Full Length Research

Whispers of Tomorrow: Nigerian Students in the Age of Al

¹Sunday Olusola LADIPO and ²Oluwaseun ABIODUN ASANRE

¹Medical Library, Lagos State University College of Medicine, Ikeja, Lagos. Tel.+2348037531025, Email: sundayladipo@gmail.com ²Lagos State University Library, Ojo, ICT Unit. Tel.+2348035066466, Email: oluwaseunabiodunasanre@gmail.com Orchid No.: 0000-0001-5518-2516

Accepted 25 June 2025

The rapid advancement of artificial intelligence (AI) is reshaping economies worldwide, and its impact on the future workforce is becoming increasingly critical. In Nigeria, the perceptions and readiness of students for an Al-driven economy have emerged as pivotal factors influencing national development. Meanwhile, maximizing the benefits and provisions of the Al-driven economy requires that students are adequately informed and equipped. Therefore, understanding how Nigerian students view and prepare for an Al-centric future is essential for designing targeted educational policies and bridging digital gaps. This study examines Nigerian students' perceptions and readiness for an Al-driven economy by synthesizing recent empirical research and evaluating the role of digital literacy, institutional support, and socioeconomic factors in shaping these attitudes. A systematic review of peer-reviewed literature published from 2019 to 2024 was conducted. The review integrates findings from studies conducted in Nigeria and comparative research from other countries to provide a comprehensive perspective on students' awareness, perception, preparedness, and potential challenges in adapting to an Al-driven economic landscape. The findings from the study reveal the level of awareness, form of perception, and level of readiness of Nigerian students to be fully functional, effective, and productive in the economy of the Al-driven era, and identify Al's transformative potential. Significant challenges are also identified. including limited digital literacy, inadequate infrastructural support, and insufficient institutional policies that can hinder the functionality of students in the Al-driven age. The study further reveals how access to Open Access (OA) resources and digital libraries can enhance research capabilities, gaps in training and digital fluency, and impediments to full preparedness for an Al-centric economy.

Keywords: Al readiness; Digital literacy; Nigerian students; Workforce development; Institutional support.

Cite This Article As: LADIPO, S.O., Oluwaseun ASANRE, O.A (2025). Whispers of Tomorrow: Nigerian Students in the Age of Al Inter. J. Acad. Lib. Info. Sci. 13(4): 151-158

Introduction

Artificial intelligence (AI) has rapidly revolutionized several industries in recent years, including education, with its cutting-edge tools and approaches that improve teaching and learning. Examining how students view and are prepared to interact with AI-driven educational interventions is necessary in light of this shift. Comprehending these viewpoints is essential for successfully incorporating AI into educational settings in Nigeria. Recent research indicates that Nigerian students have a generally favorable opinion of Al-based educational initiatives. Artificial Intelligence (AI) is a technology that can perform tasks typically requiring human intelligence, such as decision-making, teaching, object detection, and solving complex problems (Wobo, Nnamani, Alinnor, Gabriel-Job & Paul, 2025). According to Nwodu (2025), undergraduate students in Nigeria showed a modest level of awareness regarding Al technology and a belief in its ability to enhance educational experiences. Ngonso, Egielewa, and Egenti (2025) confirmed that a very high percentage of students supported using AI in their research and learning activities. Abanikannda and Falade's (2024) research also showed that undergraduate students demonstrated a moderate level of awareness regarding AI technology and believed in its ability to enhance educational experiences.

These favorable opinions are tempered, meanwhile, by concerns about privacy problems, technical difficulties, and the suitability of AI adoption training and support (Ngonso, Egielewa, Egenti, et al., 2025). The effective incorporation of AI in educational contexts depends on addressing these issues. Institutions like the University of Lagos (UNILAG) are actively creating policies on the ethical use of AI in academia in recognition of this. The upcoming UNILAG policy seeks to reduce dangers like academic laziness and plagiarism while promoting critical thinking (University of Lagos, 2024). This paper, "Digital Scholars: Nigerian Students' Perception and Readiness in the Age of AI." seeks to further explore these facets by analyzing the present level of AI integration in Nigerian higher education. It will examine students' knowledge, attitudes, and readiness to interact with AI, as well as the difficulties and moral dilemmas surrounding its use. The knowledge acquired will help create plans that take advantage of AI's potential to improve Nigerian education.

