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THE IMPACT OF ARTIFICIAL INTELLIGENCE ON STUDENTS ACROSS GENERATIONS IN NIGERIA: A REVIEW

David Ikechukwu Odili,
Dennis Osadebay Univeristy,
Department of Anatomy, Asaba, Delta State.
+2347019672757,
odili.david@dou.edu.ng

And
Margaret Ebiye,
Dennis Osadebay Univeristy,
Department of Physiology, Asaba, Delta State.
+2348162524217
ebiye.margaret@dou.edu.ng

Abstract
Artificial Intelligence (AI) is transforming education in Nigeria for children, adolescents, university students, and adults. Unlike traditional learning with textbooks and chalkboards, AI provides personalized instruction, instant information access, and enhanced comprehension. Students frequently use tools like ChatGPT, Grammarly, and adaptive platforms, improving engagement and performance, while educators value AI for assessment and support. However, risks include reduced critical thinking, academic dishonesty, misinformation, privacy concerns, unequal access, and potential cultural erosion or teacher displacement. Balanced integration requires strengthened digital literacy, teacher training, ethical guidelines, and policies to ensure AI complements human intelligence rather than replaces it.

Keywords: Artificial Intelligence, Education, Generational learning, Nigeria, Teaching, Learning.

Introduction

Artificial Intelligence (AI) has emerged globally in recent years, impacting multiple sectors, including education. Its interdisciplinary nature has led to varied definitions. Shrivastava (2024) defines AI as a branch of computer science developing systems that simulate and extend human intelligence, while De Zúñiga et al. (2023) describe it as the capability of non-human machines to perform tasks, solve problems, communicate, and make decisions with varying autonomy and performance. Despite no universally accepted definition of intelligence, scholars in psychology and computer science continue to explore its core attributes.

Humans (Homo sapiens) may not surpass other species in speed, strength, or sensory perception, but their advanced cognitive abilities—abstract reasoning, creativity, and problem-solving—have enabled technologies beyond natural limits, including high-speed spacecraft and supercomputers (Schneider, 2022).

The rapid rise of AI raises concerns about learning and cognition. Evidence suggests excessive reliance may undermine creativity and critical thinking; for example, Channels Television (2025) reported that EEG analysis showed students using AI for essay writing had lower cognitive engagement than those working independently.

Against this backdrop, this article reviews evolving learning patterns across generations in Nigeria and examines AI's implications for contemporary education and academic practice.

The Old Generations (19th And 20th Century)

Education predates the 19th century, with learning in precolonial Africa largely informal and transmitted across generations through indigenous systems. Elders functioned as custodians of knowledge, passing down cultural values, social norms, skills, and beliefs through oral traditions and practical engagement, thereby preserving communal identity (Mulualem et al., 2021; Ezeanya-Esiobu, 2019; Dei & Karanja, 2022).

Formal education in Nigeria emerged in the mid-to-late 19th century with the arrival of Christian missionaries—such as the Church Missionary Society, Wesleyan Mission, and Baptist Mission—alongside long-established Islamic educational traditions. While missionary education, influenced by British models, spread mainly across the southern regions, Islamic education remained dominant in the North, shaped by centuries of Qur'anic scholarship and the legacy of the Sokoto Caliphate. Western-style education was often resisted in favor of Islamic instruction and Arabic literacy in northern Nigeria (Ezegwu & Okoye, 2024; Yahaya, 2021; Bashar, 2025).

Missionary education laid an early foundation for formal schooling but was primarily evangelistic, with limited pedagogical structure, standardized curricula, or facilities. Instruction focused on literacy and religious studies, while Islamic schools emphasized Qur'anic memorization, Arabic literacy, and Sharia law. In contrast, indigenous education centered on oral traditions, agriculture, craftsmanship, and moral training (Ukelina, 2021; Bashar, 2025).

Colonial rule further formalized education through documentation, translation, and the introduction of basic instructional tools such as slates, chalk, and religious texts (Shehu, 2021; Thompson et al., 2024). Western education expanded significantly in the 20th century, culminating in the establishment of the University College Ibadan in 1948. Post-independence reforms led to curricular expansion and increased use of textbooks, maps, and laboratory equipment (Adesote et al., 2022; Obimuyiwa & Salekhova, 2025).

