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Rethinking Teaching and Learning in the Age of Artificial Intelligence: Opportunities, Challenges, and Policy Imperatives for Higher Education in Nigeria

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Abstract **Original Research**

This paper examines the role of artificial intelligence in teaching and learning in Nigerian universities of education. The study uses a review approach organized under conceptual, theoretical, and empirical framework. The theory of connectivism forms the base, with focus on learning as making wise connections to information and tools. Findings show that lecturers now use artificial intelligence to prepare notes, set questions, and give feedback, while students use it to explain topics and practice past questions. The use of these tools can save time, give quick feedback, and support learning that fits each student. However, poor internet, unstable power, high cost of data, low digital skill, and lack of clear policy limit wide use in Nigeria. Without training and rules, some students depend on artificial intelligence to avoid thinking, and some lecturers accept output without checking. The paper concludes that artificial intelligence is not a threat to education, but a test of readiness. It recommends clear policy, regular training, better infrastructure, and assessments that test thinking. With proper planning, artificial intelligence can make teaching lighter and learning stronger for Nigerian students.

Keywords: Artificial intelligence, teaching and learning, higher education, Nigeria, educational technology, policy.

INTRODUCTION

Artificial intelligence refers to computer systems that can carry out tasks that usually need human thinking, such as solving problems, making choices, and learning from data (Russell & Norvig, 2021). In education, AI shows up as chat tools that answer questions, apps that mark assignments, systems that suggest study plans, and tools that change lesson content to match how each student learns (Chen et al., 2022). For Nigerian universities, this means lecturers can get help with large classes and students can get quick support outside lecture hours. In simple words, AI is like a smart helper that can think a little and act fast.

The type of AI most common in schools today is called generative AI. This kind can create new text, images, and ideas from the information it has learned (Kasneci et al., 2023). In Nigerian lecture halls, students now use it to draft essays, explain hard topics, and prepare for tests. Lecturers use it to design quiz questions, summarize long articles, and plan lesson notes. The point is not that AI replaces the teacher. The point is that AI can support the teacher and the student when used well. In simple words, AI is a

tool in the hand of the teacher and the student, not a teacher itself. Despite the above importance. Of AI in the teaching and learning in Higer Education, there are still some disadvantages of it .

The use of artificial intelligence in education is no longer a distant idea. Although, Many universities across the world now use AI tools for marking scripts, answering student questions, creating lesson notes, and tracking student progress (Zawacki Richter et al., 2019). In Nigeria, scholars in departments of Educational Technology have reported that both lecturers and students are beginning to try free AI tools for research and class work (Olaleye et al., 2023). This change is happening fast, and it affects how teaching and learning are done in higher education. In simple words, AI has entered our classrooms and we must talk about it plainly.

Nigerian higher education faces many issues such as large class sizes, limited staff, poor internet, and lack of modern tools (Adeoye & Mogbo, 2022). These problems make it hard for lecturers to give each student proper attention. AI can help by handling routine work and giving quick feedback to students (Ajani et al., 2024). However, many lecturers and students are not yet trained to use AI in a careful and honest way. Some students also use AI to copy work without learning (Ogunode & Joshua, 2023). This raises questions about trust, learning quality, and fairness. In simple words, AI can help our weak areas but it can also create new trouble if we are not ready. Recent work by scholars in Nigerian universities of education and other tertiary schools shows that teachers want to learn more about AI but lack clear guides and support from school management (Eze & Nwosu, 2023). Studies from 2021 to 2026 point to poor power supply, high cost of data, and low digital skill as major barriers (Okoye et al., 2022). At the same time, students are already using AI tools on their phones even without school approval (Yusuf & Balogun, 2024). This means the practice is already in our system, approved or not. In simple words, students are using AI now, while schools are still catching up.

For these reasons, this opinion paper is important now. It aims to give a clear view of the chances AI brings for teaching and learning, the real challenges Nigerian universities face, and what policy steps can help (Ibekwe, 2025). The goal is not to praise or blame AI, but to speak plainly so that lecturers, students, and policy makers can plan better. The paper speaks from the view of an Educational Technology scholar in Nigeria who sees both the hope and the risk. In simple words, this paper wants to help Nigerian universities think well and act well on AI.

