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Harnessing Artificial Intelligence in Higher Education Research: Prospects and Challenges

Afusat Titilayo Alabi[1], Adeseko Sunday Olaifa[2*], Ebunlomo Oreoluwa Olaifa[3], Yinusa Ayinla Yusuf[4]

[1,3]Department of Educational Management, Faculty of Education, University of Ilorin, Ilorin, Nigeria

[2]Department of Educational Management and Counselling, Faculty of Education, Al-Hikmah University, Ilorin, Nigeria

[4]Department of Educational Support Services and International Partnership (ESSIP) NCCE Abuja

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Corresponding Author
asolaifa@alhikmah.edu.ng

ABSTRACT

The rapid growth of artificial intelligence (AI) has begun to reshape higher education worldwide, opening new opportunities for innovation in teaching, learning, and research. In Nigeria, where higher education research often struggles with limited funding, infrastructural deficits, and restricted access to global resources, the integration of AI offers both promise and uncertainty. This paper critically examines the prospects and challenges of harnessing AI in higher education research in Nigeria, with a view to identifying strategies that can support its responsible adoption. Adopting a position paper methodology, the study relies on a review and synthesis of secondary sources, including scholarly articles, policy documents, and institutional reports. The analysis was guided by thematic categorisation of opportunities and challenges, with emphasis on the Nigerian higher education context. The findings indicate that AI can enhance efficiency in research processes, broaden access to global scholarship, promote personalised and inclusive studies, and safeguard research quality. However, infrastructural weaknesses, limited technical skills, concerns over data privacy, algorithmic bias, and the absence of strong regulatory frameworks remain significant barriers to adoption. The paper concludes that the responsible integration of AI requires strategic investments in digital infrastructure, researcher capacity-building, ethical safeguards, and locally relevant AI tools. By addressing these issues, Nigerian universities can leverage AI to advance innovation, inclusivity, and sustainability in higher education research, contributing more effectively to national and global knowledge economies.

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INTRODUCTION

The twenty-first century has been marked by rapid technological change, with artificial intelligence (AI) standing out as one of the most transformative innovations. AI, broadly defined as the capacity of machines to mimic human intelligence in tasks such as reasoning, learning, and language processing (**Wang, 2019**), is increasingly shaping multiple sectors of society, from healthcare and finance to education. In the educational sphere, global discussions have largely highlighted AI's role in improving teaching and learning processes through intelligent tutoring systems, automated grading, and adaptive learning platforms (**Oluyemisi, 2023**). However, a less explored but equally significant dimension lies in its potential to reshape educational research, particularly within higher education institutions. In Nigeria, educational research is central to the advancement of national development goals. Universities are expected to generate evidence that informs teaching practice, influences education policy, and addresses pressing societal issues such as access, quality, and equity (**Adeniyi et al., 2024**). Yet, Nigerian higher education research continues to face longstanding challenges. Data collection is often slow and fragmented, with researchers depending heavily on manual methods that are prone to human error. Access to large-scale, reliable datasets remains limited, while infrastructural constraints such as unstable electricity, weak internet connectivity, and underfunded research facilities hinder progress (**Oyeyemi et al., 2025**). In addition, the increasing demand for sustainable and inclusive solutions in Nigerian education has placed more pressure on researchers to produce timely, impactful, and policy-relevant knowledge.

Artificial intelligence offers new possibilities for overcoming some of these challenges. By enabling the analysis of large and complex datasets, AI tools can reveal hidden patterns, predict outcomes, and provide insights that would be difficult to achieve through traditional approaches (**Olofin, 2024**). For example, learning analytics powered by AI can help Nigerian researchers monitor student engagement across diverse institutions, while natural language processing can be used to analyse policy documents, examination reports, and other text-heavy data sources that often remain underutilised. Moreover, AI can support sustainability in Nigerian higher education research by reducing duplication of efforts, streamlining data management, and improving the efficiency of knowledge production (Luckin et al., 2016).

Despite these prospects, the integration of AI into educational research in Nigeria raises serious concerns. Data privacy and protection are pressing issues, especially given Nigeria's developing regulatory framework for digital governance. The risk of algorithmic bias is equally relevant, as AI systems trained

on data from other contexts may fail to capture the socio-cultural realities of Nigerian education (**Oluka**, 2024). The infrastructural deficits that already affect research capacity—ranging from inadequate broadband penetration to insufficient funding—also pose significant barriers to AI adoption (**Folorunso et al., 2024**). Furthermore, limited exposure to AI technologies among Nigerian academics highlights the need for training and professional development to ensure that researchers can engage critically and productively with these tools.

