Influence of Generative Artificial Intelligence (GenAI) in Nigerian Higher Education

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Abstract

Discourses on the influence of Artificial Intelligence (AI) in education have held sway in global literature for quite some time now, and the reason for this is not far-fetched. It is because of how AI use touches on ethics and loss/development of cognitive abilities. In the Nigerian educational context, AI in education is even more insidious. In addition to ethics and cognition, there are concerns around infrastructural deficit, access, and affordability. Thus, this paper examines AI's pros and cons in Nigerian higher education. AI has many merits, such as learner support, accessibility, and scalability. Using the content analysis approach and Technology Acceptance Model, the paper argues that despite the demerits (the ability to subvert academic honesty, disrupt trust, increase the workload for lecturers, digital colonialism, overreliance, etc.), there is a need to seize and harness the goods of AI for the future good of education in Nigeria. It recommends critical AI literacy for lecturers and students alike, the need for an institutional AI policy that would detail the *how* of AI use and the need for a robust data governance structure to safeguard institutions' data.

Keywords: Artificial Intelligence, AI education, education policy, GenAI, Nigeria, university.

Introduction

Since the launch of ChatGPT in November of 2022, the world has witnessed a complete turnaround in how many things are done. The impact of artificial intelligence is especially felt in education and the higher education sub-sector. It has altered how we discharge our duties as academics regarding teaching, research and administration. While these traditional roles of academics may not have changed fundamentally, how we execute each has been altered. There are now various tools to leverage to design curricula and instructional materials, generate

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content, write papers and supposedly expedite administrative and managerial tasks. This array of AI tools challenges how we teach, learn and assess not just our learners but also ourselves as academics, and we cannot continue to do business as usual. As AI's impact on education permeates various aspects, including scholarship, knowledge creation, validation, and dissemination, it also has implications on issues of sustainability, existing and future inequalities, and intergenerational inequalities, even though often less explored if not ignored. There are also concerns about making AI critically ethical in restoring and repairing 'colonial wounds.' More than ever before, there is a need to rethink and rejig how academics and lecturers function across higher education spaces because of the impact of AI on the research and academic integrity of both lecturers and students alike.

This paper is, thus, a call to action for academics to collectively think and tinker with ideas about guiding the innovative use of AI in the higher education sub-sector for the common good. Some pertinent questions in this regard are: What kind of higher education do we desire? What type does technology drive? What is our place in the world of technology? For open and distance learning (ODL) institutions and others operating the dual mode, these questions are even more amplified because ODL and dual learning modes rely much more than others on technology.

Technology Acceptance Model
Davis et al (1989) originated the technology acceptance model (TAM), which assumes that users would readily utilise a theory if they perceive it as useful and easy to navigate. This means that when employees realise that a system would assist them in working better with productivity, there is a greater possibility that such employees would embrace the technology. The theory of reasoned action undergirds TAM, and the former argues that an individual's attitude is influenced by social behaviour and modelled to anticipate information systems use (Ajibade, 2018).

Since the first iteration of TAM, there have been several updates and reviews up to a third one called TAM3, which brings about an innovative model. Participants in TAM3 discuss the fundamental elements of considered utility and simplicity of use (Zaineldeen et al., 2020). Given this, TAM3 originated from the fusion of TAM2 with the model of how easy-to-use factors. The probability of embracing the technology relies squarely on four fundamental elements: performance expectancy refers to the level at which a person holds the view that utilising technology will assist her in optimal job productivity; effort expectancy refers to the level of ease a system has; social influence denotes the level a person considers that other relevant stakeholders believe she should engage the new system and the last but not the least, facilitating condition being the level a person thinks that technical infrastructure of an organisation is there to aid the system's use. (Marikyan & Papagiannidis, 2023). Factors like age, gender, experience and voluntary use control the impact of predictors.

Despite its frequent use and wide acceptance based on its simplicity and ease of use, TAM has been severely criticised for its narrow focus on individual use (Ajibade, 2018), inadequate problem-solving abilities, narrow illustrative and predictive abilities, insignificance and deficiency in practical value (Chutter, 2009). This theory corroborates the merits of AI in academia; those who use AI perceive it as useful as it helps in their productivity. TAM's downside is also instructive on the challenges inherent in AI use in higher education.