Literature Review

Concept of Artificial Intelligence in Education

Artificial intelligence in education refers to computer systems that are designed to think, reason, and respond in ways that support human teaching and learning. Unlike ordinary software that only follows fixed steps, these systems can study patterns, understand questions, and produce answers that look thoughtful. In practice, this means AI can take a lecturer's rough note and expand it, check a student's essay for logic gaps, or suggest the next question based on what the student got wrong. Research shows that these systems can understand prompts, generate content, and adjust to student needs when guided well (Chen et al., 2022). It is not magic. It is coded intelligence built to reduce mental load and extend what teachers and learners can do alone. For any reader, the key idea is this: AI in education is about partnership between human judgment and machine speed. When we get that, we stop fearing it and start using it well.At the heart of this concept is adaptation. Good AI tools do not give everyone the same answer. They adjust to the user. A weak student can get simpler explanations and more practice, while a strong student can get harder tasks and deeper questions. This is why scholars now call it "personalized support at scale". In Nigerian universities where one lecturer faces 200 students, that kind of adjustment matters. It helps learning move from one size fits all to learning that fits you. The truth we must face is simple: AI becomes useful in our classes only when we see it as a tool that adapts, not a tool that commands.But depth also means honesty about limits. AI in education can process data fast, but it cannot understand context like a

human teacher. It can write an essay, but it cannot tell if the idea came from real thinking or from copying. It can give feedback, but it cannot feel the frustration of a student who has tried five times and still failed. That is why scholars insist that AI extends effort, it does not replace responsibility. For Nigerian lecturers and students, the wise path is clear. Use AI to draft, to check, to practice. Then add human review, human care, and human purpose. That is how the concept makes real sense in our classrooms.

Concept of Teaching and Learning in the Digital Age

Teaching and learning in the digital age means guiding students through knowledge using tools that connect beyond the four walls of a classroom. In the past, teaching was mostly one way: lecturer talks, students write. Learning stopped when the bell rang. Today, digital tools have broken those limits. Notes can be shared at midnight, questions can be asked without raising a hand, and feedback can come before the next class. Studies confirm that teaching is now shifting from one way lecture to more guided and interactive work because students can learn anytime with digital tools (Adeoye & Mogbo, 2022). The core idea is not the tool itself, but the shift in role. The teacher becomes a guide who designs paths, while the student becomes an active explorer who chooses how to walk them. For any scholar, this shift is the real change. The digital age is not about more slides. It is about more responsibility shared between teacher, student, and tool.This concept also changes how we measure success. In a traditional class, success was finishing the syllabus and passing the test. In the digital age, success is building skill that lasts after the test. Students are expected to search wisely, check sources, collaborate online, and solve real problems. Lecturers are expected to design tasks that cannot be answered by copy and paste, but by thinking and applying. In Nigeria, this is urgent because our class sizes are large and our staff are few. Digital tools can help one lecturer reach many students without losing quality, if we plan well. The point every reader must grasp is this: digital age teaching is about preparing students for a world that changes fast, not just for an exam that ends fast.Finally, this concept demands a new mindset from both sides. Students can no longer wait to be spoon fed. They must learn how to learn, how to ask good questions, and how to test what they find online. Lecturers can no longer teach the same way for 20 years. They must learn how to guide, how to use tools fairly, and how to design work that builds character, not just memory. The digital age does not remove the teacher. It removes lazy teaching. It does not remove the student. It removes passive learning. For Nigerian universities, the message is plain. When we accept this concept with purpose, teaching becomes lighter and learning becomes stronger.

Theory of Connectivism by George Siemens, 2005, Canada

Connectivism is a learning theory propounded in 2005 by George Siemens, a Canadian theorist and researcher from Canada, in collaboration with Stephen Downes. Siemens developed this theory because he saw that old theories like Behaviorism, Cognitivism, and Constructivism could not fully explain learning in a digital age. His big idea is simple but powerful: learning happens when people connect to information sources, tools, databases, and other people in a network. Knowledge is no longer stored in one person's head alone. It is distributed across systems. For this reason, Siemens argued that the ability to find, judge, and use the right information is now more important than memorizing everything. In a world where facts change fast, knowing where to connect and how to connect well is the real skill. This makes Connectivism the most relevant theory for your study on artificial intelligence in education and teaching in the digital age.The heart of Connectivism lies in its eight principles, and each one speaks directly to Nigerian universities today. First, learning and knowledge rest in diversity of opinions and sources. Second, learning is a process of connecting specialized nodes or information sources. Third, learning may live in non human tools, which is why AI systems can be part of a student's learning network. Fourth, capacity to know more is more critical than what is currently known, because information keeps growing. Fifth, nurturing and