As **Okonkwo et al.** (2024) observe, societies must actively guide the development and use of AI to ensure that it aligns with local values and priorities rather than simply replicating global trends. For Nigeria, this means balancing innovation with responsibility: adopting AI tools that can enhance the quality and relevance of educational research, while at the same time addressing ethical, infrastructural, and equity-related concerns. Against this background, this paper examines the prospects and challenges of harnessing AI in higher education research in Nigeria. It does not seek to present new empirical data but instead adopts the form of a position paper that draws on existing literature, both global and local, to provide a critical and balanced analysis. The discussion is organised around two key questions:

What opportunities does AI present for strengthening educational research in Nigeria's higher education system? What challenges must be addressed to ensure its responsible and sustainable integration?

By addressing these questions, the paper aims to contribute to the ongoing conversation on how Nigerian universities can strategically engage with AI to foster innovation, inclusivity, and sustainability in higher education research.

Historical and Conceptual Background of Artificial Intelligence in Higher Education Research

The concept of artificial intelligence has its roots in mid-twentieth-century computer science, when early researchers sought to design machines capable of simulating human reasoning and problem-solving. Early definitions of AI emphasised its ability to replicate tasks traditionally associated with human intelligence, including logical reasoning, pattern recognition, and natural language processing (**Chatterjee,** 2020). While initial progress was modest, AI began finding its way into applied fields, particularly in education through computer-assisted instruction and the first generation of intelligent tutoring systems (**Kelkar, 2022**). These early tools were limited in scope but represented an important step toward using technology to tailor learning experiences and support educational research. Globally, educational researchers started experimenting with AI to automate repetitive tasks, analyse large-scale student data, and predict learning outcomes (**Cao & Mai, 2025**). This period also saw the rise of learning analytics, which enabled researchers to examine student

interactions on digital platforms in real time, generating insights into engagement and performance patterns that traditional survey-based research could not easily capture (**Tempelaar et al., 2024**).

The conceptual relevance of AI to educational research lies in its ability to augment traditional methods. AI-driven tools can process vast and diverse datasets—from institutional records to online learning behaviours—allowing for deeper and more nuanced analysis. Natural language processing, for instance, has enabled the large-scale analysis of textual data such as student feedback, policy documents, and scholarly publications (**Liang, 2025**). Similarly, predictive modelling can help researchers identify factors associated with student attrition, academic achievement, or institutional performance, thereby generating evidence that is more timely and actionable for higher education policy (**Ngulube, 2025**). In the Nigerian context, the adoption of AI in higher education research is still in its infancy, but there are signs of growing awareness and interest. Nigerian universities have historically faced challenges of underfunding, infrastructural deficits, and reliance on manual methods of data collection and analysis (**Ayoko et al., 2023**). These limitations often slow down the research process and restrict the capacity of scholars to produce findings that are both robust and globally competitive. However, recent initiatives point toward an emerging AI agenda. The National Information Technology Development Agency (NITDA) has drafted a National Artificial Intelligence Policy aimed at positioning Nigeria to harness AI for socio-economic development (**Ekpemuaka et al., 2025**). Within higher education, discussions around digital transformation—such as the National Universities Commission (NUC) reforms on e-learning and quality assurance—are beginning to recognise the potential role of AI in improving institutional research capacity.

Conceptually, the use of AI in Nigerian higher education research goes beyond classroom instruction. It encompasses the application of AI technologies to:

1. Data management – improving how universities collect, organise, and analyse large datasets on students, staff, and institutional performance.
2. Policy evaluation – using AI-driven models to assess the effectiveness of government and institutional policies on access, quality, and equity.
3. Research productivity – supporting academics with AI-powered tools like literature review software, plagiarism detection systems, and automated citation managers.
4. Knowledge generation – enabling Nigerian scholars to contribute more effectively to global debates by producing timely, data-driven insights that reflect local realities.