Teaching relied largely on lecture-based methods, and access to knowledge required physical engagement with libraries and archives. Digital technology and artificial intelligence were absent until the late 20th century, when computers and internet access marked the beginning of a new educational era in Nigeria.

The 21st Century (2000 – 2025)

The 21st century brought significant changes to Nigeria's education system, driven by globalization, technological advancement, and government policies. A key milestone was the Universal Basic Education (UBE) programme of 1999, which aimed to provide free, compulsory primary and junior secondary education (FRN, 2013). Nigeria currently follows the 6-3-3-4 system, and this period also saw rapid growth in federal, state, and private institutions across all levels.

Teaching practices reflected a transition from traditional to modern methods. Lecture-based instruction, direct teaching, and demonstrations remained dominant, especially lectures, while approaches such as problem-based learning, flipped classrooms, Montessori methods, and e-learning gradually gained traction,

emphasizing critical thinking and collaboration (Okpara & Ezeador, 2024).

Instructional tools evolved alongside these methods. Chalkboards, common in the early 2000s, were gradually replaced by whiteboards, alongside growing use of computers, calculators, projectors, tablets, and smartboards (Vashishtha et al., 2021). Yet, increased reliance on digital tools like calculators has raised concerns about declining numerical competence (Eleje et al., 2024).

The spread of computers, internet access, and smartphones reduced barriers to information, positioning Nigeria firmly in the information age (Adomi & Kpangban, 2010). This shift intensified during the COVID-19 pandemic, when platforms such as Zoom and Google Meet became essential for instructional continuity and remain widely used (Onyema et al., 2020).

Even before widespread AI adoption, learners relied on platforms like Google and YouTube for academic support. Early childhood education increasingly incorporated animated digital content alongside traditional oral practices (Lawan, 2024; Umoh, 2024; Abubakar et al., 2025). The emergence of AI-powered platforms has accelerated this shift, providing instant information access and personalized learning support. Given that education is lifelong (Fafunwa, 1974), understanding AI's impact across Nigerian age groups is increasingly important.

AI in Early Learning (Children & Pre-teens)

Artificial intelligence (AI) is increasingly integrated into Nigerian education, particularly in STEM and at the secondary school level. Studies show that AI tools such as adaptive learning platforms, intelligent tutoring systems, personalized software, and virtual laboratories enhance academic performance, motivation, and cognitive development among children and adolescents (Epunam et al., 2024; Perculiar et al., 2025).

Middle-school students and early adolescents are becoming adept at using AI for academic tasks, reporting that it makes learning faster, easier, and more engaging (Imaji et al., 2025). Common tools include ChatGPT, Meta AI, voice searches, and digital assistants. While effective use can improve performance, overreliance may reduce critical engagement, foster academic laziness, and expose students to distractions or inappropriate content, highlighting the need for ethical guidelines (Imaji et al., 2025).

Despite these benefits, AI adoption remains uneven. Limited device access, poor connectivity, infrastructural deficits, and low digital literacy—especially in rural and public schools—hinder effective use (Nwodu, 2025; Ojokheta & Omokhabi, 2024). Parental concerns about privacy, ethics, and unsupervised exposure persist (Ekanem & Emejulu, 2025). Where implemented, AI supports learner-centered pedagogy, enhances problem-solving, and mitigates classroom overcrowding (Perculiar et al., 2025; Sanusi et al., 2022).

Regional studies confirm these findings. Ikechukwu et al. (2024) identified infrastructure, ethics, and privacy challenges in Imo State, while Nwana (2025) highlighted similar constraints in Eastern Nigeria but noted gains in engagement and personalized learning. Lawal et al. (2025) reported benefits in biology education in Ilorin but raised concerns about teacher displacement.

Overall, AI is positively shaping education in Nigeria. Long-term benefits include personalized learning, support for special needs students, and enhanced creativity,

engagement, and problem-solving (Muttaqin et al., 2025). Risks such as reduced social skills, mental health challenges, privacy issues, algorithmic bias, and widening inequalities require careful regulation and continued research (Lai et al., 2023; Nagy et al., 2023).