The rapid integration of digital technology and the rise of an Al-driven economy are two signs of the fundamental changes taking place in the world. This change, which is reminiscent of past technology revolutions like the dot-com boom and bust (Filippucci, Gal, Jona-Lasinio, Leandro & Nicoletti, 2024), highlights the potential for both major improvements and obstacles in a variety of areas. In light of this, educational systems throughout the globe are adjusting to include Al tools in order to improve learning results and get pupils ready for a future that is heavily reliant on technology. However, how students view and are prepared to use these new tools will determine how well Al is incorporated into the classroom.

Given the country's socioeconomic and educational context, the adoption of AI in Nigeria has particular potential and problems. Initiatives like educating 25,000 educators aim to close the knowledge gap in AI and prepare them to teach AI competences to 125,000 young Nigerians (Jaiyeola, 2024). The successful use of AI in education is hampered by issues such as a lack of qualified personnel and poor infrastructure, notwithstanding these initiatives (Muranga, Muse, Koroglu & Yildirim, 2023). These problems must be resolved to guarantee that Nigerian students are prepared to handle an Al-driven future. Systemic issues impede the successful use of artificial intelligence (AI) technology, despite Nigerian students' increasing interest in incorporating AI into their academic path. The adoption of AI technologies in educational institutions is hampered by several major issues, including infrastructure deficits, high implementation costs, digital literacy gaps, and

ethical concerns such as data privacy and algorithmic bias (Agbarakwe & Chibueze, 2024). Furthermore, a notable divide in digital literacy between instructors and pupils restricts the efficient deployment of AI technologies (Afzal, Khan, Daud, Ahmad & Butt, 2023). The potential advantages of AI in improving educational achievements are further hampered by the lack of thorough institutional rules and frameworks to direct AI integration (Vieriu & Petrea, 2025).

Literature Review

The quickly changing field of education offers both potential and challenges in the integration of artificial intelligence (AI). Examining the three main theoretical frameworks of digital literacy, institutional support, and diffusion of innovations is necessary to comprehend Nigerian students' attitudes and preparedness for adopting AI. When taken as a whole, these ideas shed light on the variables affecting students' views and preparedness for AI.

The abilities needed to efficiently use digital technology for information creation, evaluation, and navigation are together referred to as digital literacy. According to Stolpe and Hallstrom (2024), students must be digitally literate in order to interact with AI tools in the classroom in a meaningful way. Improving digital literacy is essential in Nigeria since it has a direct effect on pupils' comprehension and use of AI apps. However, obstacles like poor training and restricted access to digital resources make it difficult to develop these crucial abilities. In order to develop a generation of digitally literate scholars who can use AI to advance their academic and professional careers, it is imperative that these concerns be addressed.

The infrastructures, policies, and resources that educational institutions offer to encourage the adoption of technology are referred to as institutional support. According to Yusuf, Ansah, Ahmed & Yusuf (2022), effective technology integration depends on strong institutional support, which includes access to modern technology and professional development for teachers. Disparities in infrastructure development present serious problems in Nigeria. The efficient application of Al technology is hampered by the fact that many institutions lack the essential infrastructure, such as dependable internet access and state-of-the-art computer labs. To prepare students for an Al-driven industry and to foster an atmosphere that encourages the adoption of Al, institutional support must be strengthened.

Rogers (1983) developed the Diffusion of Innovations hypothesis, which looks at how new concepts and innovations proliferate in a community. According to Wang, Wang, Zhu, Wang, Tran & Du (2024), the adoption rate of advances like artificial intelligence is greatly influenced by elements like perceived utility, social impact, and communication routes. In Nigeria, students' acceptance and preparedness for AI are greatly influenced by their peers, cultural views, and awareness levels. Developing measures that promote the broad adoption of AI in educational contexts requires an understanding of these processes.

Students' preparedness for AI is greatly influenced by the interaction of digital literacy, institutional support, and diffusion mechanisms. For example, students who lack sufficient digital literacy may find it difficult to understand the significance of AI, which slows its diffusion. Similarly, students who lack institutional support may find it difficult to develop their digital literacy skills, which creates a cyclical challenge. Therefore, to improve AI readiness among Nigerian students, a comprehensive strategy that concurrently addresses these interrelated factors is required.

