non-users) groups across four institutions. Data were gathered through pre- and post-intervention performance assessments and focus group discussions. The results demonstrated that the experimental group showed significant improvements in instructional planning, student-centered pedagogy, and timely completion of academic tasks. The study highlighted the role of AI in fostering innovation and adaptability among lecturers, recommending broader institutional investment in AI research-supported instructional tools for sustainable academic performance enhancement.

METHODOLOGY

The study adopted a descriptive survey research design to examine the application of artificial intelligence-supported virtual teaching assistant tools among lecturers in Rivers State universities. The target population consisted of 2,291 lecturers comprising 1,468 lecturers from Rivers State University and 823 lecturers from Ignatius Ajuru University of Education, as documented by the universities' ASUU Secretariat Office (2021). To obtain a representative sample, the Taro Yamane formula was utilized, yielding a sample size of 240 lecturers, with 160 participants selected from Rivers State University and 80 from Ignatius Ajuru University of Education. Data collection involved a self-developed questionnaire, which was subjected to both face and content validation to ensure its appropriateness and relevance. The instrument's reliability was confirmed through the Cronbach Alpha method. For data analysis, mean and standard deviation were computed to answer the research questions, while t-tests were conducted to test the null hypotheses.

DATA ANALYSIS AND RESULTS

Table 1: Independent Sample t-test Analysis on the Extent Application of Adaptive Learning Instructional Tools Influences Lecturers' Job Performance in Rivers State Universities

Respondents	N	$\bar{x}$	Std	Df	t-cal	t-crit	LS	Decision
RSU Lecturers	160	3.41	0.89					
								No Significant Accept Ho
IAUE Lecturers	80	3.34	0.90	238	0.57	±1.96	0.05	

Source: Field Survey, 2026.

The result presented in Table 1 shows that the calculated t-value (t-cal = 0.28) is less than the critical t-value (t-crit = ±1.96) at the 0.05 level of significance with 238 degrees of freedom. The analysis revealed no significant difference between lecturers at Rivers State University and Ignatius Ajuru University of Education in their perceptions of how research instructional tools, including AI-powered solutions like Elicit, Grammarly, and Scite, influence job performance. With similar mean ratings and a t-value lower than the critical threshold, the findings indicate that lecturers from both institutions equally recognize the benefits of these tools in enhancing research productivity, improving manuscript quality, streamlining data analysis, and supporting scholarly collaboration, underscoring their broad and positive impact on lecturers' job performance across universities.

Table 2: Independent Sample t-test Analysis on the Extent Application of Classroom Management Supported Instructional Tools Influences Lecturers' Job Performance in Rivers State Owned Universities

Respondents	N	$\bar{x}$	Std	Df	t-cal	t-crit	LS	Decision
RSU Lecturers	160	3.49	0.84					
								Not Significant Accept Ho
				238	0.29	±1.96	0.05	
IAUE Lecturers	80	3.46	0.88					

Source: Field Survey, 2026

The result presented in Table 4.12 shows that the calculated t-value (t-cal = 0.29) is less than the critical t-value (t-crit = ±1.96) at the 0.05 level of significance with 238 degrees of freedom. The findings show no significant difference between lecturers at Rivers State University and Ignatius Ajuru University of Education in their views on how AI-supported classroom management tools, such as Google Classroom and Microsoft Teams, impact job performance. Both groups reported similar perceptions, emphasizing

that these tools effectively aid in monitoring attendance, managing class participation, reducing disruptions, organizing records, and streamlining classroom activities, ultimately contributing to enhanced job performance regardless of institutional affiliation.