AI in Adolescents & University Students

Adolescents and university students are among the earliest adopters of artificial intelligence, with studies consistently showing high dependence on AI for academic and personal tasks. In Nigeria, AI adoption among university students is rapidly increasing, marked by high awareness, frequent academic use, and generally positive perceptions. Nonetheless, limited formal training, unequal access, ethical concerns, and infrastructural constraints continue to shape its effectiveness.

Across tertiary institutions, students commonly use tools such as ChatGPT, Grammarly, QuillBot, and Snapchat AI for assignments, studying, idea generation, and information retrieval (Ngonso et al., 2025; Orok et al., 2024). AI use has been linked to improved comprehension, writing and communication skills, and personalized learning experiences (Nwile et al., 2025; Eneh et al., 2025; Omeh et al., 2025). Studies from Jigawa State and Lagos State University of Education highlight benefits such as improved accessibility, adaptability, collaboration, and learning outcomes, while also identifying challenges related to ethics, data security, and shortages of technically skilled personnel (Omar et al., 2024; Fasinro et al., 2024).

AI has significantly improved access to academic resources through automated content generation, rapid retrieval, personalized recommendations, 24/7 virtual assistance, and multilingual access to global materials (Mittal et al., 2024; Sajja et al., 2023; Taşkın, 2025; Walter, 2024).

However, several risks persist. AI use has heightened concerns around plagiarism, academic dishonesty, and data privacy (Ibrahim et al., 2024; Suleiman et al., 2025). Excessive reliance may weaken critical thinking, deep learning, and communication skills (Ya'U & Mohammed, 2025; Okolie & Egbon, 2025). Infrastructural inequalities further risk widening educational gaps, particularly in underserved regions (Samuel & Salisu, 2025). Socio-cultural concerns include reduced face-to-face interaction and the marginalization of local knowledge systems (Crawford et al., 2024).

Educators and institutional leaders have expressed growing concern. Scholars from LASU and Caleb University warn that overdependence on AI may undermine creativity, intellectual rigor, and independent thinking (PunchNG, 2025; Asikhia, 2025). Similar concerns are evident internationally, with universities in Ireland and Singapore revising assessment practices and questioning AI-assisted grading practices (McDermott, 2025).

Overall, while AI is becoming deeply embedded in Nigerian university education, maximizing its long-term benefits will require improved training, equitable access, robust ethical frameworks, and sustained human oversight.

AI in Adult & Lifelong Learning

Artificial intelligence (AI) is increasingly recognized as a transformative tool across healthcare, education, and other sectors in Nigeria, including adult and elderly learning populations. Adoption, however, is shaped by digital literacy, infrastructure, and access to professional training. Among Nigerian science teachers, acceptance and intention to use AI are high, with perceived

ease of use the strongest predictor. Age, gender, and urban–rural residence do not significantly affect adoption, suggesting strong potential when adequate training and support exist (Nja et al., 2023).

Adults and older learners face persistent barriers, including socioeconomic inequalities, limited device access, unreliable infrastructure, and insufficient training, particularly among those with lower digital literacy (Ibekwe et al., 2025).

AI is contributing to adult education in Nigeria by improving learning, assessment, and personalized support. Realizing its full potential requires sustained investment, structured capacity-building, and clear ethical guidelines to ensure equitable and inclusive integration.

Benefits and Risks

The integration of AI into Nigeria's academic system represents a pivotal moment in the nation's educational evolution (Ekanem & Enejulu, 2025). Across educational levels, AI-driven systems—including smart classrooms, adaptive learning platforms, and tools such as Edmodo, Google Classroom, and AI-powered tutoring services like uLesson—have enhanced personalized learning, assessment efficiency, and access to educational resources (Ekanem & Enejulu, 2025).