Recent initiatives aim to bridge the digital divide and promote AI adoption in Africa. For example, the Google AI Center is employing artificial intelligence (AI) models to forecast the occurrence and location of riverine floods in 80 countries throughout the globe, including 23 in Africa. The Centre in Ghana is assisting farmers in putting control measures in place and improving the detection of locust outbreaks, and in Kenya, it is partnering with Jacaranda Health to enhance our ultrasound AI technology, focusing on handheld devices that don't require larger machines (Nelson & Walcott-Bryant, 2023). Significant obstacles still exist in spite of these developments, such as the requirement for specialized language support, infrastructure shortages, and Africa's low AI contributions. These challenges emphasize the need for customized approaches that take into account the distinct socioeconomic and educational circumstances of African countries.

The importance of digital literacy, institutional support, and diffusion mechanisms in the adoption of AI must be acknowledged by policymakers and leaders in education (Ali, Murray, Momin, Dwivedi & Malik, 2024). Important stages include creating comprehensive legislation that supports digital literacy initiatives, making infrastructure investments, and cultivating an innovative culture. In addition to improving students' AI preparation, these steps will guarantee their ability to contribute successfully to the global digital economy. The precise obstacles and enablers of AI deployment in Nigerian educational institutions require more investigation. Important insights can be gained from longitudinal studies that look at how certain treatments affect digital literacy and AI readiness. Additionally, examining how cultural factors affect the spread of AI technologies will help build implementation tactics that are sensitive to cultural differences. Al integration in education has the potential to revolutionize educational experiences. But achieving this potential calls for a sophisticated comprehension of the theoretical frameworks influencing students' attitudes and preparedness. Nigerian students can flourish as digital

scholars in the era of artificial intelligence if stakeholders address the issues of digital literacy, institutional support, and innovation diffusion.

Nigeria's severe infrastructure deficit is one of the biggest obstacles preventing Nigerian pupils from being prepared for AI. Students' access to AI-driven tools and resources is severely restricted by the erratic power supply and poor broadband connectivity. A steady supply of energy is essential for digital learning, but many Nigerian institutions still experience unpredictable power interruptions (Babajide, Egenti & Komolafe, 2016). Students' access to online courses, participation in Alrelated research, and efficient use of computer resources are all hampered by these disturbances. Furthermore, many locations, especially rural ones, still lack adequate broadband internet connectivity. Students find it challenging to participate in Al-driven learning experiences due to the exorbitant cost of internet access. Nigeria's educational system will find it difficult to successfully incorporate AI unless significant investments are made in technology infrastructure.

Another major barrier to students' preparation for AI in Nigeria is the country's digital divide. Students from lowhouseholds especially income are affected bv socioeconomic gaps, which lead to unequal access to digital tools and AI resources. According to Xu (2024), pupils in rural and underprivileged communities are disadvantaged because access to AI technologies and educational resources is frequently concentrated in urban areas. A lack of access to AI training programs, a lack of access to contemporary computing devices, and a lack of exposure to digital literacy initiatives are just a few examples of how this divide appears. Gender disparities also contribute to the digital divide, as female students in some areas encounter financial and cultural obstacles that keep them from participating in AI education. To address these disparities, specific policies that support fair access to AI learning opportunities for all socioeconomic groups are needed.

Olatunde-Aiyedun (2024) and Odunaya (2023) contend that AI education should be incorporated into the curriculum from an early age to build foundational knowledge in machine learning, robotics, and data science. Many secondary and tertiary institutions in Nigeria still rely on traditional curricula that do not incorporate AI literacy, leaving students ill-prepared for the demands of Al-driven academic and professional environments. The lack of a well-structured Al-focused curriculum within the Nigerian educational system is another significant challenge. To promote the development of AI skills, the current educational structure, however, lacks industry engagement, teacher training programs, and Al-specific curriculum. Additionally, students' ability to obtain practical experience with AI applications is further hampered by the scarcity of AI textbooks and learning resources. It would be essential to update the curriculum to incorporate AI competencies in

order to give Nigerian students the tools they need to succeed in the digital economy. Nigerian students' Al readiness is hindered by infrastructure deficiencies, digital divide, and lack of an Al-focused curriculum. To prepare, the government, academic institutions, and private sector partners must promote equitable Al resources, invest in digital infrastructure, and incorporate Al literacy.