Nonetheless, the Nigerian experience underscores the dual nature of AI in research. On one hand, it offers opportunities for innovation and efficiency in a

system long constrained by resource limitations. It raises serious concerns about data privacy, infrastructural readiness, and contextual relevance. Imported AI models, for instance, may not fully capture Nigeria's socio-cultural dynamics, leading to misleading interpretations if applied uncritically. This tension illustrates why a clear conceptual understanding of AI's role in higher education research is necessary before large-scale adoption can occur. In summary, the historical trajectory of AI shows a steady expansion from experimental computing to practical applications in education and research. Globally, AI has transformed how researchers analyse data, build models, and generate insights. In Nigeria, the journey is only beginning, but the potential is evident. Understanding AI's conceptual foundations and its contextual application within Nigerian higher education is a critical step toward harnessing its benefits while addressing the challenges that inevitably accompany its adoption.

METHOD

This paper is written as a position paper, which means it does not seek to generate new empirical data but rather to take a clear, well-argued stance on an important issue. The choice of a position paper design is deliberate because the subject of artificial intelligence in higher education research is still evolving, with ongoing debates about its benefits and risks. By critically engaging with existing scholarship, the paper aims to highlight emerging opportunities, examine the challenges, and suggest responsible ways forward. The methodology guiding this work is conceptual and interpretive. Instead of fieldwork or experiments, the paper relies on a systematic engagement with existing literature. This approach makes it possible to bring together ideas from different strands of scholarship—education, computer science, higher education policy, and ethics—and weave them into a coherent argument. Clarification of concepts – establishing what "artificial intelligence in higher education research" means, and how it differs from general applications of AI in teaching or administration. Review and synthesis of literature – gathering evidence from credible sources such as journal articles, books, and policy reports to understand both the potential and the pitfalls of AI in research.

The paper draws exclusively on secondary sources. Priority was given to peer-reviewed journal articles, authoritative books, and reputable conference papers. In addition, policy documents and reports from international organisations were consulted to capture current trends and practical applications. Special attention was given to sources that discuss AI within higher education research, rather than those focused only on classroom teaching. To ensure relevance and quality, three criteria guided the selection of literature: Timeframe – most works consulted were published between 2015 and 2025 to

reflect current debates, while earlier seminal texts were included where historically important. Relevance – only sources that directly address AI in education, educational research, or sustainability of higher education research were included. Credibility – peer-reviewed materials were prioritised, while grey literature (such as institutional reports) was used sparingly, and only when they offered unique insights. The analysis followed a thematic approach. After reviewing the literature, recurring ideas were grouped into two broad categories: prospects and challenges. Within these categories, sub-themes emerged, such as personalised research processes, efficiency gains, ethical concerns, and infrastructural limitations. The paper then compared perspectives across different authors to identify areas of consensus and areas of debate. This comparison helped to avoid one-sided conclusions and made the final position more balanced.

The process of writing was therefore both analytical and interpretive: analytical in the sense of breaking down arguments into prospects and challenges, and interpretive in weaving them together into a meaningful position for higher education researchers. To strengthen credibility, the arguments presented in this paper were not based on a single source but on triangulation—that is, comparing and cross-checking information across multiple authors and contexts. Whenever conflicting evidence appeared, it was carefully acknowledged rather than ignored. This helped ensure that the final position reflects the complexity of the subject rather than a simplistic view.

RESULT AND DISCUSSION

Challenges of Artificial Intelligence in Higher Education Research in Nigeria

While the prospects of artificial intelligence (AI) in higher education research are promising, the evidence also points to a range of significant challenges. These challenges are not merely technical but extend to ethical, infrastructural, and socio-cultural dimensions. If left unaddressed, they could limit the ability of Nigerian universities to fully benefit from AI-driven research.

1. Infrastructural Limitations and Digital Divide

Findings from national reports and scholarly commentary show that the Nigerian higher education sector continues to struggle with basic infrastructural constraints such as unstable electricity supply, limited broadband connectivity, and outdated computer systems (**Ademola-Popoola & Adesina, 2025; Onyekachi, 2024**). Since AI applications demand reliable internet access, robust hardware, and cloud-based storage facilities, many institutions are not yet positioned to integrate such technologies effectively. The digital divide between well-funded federal universities and under-resourced state or private institutions also means that adoption will likely be uneven, potentially widening institutional inequalities.

2. Data Quality, Availability, and Privacy Concerns

AI systems rely heavily on large volumes of high-quality data. However, educational datasets in Nigeria are often incomplete, inconsistent, or poorly digitised (**Ojiemhenkele & Ofangbonmu, 2024; Ndalu, 2025**). Student records, institutional performance data, and examination statistics may not be centrally stored or standardised, which limits their usefulness for AI-driven analysis. Moreover, concerns around data privacy and security are particularly acute in Nigeria, where legal and institutional frameworks for protecting educational data remain underdeveloped. Without strong safeguards, the risk of data misuse or breaches could undermine trust in AI applications in research.