Empirical evidence suggests that AI-powered adaptive learning platforms can improve academic performance and reduce dropout rates across primary, secondary, and tertiary education (Yakubu, 2024). Additional benefits include automated grading, reduced teacher workload, early identification of learning difficulties, and instructional adaptation to students' cognitive levels (Samuel, 2023; Ikechukwu et al., 2024). Across the literature, personalized learning consistently emerges as the most significant advantage of AI in education (Samuel, 2023; Ekanem & Emejulu, 2025; Adeniran et al., 2024).

However, several challenges constrain effective AI integration. These include inadequate infrastructure, financial limitations, resistance to technological change, weak regulatory frameworks, data privacy concerns, algorithmic bias, and the risk of widening the digital divide (Ekanem & Enejulu, 2025). Scholars also warn that AI may erode indigenous knowledge systems and promote Western-centric educational models.

Further risks include declining creativity, reduced writing proficiency, superficial learning, academic dishonesty, and overreliance on AI-generated content (Ikechukwu et al., 2024; McDermott, 2025). The growing prevalence of misinformation—through fabricated facts, references, and automated content—raises additional concerns about academic credibility (Májovský et al., 2023). Fears of teacher displacement and job insecurity have also emerged, although evidence suggests that AI is best positioned as a supportive tool rather than a replacement for educators (Cheng et al., 2025; Ekanem & Enejulu, 2025).

In conclusion, a balanced and context-sensitive approach is essential for leveraging AI's educational benefits while preserving the core values of learning—critical thinking, ethical development, and intellectual engagement. AI should augment, not replace, human effort, particularly among younger learners who appear more vulnerable to skill erosion through overdependence.

Conclusion

In conclusion, AI is increasingly influencing education in Nigeria, offering benefits such as personalized learning,

improved access to information, and enhanced academic efficiency. Effectively applied, it can support teaching, reduce learning gaps, and strengthen outcomes. However, adoption is limited by infrastructure, unequal access, low digital literacy, and weak policies. Excessive or unguided use risks critical thinking, creativity, academic integrity, social interaction, and data privacy. Human intelligence remains central, and AI should serve as a supportive tool. Ethical, well-regulated integration with teacher training and inclusive policies is essential to enhance education without undermining its quality.

Recommendations

Based on the findings and emerging concerns, the following recommendations are proposed for responsible AI use across generations:

i. Integrate formal AI education—guided by ethical frameworks—into the national curriculum, supported by active involvement from the Ministry of Education (Imaji *et al*., 2025).
ii. Provide structured training programs for teachers to build competence in using AI technologies for instructional purposes.
iii. Establish AI task forces within universities to oversee ethical integration of AI into teaching, learning, research, and administration (Pantami, 2025).
iv. Develop clear institutional and national policies to govern, screen, and regulate AI use responsibly across educational sectors (Asikhia, 2025).

References

Abubakar, H., Mohamed, H. B., Megat, M. A. Z. B., Zakaria, Z., & Garba, L. (2025). Teacher-Trainees Awareness and Perception of YouTube as a Teaching Resource in Colleges of Education in Nigeria: YouTube as a Teaching Resource in Colleges of Education in Nigeria. *International Journal of Curriculum and Instruction*, 17(1), 215-237.

Adesote, S., Akande, S., & Omolola, F. (2022). The Christian Missions and the Development of University Education in the Nigeria's Fourth Republic, 1999-2021: A Historical Analysis. *Journal in Humanities*.

Adomi, E.E., & Kpangban, E. (2010). Application of ICTs in Nigerian secondary schools. *Library philosophy and practice*,1.

Bashar, T. (2025). An Appraisal of the Role of Qur'anic and Madrasa Education in the Sokoto Caliphate. *Global Academic Journal of Linguistics and Literature*.

Channels Television. (2025, July 4). 'Writing is thinking': Do students who use ChatGPT learn less? Channels Television. Retrieved from []

Crawford, J., Allen, K. A., Pani, B., & Cowling, M. (2024). When artificial intelligence substitutes humans in higher education: the cost of loneliness, student success, and retention. *Studies in Higher Education*, *49*(5), 883-897.