With legislative frameworks that facilitate unfettered access to academic publications, Canada and Europe have been leading proponents of open access (OA) (Willinsky, 2018). To promote an inclusive knowledge economy, Canada's Tri-Agency Open Access Policy (Government of Canada, 2015) requires publicly financed research to be publicly available. To promote digital scholarship and Al-driven research, Universities are collaborating to enhance AI research and education by offering improved programs and courses (Fresquet, 2022). Higher education institutions in Canada and Europe have made digital literacy a top priority as a requirement for AI preparation. According to empirical research, pupils that possess advanced digital abilities are more adaptive to learning aids driven by artificial intelligence (Facer & Selwyn, 2021). Institutions of higher learning are expected to prepare instructors for Alenhanced research approaches by integrating AI literacy modules into their curricula (Salhab, 2024).

Research productivity in developed countries is positively correlated with the deployment of AI, according to studies. This tool accelerates research processes by synthesizing research in a specific area, mapping its main characteristics, and facilitating information discovery (Aquilera-Cora, Lopezosa, Fernández-Cavia & Codina, 2024). Digital literacy is crucial for optimizing Al's potential, as evidenced by the use of AI in research by European institutions for automated literature reviews and predictive analytics (Gardan, Manu, Gardan, Negoita, Pastiu, Ghita & Zaharia, 2025). Unrestricted access to scholarly resources is necessary as the world moves toward an Al-driven knowledge economy. Open Access (OA) policies, as seen in developed contexts, reduce encourage equitable information asymmetry and knowledge dissemination (Harle & Warne, 2020). Nigerian higher education institutions can take advantage of global OA frameworks by incorporating Al-powered digital repositories to improve research accessibility and collaboration. According to developed contexts, digital literacy competencies are a prerequisite for AI readiness. Nigerian students need organized digital literacy programs to successfully navigate Al-enhanced academic environments. By integrating AI training modules into university curricula, Nigerian scholars could close the digital divide and be better prepared for global competition (Olatunde-Aiyedun, 2024).

According to Olatunde-Aiyedun (2024), national frameworks initiative could be expanded to include Al-assisted learning tools, fostering an Al-ready scholarly

ecosystem. Adapting best practices from developed regions requires policy interventions that prioritize OA infrastructure and digital literacy education. Canada and Europe's evidence suggests that OA and digital literacy significantly enhance AI readiness, indicating a strategic need for Nigerian institutions to adopt global best practices.

According to recent research, Nigerian students are using digital tools more frequently, yet there are still gaps in their digital literacy. According to Bali, Garba, Ahmadu, Takwate & Malgwi (2024), students in urban areas exhibit a reasonable level of skill with AI-powered learning resources, whereas their rural counterparts encounter numerous obstacles, such as restricted internet access and insufficient ICT infrastructure. Similarly, Abubakar, Falade & Ibrahim (2024) stress the need of institutional support in promoting AI preparedness, contending that students who attend colleges with clearly defined digital literacy programmes are more proficient in using AI.

In contrast to Nigeria, South Africa enjoys the advantages of a more robust digital infrastructure and government-backed AI initiatives. According to Uzuegbunam, C. E. & Bosch, T. (2023), universities like the University of Pretoria and the University of Cape Town are launching Bachelor of Engineering and Master of Science programs in AI and machine learning respectively fostering an Al-literate workforce. South Africa continues to lead Africa in the adoption of AI, with universities integrating AI and machine learning into various disciplines. In terms of incorporating digital literacy into their educational institutions, Ghana and Kenya have made significant strides. To use AI learning modules in secondary and postsecondary schools, Ghana's Ministry of Education has teamed up with international tech companies (Osondu, Francois & Strycker, 2024). In a similar vein, Kenya's Digital Literacy Programme (DLP) places a strong emphasis on early AI exposure, giving pupils a solid understanding of AI from elementary school (Werimo & Muthee, 2022).

Though policy frameworks, institutional structures, and societal adoption all influence AI readiness, comparative studies show that Nigeria can improve its AI readiness by implementing strategic measures from other African countries, especially South Africa, Ghana, and Kenya. This review focuses on three key areas: policy enhancement, public-private partnerships, and early AI education, highlighting insights from other African countries and their potential application in Nigeria. Artificial Intelligence (AI) is revolutionizing global economies, and nations are working to integrate AI into various sectors, particularly education.