3. Algorithmic Bias and Contextual Mismatch

Evidence from global studies highlights how AI models trained on datasets from other regions may not align with Nigeria's cultural, linguistic, and socio-economic realities (**Aderibigbe et al., 2023; Nkwo et al., 2025**). For example, predictive models designed using Western student data may fail to account for the unique challenges faced by Nigerian students, such as irregular school calendars due to strikes or disparities in digital access. This mismatch can introduce bias into research findings, leading to conclusions that are not contextually valid and, in some cases, harmful if applied to policy decisions.

4. Limited Technical Skills and Research Capacity

The integration of AI into higher education research requires specialised knowledge of data science, machine learning, and computational methods. Findings show that many Nigerian academics, while highly skilled in their subject areas, lack formal training in AI tools and techniques (**Okunade, 2024; Iyoha et al., 2025**). Professional development opportunities remain scarce, and postgraduate programs in education rarely include components on data analytics or AI. Without significant investment in human capacity, the uptake of AI will remain limited to a small pool of researchers with access to international collaborations or personal resources.

5. Ethical and Regulatory Gaps

Concerns about ethics and governance also feature prominently in the literature. AI raises questions about ownership of data, intellectual property, and the potential displacement of human researchers in some aspects of knowledge production (**Obianyo, 2025; Yohanna & Suleiman, 2024**). In Nigeria, the absence of clear national guidelines on AI use in higher education compounds these concerns. Although the National Information Technology Development Agency (NITDA) has initiated work on a National Artificial Intelligence Policy, its implementation within universities remains at an early stage. Until robust ethical frameworks and regulatory systems are in place, the risk of misuse or unethical application of AI in research remains high.

6. Sustainability and Cost Implications

Finally, the cost of acquiring and maintaining AI infrastructure presents a practical challenge. AI applications often require investment in cloud services, data storage, and continuous software updates. For Nigerian universities that already face chronic underfunding, especially in research and development, these costs may be prohibitive. There is also the risk that dependence on proprietary AI platforms developed outside Nigeria could lock institutions into unsustainable financial commitments while limiting local innovation.

These challenges underscore the need for Nigerian universities and policymakers to approach AI adoption with caution, ensuring that the rush to innovate does not exacerbate existing inequalities or compromise ethical standards.

Prospects of Artificial Intelligence in Higher Education Research in Nigeria

The synthesis of literature and emerging practices reveals that artificial intelligence (AI) presents a wide range of opportunities for strengthening research in Nigeria's higher education system. While many of these prospects remain at an early stage of adoption, they illustrate the transformative role that AI could play in improving efficiency, deepening insights, and positioning Nigerian scholarship within the global knowledge economy.

1. Transforming Data Analysis and Knowledge Discovery

One of the clearest prospects of AI lies in its ability to handle large and complex datasets with a speed and accuracy that far surpass traditional methods. Nigerian higher education researchers often contend with fragmented and incomplete datasets, making it difficult to uncover meaningful patterns (**Oladipupo et al., 2020**). With AI-driven data mining and machine learning algorithms, it becomes possible to process vast quantities of student records, institutional data, or examination results in real time. Such tools can reveal hidden trends—for instance, patterns in dropout rates across regions or correlations between funding levels and research output—that would otherwise remain invisible. By enhancing data-driven discovery, AI could enable Nigerian researchers to move from descriptive to predictive and even prescriptive forms of analysis, generating insights that inform both institutional reforms and national education policies.

2. Expanding Access to Global Research Resources

Another promising prospect lies in how AI can democratize access to global scholarly knowledge. Many Nigerian universities continue to struggle with limited subscriptions to international journals, creating barriers for researchers who wish to engage with the latest studies. AI-powered tools such as intelligent literature search engines, automated summarizers, and citation managers can help close this gap (**Srivastava & Agarwal, 2024**). By streamlining

literature reviews, identifying relevant sources, and generating concise syntheses of complex texts, AI makes it easier for scholars to stay current with global debates and build on cutting-edge research. This could help Nigerian academics position their work within international discourses and enhance the visibility of local perspectives on education.