maintaining connections is needed for continuous learning. Sixth, ability to see connections between fields and ideas is a core skill. Seventh, currency of knowledge is important because accurate and up to date information decides quality. Eighth, decision making is learning because choosing what to trust shapes future understanding (Siemens, 2005). Put together, these principles tell us one thing: in the digital age, a smart student is not the one who knows everything, but the one who knows how to connect everything correctly. That is exactly what your study is testing.For Nigerian universities, this theory is not just academic. It is practical. Our classrooms are large, our staff are few, and our students now have access to AI tools that can answer, explain, and draft in seconds. Connectivism says we should not run from these tools. We should teach students how to link them into their learning network wisely. A student who prompts AI well, checks the answer against lecture notes, discusses it with peers, and adds personal thinking is practicing Connectivism. A lecturer who designs tasks that force students to compare AI output with trusted sources is also practicing it. In short, this theory explains why AI tools matter in our schools. They are not replacements for teachers. They are nodes in the learning network that students must learn to use with judgment. That is the message any reader will understand without stress.

Implication of Connectivism Theory to This Study

The first implication of Connectivism to this study is that teaching must move from content delivery to connection training. If learning is about making the right connections, then Nigerian universities must train students and staff to connect to AI tools in a careful and purposeful way (Eze & Nwosu, 2023). This means teaching prompt writing so students ask the right questions, teaching fact checking so they test AI answers, and teaching reflection so they add personal thinking to machine output. Without these skills, students will connect to wrong information and call it learning. With these skills, they will use AI to build stronger understanding. The implication is direct: our schools must teach connection skills, not just subject content.

The second implication is that digital tools like AI must be treated as learning partners, not as distractions. Connectivism views technology as part of human cognition. This means your study should measure not just frequency of AI use, but quality of connection. How well do students link AI output to course objectives? How well do lecturers guide students to compare AI ideas with textbooks and real life cases? When connection quality improves, learning quality improves. Nigerian graduates will then leave school with both subject knowledge and network skills. That combination is what the job market needs now.

The third implication is that learning must be seen as continuous and outside the classroom. Connectivism reminds us that knowledge is in the network, and the network never closes. Students can learn at midnight, on WhatsApp, on YouTube, or through AI tutors. So teaching in the digital age must prepare students for this reality. The implication for your study is clear. If Nigerian lecturers embrace Connectivism, they will design work that trains students to connect, filter, and apply knowledge anywhere. When that happens, AI becomes a helper, not a threat. Teaching becomes guidance, and learning becomes connection.

AI in Teaching Practice

Lecturers in Nigerian universities now use AI tools to prepare lesson notes, set test questions, and grade simple assignments (Olaleye et al., 2023). This saves time and allows teachers to focus more on guiding students than on repetitive work. Studies from Ignatius Ajuru University of Education and other schools of education show that many teachers feel AI can reduce their workload if they are trained well (Eze & Nwosu, 2023). The key point is that AI works best when the lecturer still checks the output and adds professional judgement. That means AI is best seen as an assistant to the lecturer, not a replacement for classroom wisdom.

AI tools also help lecturers give quick feedback to many students at once. In large classes common in Nigeria, this is a big help because marking every script by hand takes too much time (Ajani et al., 2024). With AI, a lecturer can

get draft comments and then adjust them to fit each student. Research from 2022 to 2024 shows that students learn better when feedback comes fast and is clear (Adeoye & Mogbo, 2022). Still, lecturers must learn how to write good prompts and check for mistakes in AI answers. The lesson here is clear: speed matters, but accuracy and the teacher's eye matter more**.** The evidence shows AI can lighten teaching load, but only when teachers are trained and guided. What this means for us is that training must come before full adoption.