A comparative analysis offers several important lessons for increasing Nigeria's AI readiness. Policies pertaining to AI literacy are essential for directing national AI development. Research, workforce development, and the ethical application of AI are all prioritized under South Africa's structured AI policy framework (Ayandibu, 2024). To create regulations that encourage AI innovation while maintaining regulatory control, the South African government has worked with industry and academics (Cloete, 2024). Nigeria, on the other hand, does not have a complete AI plan, so it is necessary to implement a similar organized policy approach. Nigeria would need to define ethical norms, involve several stakeholders, and incorporate AI literacy into national curriculum in order to establish an AI policy.

Al integration in the industrial and educational sectors has been accelerated by public-private partnerships (PPPs). Ghana has implemented AI projects in universities and innovation hubs by utilizing partnerships with multinational technology companies like Google and IBM (Fiase, Attah, Sackey, Ocansey & Lartey, 2024). These alliances have facilitated AI research funding, capacity growth, and access to AI resources. By establishing alliances with international AI pioneers and supporting regional startups to promote AI adoption, Nigeria can gain from taking a similar strategy. Government incentives for AI investment in the private sector could improve skill development and technology infrastructure (Oluoje, 2025).

Early exposure and education are highly linked to AI preparedness. In order to prepare students for AI-based university curricula and future employment in Al-driven sectors, Kenya has instituted AI training programs at the secondary school level (Akello, 2022). University students are now more proficient in AI thanks to these efforts, which has improved their ability to adjust to new technology. By integrating AI modules into secondary school curricula, educating educators on the principles of AI, and utilizing online AI learning platforms. Nigeria can follow suit. Creating extracurricular activities and contests with an AI theme could improve student preparedness and engagement even more. By learning from Ghana's successful public-private collaborations, South Africa's structured AI legislation, and Kenya's early AI education initiatives, Nigeria's AI preparedness can be greatly increased. Important stages toward achieving AI readiness include putting in place a national AI plan, developing local and international collaborations, and including AI instruction in secondary schools. Nigeria may establish itself as an African leader in AI adoption by implementing these best practices, guaranteeing that its labor force will continue to be competitive in the digital economy.

Few studies look at how these elements interact dynamically, despite the fact that several investigate digital literacy and AI preparedness among Nigerian students. Current research frequently ignores the complexity of AI preparation by separating digital literacy from the larger institutional and socioeconomic context. The relationship between digital literacy and socioeconomic position is mediated by institutional support; however, studies like those by Urbancikova, Manakova & Bielcheva (2017) and Adigwe, Mason & Gromik (2024) concentrate on individual factors. Future studies ought to use a more comprehensive strategy that incorporates these factors.

The lack of thorough comparisons between Nigeria and other international situations is another gap in the research. Few studies compare the AI readiness of Nigerian students to that of their peers in industrialized nations, despite the fact that there are comparative insights from Africa. Zondi, Epizitone, Nkomo, Mthalane, Moyane, Luthuli, Khumalo & Phokoye (2024) shed light on South Africa's preparedness for AI, but there isn't much research comparing Nigeria to countries that are at the forefront of AI integration, such as Canada or Germany. Finding best practices that can guide Nigerian policy and educational initiatives would be made easier with the aid of cross-national research.

Nigerian empirical data shows both advancements and difficulties in pupils' digital literacy and AI preparation. Even while some universities have made progress in implementing AI, there are still gaps in the curriculum and infrastructure. Potential methods for enhancing AI education in Nigeria are suggested by comparative analysis from Ghana, Kenya, and South Africa. Significant research gaps also highlight the need for more study, especially with regard to the interaction of digital literacy, institutional support, and socioeconomic determinants. Nigeria may improve student AI readiness and create an academic environment that is both digitally savvy and AI-literate by filling in these gaps and utilizing regulatory changes.

Methodology

This study uses a systematic review methodology to compile peer-reviewed research on Nigerian students' perceptions and preparedness for the AI era that was published between 2019 and 2025. Research gaps can be highlighted, trends can be found, and existing research findings can be aggregated using the systematic review approach (Xiao & Watson, 2023). This method guarantees a thorough and objective evaluation of pertinent material. Several scholarly databases, including Google Scholar, Scopus, Web of Science, and IEEE Xplore, were searched in a systematic manner. Among the keywords used in the search technique were "AI readiness among Nigerian students," "digital literacy in Nigeria," and "AI in African higher education."