De Zúñiga, H., Goyanes, M., & Durotoye, T. (2023). A Scholarly Definition of Artificial Intelligence (AI): Advancing AI as a Conceptual Framework in Communication Research. *Political Communication*, 41, 317 - 334.

Dei, G., & Karanja, W. (2022). The Role of Elders and Their Cultural Knowledges in Schools. *Critical Studies of Education*.

Ekanem, S. A., & Emejulu, J. (2025). An Essencist Assessment of the Impacts of Artificial Intelligence on Educational Development in Nigeria. *International Journal of Arts and Humanities*, *3*(1), 27-35.

Eleje, L. I., Onuigbo, C. F., Metu, I. C., Ejinkonye, F. O., & Enemouh, U. S. (2024). Influence of secondary school students' use of calculators on their numerical skills. *Futurity of Social Sciences*, *2*(3), 18-40.

Epunam, U., Omorogiuwa, O., & Okpako, E. (2024). Use of Artificial Intelligence and Human-Computer Interaction (AI-HCI) to Improve Children's Learning Outcomes in Nigeria. *International Journal of Engineering and Computer Science*. https://doi.org/10.18535/ijecs/v13i08.4879.

Ezeanya-Esiobu, C. (2019). A Faulty Foundation: Historical Origins of Formal Education Curriculum in Africa. *Frontiers in African Business Research.*

Ezegwu, C., & Okoye, D. (2024). Political bargaining, religion, and educational development: The Nigerian experience from the takeover of schools from christian missions. *International Journal of Educational Development*.

Fasinro, K. S., Udofia, G. I., Akinkuotu, F. A., & Aremu, V. I. (2024). Impact of Artificial Intelligence on the Learning Assessment of Students in Tertiary Institutions in South-West, Nigeria. *West African Journal of Open and Flexible Learning*, *13*(1), 113-134.

Federal Republic of Nigeria (FRN). (2013). National Policy on Education (6th ed.). NERDC Press.

Ibekwe, P. M. R., Olaniyi, A. O., & Nwankire-Jonathan, G. A. (2025). Artificial intelligence in geriatric oncology: opportunities and barriers to equitable access in Nigeria. *Journal of Medicine and Health Research*, *10*(2), 113-121.

Ibrahim, A. W., Taura, A. A., Iliyasu, A., Shogbesan, Y. O., & Lukman, S. A. (2024). Artificial intelligence (AI): Perception and utilization of AI technologies in educational assessment in Nigerian universities. *Edukasiana: Jurnal Inovasi Pendidikan*, *3*(3), 367-380.

Ikechukwu, I.B., Uwajumogu, B., & Echerenachukwu, O. (2024). Assessment of Artificial Intelligence Roles in Teaching and Learning (ICT) for Problem Solving in Secondary School in Imo State: Investigating the Prospect and Challenges. *GASPRO International Journal of Eminent Scholars*, 11(1), 108-123.

Imaji, P. J., Mwaniki, C. N., & Mabeya, T. M. (2025). Exploring Students' Artificial Intelligence Competence and its Impact on their Learning in Public Junior Secondary Schools in Abuja Municipality, Nigeria. *Journal of Popular Education in Africa*, *9*(8), 221-243.

Kayode, A. E., & Odumabo, A. T. (2024). The Impact and Challenges of Artificial Intelligence Technologies on Universities in Southwestern Nigeria. In *The European Conference on Education 2024*

Official Conference Proceedings (pp. 102-133).

Lai, T., Xie, C., Ruan, M., Wang, Z., Lu, H., & Fu, S. (2023). Influence of artificial intelligence in education on adolescents' social adaptability: The mediatory role of social support. *Plos one*, *18*(3), e0283170.

Lawal, O., Obeten, O., Olowookere, A., Lagbel, G., Elechi, U., & Onyebuchi, E. (2025). Assessment of Implementation of Artificial Intelligence Tools in Biology Teaching and Learning at Secondary Schools in Ilorin, Nigeria. *Journal of Pharma Insights and Research*, *3*(2), 211-217.

Lawan, M. (2024). *Effects of Rhymes and Digital Storytelling on Pupils' Academic Achievement and Learning Retention in Literacy in Kumbotso Local Government Area of Kano State, Nigeria* (Doctoral dissertation, Kwara State University (Nigeria)).