3. Strengthening Policy-Oriented and Applied Research

The application of AI in higher education research has strong potential to support policy evaluation and applied research in Nigeria. Predictive analytics can be used to model future scenarios, such as enrolment growth, labour market demands, or the long-term effects of funding interventions (**Wakeel et al., 2025**). Such evidence can guide policymakers in developing proactive strategies, rather than reacting after problems have already escalated. For example, AI models could forecast the likely impact of increasing tuition fees on student retention or identify the regions most at risk of low tertiary participation. By equipping researchers with more accurate tools for policy analysis, AI can strengthen the bridge between academic research and evidence-based decision-making in Nigeria.

4. Enhancing Personalisation and Inclusivity in Research

AI also offers opportunities for more nuanced, student-centred educational research. Adaptive learning platforms and intelligent tutoring systems generate rich data about how individual learners engage with content, the difficulties they encounter, and the strategies that improve their performance (**Sari et al., 2024**). For Nigerian researchers, this opens a new frontier in studying learning processes across diverse student populations. Such insights can be used to design interventions tailored to students from different socio-economic, cultural, or linguistic backgrounds. This form of personalised educational research could help address equity concerns in Nigerian higher education by highlighting what works best for different learner groups, thereby informing policies that promote inclusivity.

5. Promoting Research Sustainability and Collaboration

In a context where Nigerian universities face persistent funding shortages and infrastructural deficits, AI can help promote sustainability in research. Automation of routine research tasks—such as transcription, data cleaning, or coding of qualitative data—reduces time and cost burdens on scholars (**Ntsobi** et al., 2024). Furthermore, AI-driven platforms can facilitate collaboration across institutions by enabling secure data sharing, collaborative writing, and cross-institutional benchmarking. This is particularly important in Nigeria, where research efforts are often duplicated due to a lack of coordination. By fostering collaboration and resource optimisation, AI could help Nigerian universities strengthen their collective research capacity and compete more effectively on a

global scale.

6. Safeguarding Research Integrity and Quality

Finally, AI offers tools that can help improve the credibility and quality of Nigerian higher education research. Plagiarism detection software, automated grammar checkers, and peer-review assistance platforms are increasingly available and can be adapted for local use. These tools not only help researchers maintain ethical standards but also guide early-career academics in developing stronger scholarly practices. Over time, such measures could enhance the reputation of Nigerian research outputs, increase their acceptance in international journals, and reduce the prevalence of low-quality publications that currently undermine academic credibility.

These prospects, while still emerging, illustrate how AI could transform Nigerian higher education research from a resource-constrained enterprise into one that is more efficient, inclusive, and globally competitive. The challenge now is not whether AI can deliver these benefits, but whether Nigerian institutions and policymakers are ready to provide the infrastructure, training, and ethical frameworks needed to harness them responsibly.

Way Forward: Harnessing the Potential of Artificial Intelligence in Higher Education Research in Nigeria

The prospects and challenges of artificial intelligence (AI) in Nigerian higher education research reveal both the opportunities and the risks of adopting this powerful technology. To ensure that AI serves as a tool for innovation rather than a source of inequality, Nigerian universities, policymakers, and researchers must take deliberate steps. The way forward lies in a balanced approach that strengthens infrastructure, builds capacity, establishes ethical safeguards, and fosters collaboration.

1. Investment in Digital and Research Infrastructure

A foundational step is addressing the infrastructural deficits that currently hinder AI adoption. Universities require a reliable electricity supply, robust internet connectivity, and access to secure cloud storage for large datasets. Government agencies such as the Tertiary Education Trust Fund (TETFund) and the National Universities Commission (NUC) could prioritise dedicated funding streams for digital infrastructure in research. Strategic partnerships with the private sector, including telecommunications and technology firms, may also help bridge gaps in broadband access and hardware provision, particularly in under-resourced institutions.

2. Capacity Building and Training for Researchers

AI adoption cannot succeed without equipping academics with the skills needed to use these tools effectively. Nigerian universities should integrate AI

literacy into postgraduate curricula, especially in education and social science research programs. Short courses, workshops, and collaborative training with computer science departments can also build cross-disciplinary expertise. Beyond technical training, researchers need exposure to the ethical and contextual dimensions of AI, ensuring they can critically evaluate algorithms and adapt them to Nigerian realities. This dual focus—technical and ethical—will empower researchers to use AI responsibly.