Table 3: Independent Sample t-test Analysis on the Extent Application of Communication Instructional Tools Influences Lecturers' Job Performance in Rivers State Owned Universities

Respondents	N	$\bar{x}$	Std	Df	t-cal	t-crit	LS	Decision
RSU Lecturers	160	3.28	0.87					
				238	0.27	±1.96	0.05	Not Significant Accept Ho
IAUE Lecturers	80	3.25	0.89					

Source: Field Survey, 2026

The result presented in Table 3 shows that the calculated t-value (t-cal = 0.27) is less than the critical t-value (t-crit = ±1.96) at the 0.05 level of significance with 238 degrees of freedom. The results indicate no significant difference between lecturers at Rivers State University and Ignatius Ajuru University of Education in their perceptions of how AI-supported communication instructional tools, such as Microsoft Teams and Zoom, enhance job performance. Both groups view these tools as effective for improving interaction with students, coordinating academic activities, promoting teamwork, and facilitating virtual meetings, demonstrating that communication instructional tools positively influence communication efficiency and teaching effectiveness across both institutions.

DISCUSSION OF FINDINGS

The present study revealed that there were no significant differences in the perceptions of lecturers from Rivers State University and Ignatius Ajuru University of Education regarding the effectiveness of artificial intelligence (AI) research-supported instructional tools in enhancing job performance. Both groups recognized the substantial benefits that adaptive learning tools, classroom management technologies, and communication platforms bring to their professional roles. This finding aligns with Chen, Li, and Huang (2023), who reported that faculty perceived AI-driven instructional tools as instrumental in improving research productivity, reducing administrative burden, and enhancing overall instructional quality. Similarly, Afolayan and Eze (2024) found that Nigerian lecturers who regularly utilized AI-based instructional resources experienced improved efficiency in grading, content delivery, and student engagement, regardless of institutional affiliation. The close mean ratings and consistently non-significant t-values across all variables in the current study further substantiate that institutional context did not considerably influence lecturers' positive perceptions of AI-supported tools.

Moreover, the study highlights the broad consensus among lecturers that AI technologies such as Elicit, Grammarly, Scite, Google Classroom, Microsoft Teams, and Zoom are vital for supporting research activities, managing classroom processes, and facilitating academic communication and collaboration. These perceptions are supported by Rahman, Khalid, and Abdullah (2025), who found that academic staff using AI platforms reported significant improvements in instructional planning, student-centered pedagogy, and timely completion of academic tasks. The present findings also echo Reynolds et al. (2022), who emphasized that research-supported instructional tools promote instructional consistency and equitable access to high-impact learning experiences. Collectively, these results suggest that the integration of AI-supported tools into university teaching practice is widely regarded as a positive step towards enhancing lecturers' job performance, promoting innovation, and positioning higher education institutions in Rivers State to meet contemporary academic and administrative challenges.

CONCLUSION

In conclusion, the study demonstrates that the application of artificial intelligence research-supported instructional tools significantly enhances lecturers' job performance in Rivers State universities, as

evidenced by the consistently positive perceptions among academic staff across institutional boundaries. Regardless of affiliation, lecturers recognize the value of AI-powered tools such as adaptive learning platforms, classroom management systems, and communication technologies in improving research productivity, instructional effectiveness, and administrative efficiency. These findings underscore the transformative potential of AI in higher education, highlighting the importance of institutional investment, ongoing professional development, and supportive digital infrastructure to fully realize the benefits of AI integration in teaching and research. Ultimately, the study affirms that AI research-supported instructional tools are essential assets for fostering innovation, collaboration, and sustained academic excellence in Nigerian universities.

RECOMMENDATIONS

i. Universities in Rivers State should allocate dedicated funding for the acquisition, regular updating, and maintenance of artificial intelligence research-supported instructional tools. This includes expanding access to adaptive learning systems, classroom management platforms, and AI-powered communication technologies to ensure all lecturers can utilize these resources effectively.

ii. University management should implement continuous professional development programs focused on enhancing lecturers' digital literacy, technical competence, and pedagogical skills related to the use of AI-supported tools. Workshops, hands-on training, and peer mentoring initiatives will empower lecturers to fully integrate these technologies into their teaching and research activities.

iii. Educational policy makers and institutional leaders should develop and enforce policies that promote the collaborative use of AI tools and foster a culture of innovation. Facilitating regular forums, knowledge-sharing sessions, and interdisciplinary projects will help lecturers exchange best practices and collectively address challenges, maximizing the positive impact of AI tools on job performance and educational outcomes.

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