Májovský, M., Černý, M., Kasal, M., Komarc, M., & Netuka, D. (2023). Artificial intelligence can generate fraudulent but authentic-looking scientific medical articles: Pandora's box has been opened. *Journal of medical Internet research*, *25*(1), e46924.

Mittal, U., Sai, S., Chamola, V., & Sangwan, D. (2024). A comprehensive review on generative AI for education. *Ieee Access*, *12*, 142733-142759.

Mulualem, M., Tamiru, A., & Kelkay, A. (2021). Traditional educational systems in Ethiopia: A pedagogical practices inquiry. *Review of Education, Pedagogy, and Cultural Studies*, 44, 281 - 299.

Muttaqin, M. A., Putro, R. L., & Ramadhan, A. A. (2025). The impact of using AI-based applications on early childhood cognitive development. *BIS Education*, *1*, V125015-V125015.

Nagy, M., Sisk, B., Lai, A., & Kodish, E. (2024). Will artificial intelligence widen the therapeutic gap between children and adults? *Pediatric Investigation*, *8*(01), 1-6.

Ngonso, B., Egielewa, P., Egenti, G., Uduehi, I., Sunny-Duke, F., Ukhurebor, K., ... & Osemengbe, U. (2025). Influence of artificial intelligence on educational performance of Nigerian students in tertiary institutions in Nigeria. *Journal of Infrastructure, Policy and Development*, *9*(1), 9949.

Nja, C. O., Idiege, K. J., Uwe, U. E., Meremikwu, A. N., Ekon, E. E., Erim, C. M., ... & Cornelius-Ukpepi, B. U. (2023). Adoption of artificial intelligence in science teaching: From the vantage point of the African science teachers. *Smart Learning Environments*, *10*(1), 42.

Nwana, E. N. P. N. (2025). Perceived Impact of Artificial Intelligence, Digital Tools, and Pedagogical Innovations in Directed Writing in Secondary Schools in Eastern Nigeria. *Kontagora International Journal of Educational Research*, *2*(2), 72-84.

Nwile, C. B., Amaewhule, E. C., & Ezeugo, C. R. (2025). Utilization of Artificial Intelligence Tools for Improving Educational Outcomes of Students in Public Universities in Rivers State, Nigeria. *African Journal of Humanities and Contemporary Education Research*, *19*(1), 195-209.

Nwodu, G. E. (2025). Awareness and perception of the use of artificial Intelligence for learning among select communication undergraduates in Nigeria. *African Journal of Social Sciences and Humanities Research*, *8*(1), 113-130.

Obimuyiwa, G., & Salekhova, L. (2025). Stages of the formation of higher education in Nigeria in the 20th century: from colonial colleges to national universities. *Pedagogy. Theory & Practice*.

Ojokheta, K., & Omokhabi, A. A. (2023). Project Initiatives on Inclusive and Equitable Use of Artificial Intelligence in Education: Lessons Derivable for Policy Direction in Nigeria. *COUNS-EDU: The International Journal of Counseling and Education*, *8*(3).

Okolie, U. C., & Egbon, T. N. (2025). Artificial Intelligence and Teaching-Learning Process in Education Institutions in Nigeria: A Study of Undergraduate Students of Delta State University, Abraka: 10.24250/jpe/1/2025/UC/TNE. *Journal Plus Education*, *37*(1), 122-136.

Okpara, G. C., & Ezeador, C. N. (2024). Philosophy of Teaching: Exploring Various Teaching Methods for Improved Education in Nigeria. *Nnadiebube Journal of Philosophy*, *7*(3).

Omar, B. A., Babale, A., & Bukar, Z. S. (2024). Impact of Artificial Intelligence (AI) On Tertiary Education In Jigawa State, Nigeria. *Journal of Association of Educational Management and Policy Practitioners*, *6*(2), 203-209.

Omeh, C. B., Olelewe, C. J., & Ohanu, I. B. (2025). Impact of Artificial Intelligence Technology on Students' Computational and Reflective Thinking in a Computer Programming Course. *Computer Applications in Engineering Education*, *33*(3), e70052.