Selected studies had to meet the following inclusion criteria:

- Be released from 2019 to 2024
- Pay attention to Nigerian students' use of AI and digital literacy
- Offer factual data or comparative analysis from other African nations
- Be official reports, conference papers, or peer-

- reviewed journal publications.
- Studies that did not directly relate to digital literacy or AI preparedness were excluded.

The study, therefore, disregarded;

- grey literature
- non-empirical studies, and
- articles without clear relevance to the research focus.

To maintain the review's accuracy and dependability, the chosen studies were assessed for methodological soundness.

Findings

This systematic review reveals several key findings concerning Nigerian students' perceptions and readiness for the AI age.

Awareness and Perception of AI: Nigerian students generally demonstrate a growing awareness of AI and its potential

impact on various sectors, including education. They hold positive perceptions regarding AI's ability to enhance learning experiences, research capabilities, and future career prospects. However, concerns about ethical implications, such as job displacement and algorithmic bias, as well as privacy issues, technical difficulties, and the suitability of AI adoption training and support, persist.

Digital Literacy Levels: While Nigerian students are increasingly using digital tools, significant gaps in their digital literacy skills remain. Urban students generally exhibit higher proficiency with AI-powered learning resources compared to their rural counterparts, who face obstacles such as limited internet access and insufficient ICT infrastructure. Socioeconomic disparities contribute to unequal access to digital tools and AI resources, further widening the digital divide.

AI Readiness: Nigerian students' readiness for the Aldriven economy is hindered by several factors, including infrastructure deficiencies, digital divide, and the lack of an Al-focused curriculum. Many institutions lack the necessary infrastructure, such as reliable power supply and broadband connectivity, to support Al-driven learning experiences. The absence of well-structured Al-focused curricula, industry engagement, teacher training programs, and Al-specific learning resources further exacerbates the issue.

Role of Open Access (OA) and Digital Libraries: Access to OA resources and digital libraries is crucial for enhancing research capabilities and promoting Al-driven research. Studies from developed countries like Canada and Europe demonstrate that OA policies reduce information asymmetry and encourage equitable knowledge dissemination. Nigerian higher education institutions can leverage global OA frameworks by incorporating Al-powered digital repositories to improve research accessibility and collaboration.

Comparative Insights: Comparative analysis with other African countries, such as South Africa, Ghana, and Kenya, reveals that Nigeria can improve its AI readiness by implementing strategic measures in three key areas: policy enhancement, public-private partnerships, and early AI education. South Africa's structured AI policy framework, Ghana's successful public-private collaborations, and Kenya's early AI education initiatives offer valuable lessons for Nigeria.

Discussion

The findings of this review highlight both the opportunities and challenges associated with preparing Nigerian students for the AI age. While students are increasingly aware of AI's potential and hold positive perceptions regarding its applications, significant obstacles hinder their readiness to thrive in an AI-driven economy.

The digital divide, exacerbated by socioeconomic disparities and infrastructure deficiencies, remains a major concern. Unequal access to digital tools, Al resources, and quality internet connectivity limits the ability of many Nigerian students, particularly those in rural areas and from low-income households, to develop the necessary digital literacy skills for Al readiness. Addressing this divide requires targeted policies and investments in infrastructure development to ensure equitable access to Al education and resources for all students.

The lack of an Al-focused curriculum in Nigerian educational institutions is another critical challenge. Traditional curricula that do not incorporate Al literacy leave students ill-prepared for the demands of Al-driven academic and professional environments. Updating the curriculum to integrate Al competencies, promoting industry engagement, and providing teacher training programs are essential steps for equipping Nigerian students with the skills needed to succeed in the digital economy.

The role of Open Access (OA) and digital libraries in enhancing research capabilities and promoting Al-driven research cannot be overstated. By leveraging global OA frameworks and incorporating Al-powered digital repositories, Nigerian higher education institutions can improve research accessibility and collaboration, and facilitate the development of Al-ready scholars.

Comparative insights from other African countries offer valuable lessons for Nigeria. By implementing strategic measures in policy enhancement, public-private partnerships, and early AI education, Nigeria can significantly improve its AI readiness and ensure that its workforce remains competitive in the digital economy.

Conclusion

This systematic review underscores the urgent need for concerted efforts to enhance Nigerian students' readiness for the AI age. While students demonstrate a growing awareness of AI and its potential benefits, systemic challenges such as the digital divide, infrastructure deficiencies, and the lack of an AI-focused curriculum hinder their ability to fully harness the transformative power of AI.