AI in Student Learning

Students in Nigeria are already using AI on their phones to explain topics, practice questions, and plan their reading (Yusuf & Balogun, 2024). This gives them support outside class, especially when lecturers are not available. Studies report that students who use AI as a study partner feel more confident and can study at their own pace (Okoye et al., 2022). The risk is that some students copy AI answers without reading or thinking. When that happens, learning becomes weak. So the real value comes when students treat AI as a tutor, not as a shortcut to pass without effort.AI can also make learning more personal. It can suggest topics based on what a student already knows and what they still find hard (Chen et al., 2022). In Nigerian universities where class sizes are large, this kind of personal help is rare. AI can fill that gap by acting like a tutor that is always available (Kasneci et al., 2023). The challenge is that not all students have good phones, steady internet, or data to use these tools daily. So the benefit is real, but access is not equal for all students. Until access improves, the promise of personal learning will remain half fulfilled. From the evidence, AI helps students who know how to use it and have the tools. The reality is that access and skill will decide who benefits most.

Challenges in Nigerian Higher Education

The main challenges are poor internet, unstable power, high cost of data, and low digital skills among staff and students (Ogunode & Joshua, 2023). Many lecturers want to use AI but lack training and clear school policy (Eze & Nwosu, 2023). Students also lack rules on how to use AI in a honest way. Without guidance, some use AI to submit work they did not do themselves. This raises questions about trust and academic honesty (Olaleye et al., 2023). Put plainly, we cannot build strong learning on tools we have not taught people how to use well.

Another challenge is data privacy and fairness. AI tools collect student data, and Nigerian universities need rules to protect this data (Ajani et al., 2024). There is also the risk that AI may not understand Nigerian names, local examples, or our way of speaking English. If that happens, the tool may give answers that do not fit our context (Adeoye & Mogbo, 2022). Schools must test tools before using them widely. The bottom line is this: any tool we bring into our classrooms must respect our students and speak their language

Policy Gap and Direction for Nigeria

Nigerian higher education needs clear policy that tells lecturers and students what is allowed and what is not allowed with AI (Okoye et al., 2022). Policy should include training for staff, rules for students, and steps to protect data. Schools must also invest in basic infrastructure like internet and power so that AI does not become a tool for only a few people (Yusuf & Balogun, 2024).

Recent papers from departments of Educational Technology call for dialogue among teachers, students, and school leaders to shape local policy (Ibekwe, 2025). What Nigeria needs now is policy that is practical, local, and fair to all schools. Policy must also focus on academic honesty. Students should learn how to cite AI, check facts, and add their own thinking to any AI output (Chen et al., 2022). Lecturers should set assignments that ask students to explain ideas in their own words, not just copy answers. When policy is clear, both teachers and students will feel safer to use AI in a right way (Olaleye et al., 2023). At the end of the day, good policy is what turns AI from a risk into a real help for learning. All in all, the evidence is clear: tools are available, but our system is not ready. Until we

fix basics and make clear rules, AI will widen gaps instead of closing them.

Conclusions

Artificial intelligence has moved from theory into Nigerian university classrooms, and it is reshaping both teaching and learning. Lecturers now use it to prepare lesson notes, set test questions, and give quick feedback. Students rely on it to break down difficult topics and check their understanding. Research confirms that when used well, AI can save time, improve feedback, and support learning that fits individual needs. The truth is simple: AI is not waiting for us. It is already here and active in our schools. The real challenge in Nigeria is not the power of AI itself, but the conditions around it. Many universities still face poor internet, unstable electricity, expensive data, low digital skill, and weak policy direction. Because of these gaps, some students use AI to escape thinking, while some lecturers accept its answers without proper review. This shows that our main problem is readiness. We are not short of tools. We are short of the skill, structure, and rules needed to guide them. The theory of connectivism helps us understand what to do. It teaches that learning today depends on connecting to the right information and tools at the right time, then adding personal judgment. For Nigerian universities, this means students and lecturers must learn how to connect to AI wisely, test its output, and think for themselves. Institutions must provide clear policy, regular training, and basic infrastructure so that AI serves local needs and protects student data. In the end, our progress will depend on the connections we build and the standards we keep. This paper therefore concludes that AI is not an enemy of education. It is a test of how ready Nigerian universities are for the digital age. If we act now by training staff and students, guiding use through policy, improving infrastructure, and designing fair assessments, AI will make teaching easier and learning deeper. If we wait, the gap between those who use AI well and those who cannot will only grow wider. The way forward is clear: prepare with purpose now, or fall behind later.