Orok, E., Okaramee, C., Egboro, B., Egbochukwu, E., Bello, K., Etukudo, S., ... & Akawa, O. (2024). Pharmacy students' perception and knowledge of chat-based artificial intelligence tools at a Nigerian University. *BMC Medical Education*, *24*(1), 1237.

Perculiar, O. A., Oduselu-Hassan, E. O., & Jonathan, T. (2025). Exploring the Influence of Artificial Intelligence on Secondary School Students' Cognitive Development and Academic Achievement in Delta State, Nigeria. *Asian Research Journal of Current Science*, *7*(1), 38-49.

PunchNG (2025, September 15th). LASU scholar warns students against over-reliance on AI. *PunchNG*. https://punchng.com/lasu-scholar-warns-students-against-over-reliance-on-ai/?Amp

Roe McDermott. (2025, September 9). *'It's a monster': How generative AI is forcing university professors to rethink learning.* The Irish Times. https://www.irishtimes.com/ireland/education/2025/09/09/its-a-monster-how-generative-ai-is-forcing-university-professors-to-rethink-learning/

Sajja, R., Sermet, Y., Cikmaz, M., Cwiertny, D., & Demir, I. (2024). Artificial intelligence-enabled intelligent assistant for personalized and adaptive learning in higher

education. *Information*, *15*(10), 596.

Samuel, I. R., & Salisu, A. D. (2025). Shaping the Future of STEM Education in Nigeria through Artificial Intelligence. *Journal of African Innovation and Advanced Studies*.

Schneider, D. (2022). The Exascale Era is Upon Us: The Frontier supercomputer may be the first to reach 1,000,000,000,000,000 operations per second. *IEEE* spectrum, 59(1), 34-35.

Shehu, A. (2021). Western Education versus Indigenous Knowledge of the Tarok in Plateau State, Nigeria. *Information Impact: Journal of Information and Knowledge Management*, 11, 59-68.

Shrivastava, A. (2024). Artificial Intelligence (AI): Evolution, Methodologies, and Applications. *International Journal for Research in Applied Science and Engineering Technology*.

Suleiman, Y., Akanbi, I. M., Ibrahim, Y. O., & Emeruem, I. C. (2024). Stakeholders' Views on Ai-Powered Chatbots for Enhancing Student Support Services in Nigerian Universities: A Case Study of Al-Hikmah University.

Taşkın, M. (2025). Artificial intelligence in personalized education: Enhancing learning outcomes through adaptive technologies and data-driven insights. *Human Computer Interaction. https://doi. org/10.62802/ygye0506*.

Thompson, P., Omitayo, A., Ademu, L., & Maiangwa, B. (2024). African Folklore: A Tool for Improving Sustainable Resource Management Practices in Africa. *Environmental Development*.

Ukelina, B. (2021). The Mis-education of the African Child: The Evolution of British Colonial Education Policy in Southern Nigeria, 1900–1925. , 7, 141-162

Umoh, E. (2024). YouTube as an Effective Digital Tool for Learning in Emerging Economy; Opportunities and Challenges. *YouTube as Effective Digital Tool for Learning in Emerging Economy: Opportunites and Challenges (May 05, 2024)*.

Vashishtha, K., Baidwan, S., & Puri, N. (2021). Comparison of two teaching aids: "PowerPoint and Chalkboard" in Undergraduate Anatomy Teaching. *International Journal of Approximate Reasoning*, 9, 8001-8007.

Walter, Y. (2024). Embracing the future of Artificial Intelligence in the classroom: the relevance of AI literacy, prompt engineering, and critical thinking in modern education. *International Journal of Educational Technology in Higher Education*, *21*(1), 15.

Ya'u, M. S., & Mohammed, M. S. (2025). AI-Assisted Writing and Academic Literacy: Investigating the Dual Impact of Language Models on Writing Proficiency and Ethical Concerns in Nigerian Higher Education. *International Journal of Education and Literacy Studies*, *13*(2), 593-604.