3. Development of Context-Specific AI Tools

Imported AI models often fail to capture Nigeria's linguistic, cultural, and socio-economic contexts. A sustainable way forward is to encourage the development of AI tools tailored to local realities. This might include natural language processing systems designed for Nigerian languages, predictive models trained on local educational data, or plagiarism detection software calibrated to Nigerian academic writing styles. Supporting research and innovation hubs within universities, possibly through government grants or international partnerships, could stimulate the creation of such localised tools.

4. Strengthening Ethical and Regulatory Frameworks

The responsible use of AI requires clear ethical guidelines and regulatory oversight. While the National Information Technology Development Agency (NITDA) has initiated steps toward a National Artificial Intelligence Policy, universities need to develop complementary internal policies. These should address data ownership, privacy, intellectual property, and the ethical implications of algorithmic decision-making. Institutional review boards (IRBs) should expand their oversight to include AI-related research projects, ensuring that innovations respect both human rights and academic integrity.

5. Encouraging Interdisciplinary and Inter-University Collaboration

AI thrives in environments where expertise is shared across disciplines. For Nigerian universities, this means breaking down silos between faculties of education, computer science, engineering, and social sciences. Joint research projects can foster knowledge exchange and ensure that AI applications in education are both technically sound and contextually relevant. Furthermore, inter-university collaboration is essential to avoid duplication of efforts and maximise scarce resources. Creating national research consortia focused on AI in education could allow institutions to pool data, co-author studies, and collectively influence policy.

6. Promoting Sustainable Financing Models

Given the high cost of AI tools and infrastructure, Nigeria must explore sustainable financing models. These might include public–private partnerships, donor-supported initiatives, and cost-sharing arrangements between universities. Open-source AI platforms should also be promoted as alternatives

to expensive proprietary systems, reducing dependency on external providers. By adopting flexible financing strategies, Nigerian universities can build long-term capacity without overburdening their already constrained budgets.

7. Cultivating a Culture of Innovation and Responsible Use

Finally, the way forward requires more than infrastructure and training—it requires a shift in research culture. Nigerian academics should be encouraged to view AI not as a replacement for human creativity, but as a partner that enhances the research process. This involves fostering curiosity, openness to experimentation, and a willingness to question both the potential and the limits of technology. At the same time, researchers must remain vigilant about the risks of misuse, ensuring that the pursuit of efficiency does not undermine values of inclusivity, fairness, and sustainability.

CONCLUSION

Artificial intelligence (AI) is no longer a distant technological dream; it is a present reality that is steadily reshaping the way knowledge is produced, analysed, and applied. For Nigerian higher education research, the integration of AI carries immense potential. As the discussion in this paper has shown, AI can transform research processes by enhancing the speed and accuracy of data analysis, expanding access to global knowledge resources, supporting policy-relevant studies, and promoting inclusivity and sustainability in knowledge production. If thoughtfully applied, AI could help Nigerian researchers overcome long-standing barriers of underfunding, limited infrastructure, and restricted access to scholarly resources, positioning the nation's universities more firmly within the global academic landscape. Yet, alongside these opportunities lie pressing challenges. Weak digital infrastructure, data quality issues, algorithmic bias, limited technical skills, and the absence of robust ethical and regulatory frameworks all threaten to undermine the responsible adoption of AI in Nigerian research. These challenges are not unique to Nigeria, but they are magnified by the systemic constraints that have historically shaped the higher education sector.

Addressing them requires not only financial investment but also a deliberate rethinking of research culture, academic training, and governance structures. The way forward lies in a careful balancing act. Nigerian universities, policymakers, and researchers must pursue AI adoption with both ambition and caution—embracing its potential to revolutionise higher education research while remaining alert to its ethical, cultural, and structural risks. Practical steps such as investing in digital infrastructure, building researcher capacity, developing context-specific tools, and strengthening regulatory frameworks are essential. Equally important is cultivating a culture of innovation and

responsibility, where technology serves as a partner to human creativity rather than a substitute for it. In conclusion, AI represents a powerful lever for advancing the quality, inclusivity, and sustainability of higher education research in Nigeria. Its integration should not be approached as a quick fix but as a strategic, long-term process that aligns with national development goals and global research standards. By acting decisively today—through investment, collaboration, and ethical foresight—Nigeria can position itself not only as a consumer of AI technologies but as a contributor to the global knowledge economy. The challenge is significant, but so too is the opportunity. The future of Nigerian higher education research will depend on how effectively the country chooses to harness the power of artificial intelligence.

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