Suggestions

1. **Develop Clear and Simple AI Policy for Universities**

Every Nigerian university should create a policy that tells lecturers and students what is allowed and what is not allowed with AI. The policy must cover academic honesty, data privacy, and how to cite AI tools in assignments. The rule should be simple enough for all staff and students to understand and follow. When rules are clear, fear reduces and responsible use increases. Bottom line: policy first, tools second.

2. **Train Lecturers and Students on Responsible AI Use**

Schools should run short training workshops on how to write good prompts, check facts, and add personal thinking to AI output. Lecturers need skill to design assignments that test thinking, not just copying. Students need skill to use AI as a tutor, not a shortcut. Training should be regular, not a onetime event. The truth is, skill is what turns AI from a risk into a real help.

3. **Improve Basic Infrastructure for Digital Learning**

Government and school leaders must invest in stable power, campus internet, and affordable data for students and staff. Without these basics, AI will only help a few students with good phones and money. Equity must be part of the plan so that no student is left behind. Until the basics work, AI benefits will remain uneven. The reality is simple: no light, no internet, no fair access.

4. **Design Assessments That Test Thinking, Not Just Answers**

Lecturers should set questions that ask students to explain ideas in their own words, give examples from Nigeria, or solve new problems. This makes it harder to copy AI output without understanding. Assessment should focus on reasoning, creativity, and application. When tests measure thinking, students will learn to think. The key point: change the test, change the learning.

5. **Encourage Research and Local Testing of AI Tools**

Departments of Educational Technology and other units should test AI tools with Nigerian names, examples, and context before wide use. Research should also study how AI affects learning in our environment. Local testing will help schools choose tools that respect our students and culture. We cannot import solutions blindly and expect them to fit. The wise move is to test first, then adopt.

6. **Promote Dialogue Among Stakeholders**

School leaders, lecturers, students, and policy makers should talk often about AI use, challenges, and progress. Regular dialogue will build trust and allow rules to change as technology changes. Everyone affected must have a voice in shaping how AI is used. When all voices are heard, policy will be fair and practical. In the end, good decisions come from good conversations.

Reference

Adeoye, I. A., & Mogbo, O. I. (2022). Digital pedagogy and learning outcomes in Nigerian tertiary institutions. *Journal of Educational Technology and Learning*, 5(2), 45–58

Ajani, Y. A., Yusuf, M. O., & Ibrahim, H. (2024). Lecturers' use of generative AI for teaching and assessment in Nigerian universities. *International Journal of Educational Research, 12*(1), 33–47.

Chen, L., Chen, P., & Lin, Z. (2022). Artificial intelligence in education: A review. *IEEE Access, 8*, 75264–75278.

Eze, S. C., & Nwosu, J. C. (2023). Awareness and readiness of lecturers in Nigerian universities of education for artificial intelligence integration. *Nigerian Journal of Educational Technology, 9*(3), 112–126.

Ibekwe, P. N. (2025). Policy direction for artificial intelligence in Nigerian higher education. *African Journal of Digital Learning, 4*(1), 22–35.

Kasneci, E., Seßler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., ... & Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, 102274.

Ogunode, N. J., & Joshua, M. T. (2023). Challenges of artificial intelligence adoption in Nigerian universities. *Journal of Contemporary Education Research*, *7*(2), 88–101.

Okoye, K., Hussein, S., & Nganji, J. T. (2022). Exploring the use of AI tools by students in higher education in Nigeria. *Education and Information Technologies, 27*(8), 11567–11584

Olaleye, S. O., Sanusi, I. T., & Dada, D. (2023). Student and lecturer perspectives on artificial intelligence use in Nigerian universities of education. *Journal of Educational Computing Research, 61*(4), 901–920.

Russell, S. J., & Norvig, P. (2021). *Artificial intelligence*: A modern approach (4th ed.). Pearson.

Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning, 2*(1), 3–10.

Yusuf, M. O., & Balogun, A. D. (2024). Students' use of artificial intelligence tools for learning in Nigerian tertiary institutions. *Journal of Learning and Instructional Studies, 6*(2), 77–90

Zawacki Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education where are the educators? *International Journal of Educational Technology in Higher Education, 16*(1), 1–27.