To address these challenges and prepare Nigerian students for the AI-driven economy, policymakers, educational leaders, and stakeholders must prioritise the following:

- 1. Investing in digital infrastructure to ensure equitable access to AI resources and connectivity for all students.
- Developing and implementing comprehensive digital literacy programs that address the specific needs of diverse student populations.
- 3. Integrating AI competencies into educational curricula at all levels, from primary to tertiary education.
- 4. Promoting public-private partnerships to foster Al innovation, research, and development.
- 5. Leveraging Open Access (OA) frameworks and Alpowered digital repositories to enhance research capabilities and knowledge dissemination.
- 6. Adopting best practices from other African nations that have made significant strides in AI readiness.

By implementing these strategies, Nigeria can empower its students to become digital scholars, equipped with the skills and knowledge to thrive in the Al age and drive national development.

References

- Abanikannda, M. O., & Falade, A. O. (2024). Undergraduate Students' Awareness and Perception of Artificial Intelligence in Education. *Journal of Educational Technology*, 15(2), 125-140.
- Abubakar, I., Falade, A. O., & Ibrahim, M. (2024). Institutional Support and AI Preparedness Among University Students. *International Journal of Educational Development*, 95, 102685.
- Adigwe, P. K., Mason, L., & Gromik, N. (2024). Socioeconomic Factors Influencing Digital Literacy Among Students. *Computers & Education*, 210, 104934.
- Afzal, S., Khan, M. A., Daud, A., Ahmad, F., & Butt, A. S. (2023). Digital Literacy Divide Between Teachers and

- Students: Implications for AI Adoption. *Education and Information Technologies*, 28(7), 9875-9892.
- Agbarakwe, C. H., & Chibueze, N. (2024). Challenges of Al Technology Adoption in Educational Institutions. Nigerian Journal of Technology, 43(1), 121-130.
- Aguilera-Cora, L., Lopezosa, C., Fernández-Cavia, J., & Codina, L. (2024). Al for Research Synthesis: A Systematic Review. *Scientometrics*, 129(3), 1893-1912.
- Akello, B. (2022). Kenya's Early AI Education Initiatives. *Journal of Educational Innovation*, 25(1), 78-92.
- Ali, M., Murray, A., Momin, M. A. A., Dwivedi, Y. K., & Malik, A. (2024). Artificial Intelligence (AI) adoption and utilization in the education sector: systematic literature review. *Education and Information Technologies*, 1-41.
- Ayandibu, I. (2024). South Africa's Al Policy Framework. *Al and Society*, 39(2), 457-472.
- Babajide, V. B., Egenti, P. O., & Komolafe, D. (2016). Electrical power supply and academic performance of students in Nigerian universities. *Mediterranean Journal* of Social Sciences, 7(1), 409-409.
- Bali, S. A., Garba, S. A., Ahmadu, F., Takwate, I. I., & Malgwi, C. A. (2024). Digital Literacy Skills Among Urban and Rural Students in Nigeria. *International Journal of Digital Literacy and Digital Competence*, 15(1), 23-38.
- Cloete, A. (2024). Industry-Academia Collaboration in South Africa's Al Development. *South African Journal of Science*, 120(5/6), 1-8.
- Facer, K., & Selwyn, N. (2021). Digital technology and the politics of education: Bending the future. Routledge.
- Filippucci, M., Gal, P., Jona-Lasinio, C., Leandro, G., & Nicoletti, G. (2024). Skills, technology, and industry dynamics: evidence from a multi-country, multi-sector analysis. *OECD Working Papers on Social, Employment and Migration, No. 294*, OECD Publishing, Paris, 2024.
- Fiase, C. S., Attah, E. B., Sackey, I. N. A., Ocansey, S. K., & Lartey, D. N. (2024). Public-Private Partnerships in Ghana's AI Sector. *Journal of African Business*, 25(3), 321-335.
- Fresquet, A. (2022). *Enhancing AI Research and Education in European Universities*. Digital Skills and Jobs Coalition.
- Gardan, C., Manu, A., Gardan, D. A., Negoita, C. L., Pastiu, A., Ghita, S. V., & Zaharia, M. (2025). Artificial intelligence solutions for research data analysis. *Procedia Manufacturing*, 95, 271-278.
- Government of Canada. (2015). *Tri-Agency Open Access Policy.*
- Harle, J., & Warne, B. (2020). Open access and scholarly communications in Canada: A review of recent developments and current status. *Canadian Journal of Communication*, 45(1).
- Jaiyeola, T. (2024). Nigeria's AI Education Initiative. *Tech Digest Nigeria*.
- Muranga, D. K., Muse, L. M., Koroglu, O., & Yildirim, M. (2023). Challenges affecting the use of artificial intelligence (AI) in higher education.
- Nelson, T. and Walcott-Bryant, A. (2023). *How Google is bringing the power of AI to Africa*. Google Africa.

- Ngonso, E. O., Egielewa, P. I., & Egenti, P. O. (2025). Students' Perception of Artificial Intelligence in Education. *International Journal of Educational Technology*, 16(1), 45-60.
- Nwodu, H. I. (2025). Awareness of Artificial Intelligence Among Nigerian Undergraduates. *Journal of Science Education and Technology*, 34(2), 212-225.
- Odunaya, O. (2023). Integrating AI Education into Early Childhood Curriculum. *Nigerian Journal of Educational Innovation*, 36(3), 421-435.
- Okeke, C. I., & Alabi, A. A. (2022). Al literacy and curriculum development in Nigeria. *International Journal of Educational Studies in Mathematics*, 9(3), 115-124.
- Olatunde-Aiyedun, T. G. (2024). Enhancing Al Readiness Through Curriculum Reform in Nigeria. *Journal of Educational Technology*, 15(1), 1-15.
- Oluoje, O. (2025). Government Incentives for AI Investment in Nigeria. *Business Day*.
- Osondu, C. K., Francois, J., & Strycker, L. F. (2024). Al Integration in Ghana's Educational System. *African Journal of Educational Studies*, 7(1), 120-134.
- Rogers, E. M. (1983). *Diffusion of innovations*. New York: Free Press.
- Salhab, H. (2024). Preparing educators for Al-enhanced research methodologies. *International Journal of Educational Technology*, 11(1), 67-89.
- Stolpe, D., & Hallström, J. (2024). Digital literacy in higher education: A systematic review. *Computers & Education*, 128, 309-325.
- Urbancikova, N., Manakova, S., & Bielcheva, P. (2017). Socioeconomic determinants of digital literacy in the EU. *Eurasian Journal of Business and Economics*, 10(19), 79-93.
- Uzuegbunam, C. E. & Bosch, T. (2023). South African Universities Leading in Al Education. *Journal of Higher Education in Africa*, 21(2), 197-212.
- Vieriu, D., & Petrea, R. (2025). Institutional Frameworks for Al Integration in Education. *European Journal of Education*, 60(1), 78-92.
- Wang, Y., Wang, X., Zhu, Q., Wang, S., Tran, T. P., & Du, J. (2024). Exploring the Impact of Diffusion of Innovations Theory on the Adoption of Artificial Intelligence in Education. *Sustainability*, 16(2), 754.
- Werimo, J., & Muthee, J. M. (2022). Impact of Kenya's Digital Literacy Programme on AI Awareness. African Journal of Technology in Education, 9(1), 56-70.
- Willinsky, J. (2018). The access principle: The case for open access to research and scholarship. MIT press.
- Wobo, I. A., Nnamani, C. I., Alinnor, C. J., Gabriel-Job, O. C., & Paul, A. (2025). Artificial intelligence for sustainable development in Nigeria: opportunities, challenges, and policy implications. *International Journal of System Dynamics Applications (IJSDA)*, 14(1), 1-16.

- Xiao, Y., & Watson, M. (2023). Guidance on conducting a systematic literature review. *Journal of planning education and research*, 43(1), 5-31.
- Xu, Y. (2024). Socioeconomic Disparities and Digital Access in Nigeria. *Journal of Digital Inclusion*, 12(1), 45-62.
- Yusuf, N. M., Ansah, R. K., Ahmed, H., & Yusuf, A. (2022). Institutional support for technology integration in higher education. *Education and Information Technologies*, 27(6), 8049-8069.
- Zondi, S., Epizitone, L., Nkomo, N., Mthalane, K., Moyane, J., Luthuli, N., ... & Phokoye, T. (2024). Readiness for artificial intelligence in South Africa. *Palgrave Communications*, 11(1), 1-12.