Artificial Intelligence in Higher Education
Olakulehin & Olojede (2025) evaluate AI adoption in open and distance learning institutions in the West African subregion. Using the National Open University of Nigeria as a foil, they analyse the use of AI for exam proctoring, its scalability in administering up to 120 study centres. In a survey conducted, 80% of respondents mentioned weak internet connectivity and epileptic power supply as main infrastructural limitations to using AI, while 65% and 60% respectively cited technical gaps and cost implications as challenges. 75% stressed the significance of training, while 70% noted the importance of institutional support. The study recommends the need to institute clear policy guidelines on integrating and implementing AI in teaching, learning and assessment and the need to invest in infrastructure and professional development of staff.

Crompton & Burke (2023) analyse the situation of AI in higher education with the surge in publications between 2021 and 2022, and with a shift from the US to China topping publication records. In line with many other studies, language learning, such as writing, reading, and improved vocabulary, emerged as the commonest subject area. Akinwalere & Ivanov (2022) examine the opportunity areas of AI in higher education to include smart campus, research, teacher and AI collaboration and the challenges to include data comprehensiveness, output accuracy; they recommend that pedagogy should be anchored on technology and system change.

Olojede & Olakulehin (2024) take a critical turn to AI in Africa's open and distance learning education by examining its social, ethical, legal, technological and pedagogical ramifications. They note that Africa needs to do more to harness the benefits of AI education and that Nigeria needs to address the challenges of infrastructure, ethical and pedagogical implementation to reap the full potential of AI. AI in Nigeria's higher education system has a varying adoption level. Bali et al (2024) note that AI has fundamentally changed the educational landscape with increased online learning. They, however, note the limited integration of allied technologies like mobile learning, use of robots and recommend the institution of favourable policies as one of the ways to foster better and sustainable technological integration. Omenka et al (2024) echo a similar view on AI readiness in higher education from Northern Nigeria. They highlight infrastructural deficit, curriculum overhaul, policy areas, teachers and students' upskilling as areas that need improvement for adequate AI preparedness. They also recommend legislative involvement as a way of fostering better readiness.

Johnson et al (2024) in a study on the expected impact of AI on higher education in the US highlighted apprehensions around academic probity, thoroughness, how AI might be integrated, what the pedagogical benefits would be, change readiness and the scope, the hunch that many of the discussions around AI is exaggerated coupled with lots of uncertainties. The authors surmised that there is a propensity of AI for pedagogical advantage and disadvantage based on different contexts. Similarly, Lin et al (2024) investigate AI's impact on higher education, focusing on its opportunities and challenges. They recommend continuous research and discussions that consider the ethical issues, technological developments, and the wider impact AI would have on education, and different groups of people to ensure a responsible and sustained adoption into higher education worldwide.

Likewise, Vargas-Murillo et al. (2023) query ChatGPT's impact specifically on digital education, noting its affordances and downsides. The study concluded that ChatGPT is likely to foster academic and librarian-connected processes while taking cognisance of ethical use of the technology based on its likelihood to modify people's disposition to academic job responsibilities and processes. There is thus a need to investigate the proper and responsible use of ChatGPT in higher education. Chukwuere (2024) equally analysed the beneficial nature of ChatGPT in higher education to include the provision of tailored and more accessible learning and enhanced interactivity; and the demerits to include a lack of understanding of emotions, social interaction that creates isolated learners, technological shortfalls and the risk of overreliance.

Merits of AI in Nigerian Higher Education

Prima facie, AI provides support and assistance. One of its main advantages is based on its interactive ability and companion nature. With the speed with which it generates content, AI is a veritable, ready-made, tailored information-generating tool beyond the traditional Google search (even though it does not diminish the value of Google). For instance, with the right prompts, it helps to automate routine tasks such as fine-tuning reference/bibliography or converting it from one style to the other; it could help create quizzes/questions, especially multiple choice questions (MCQ) questions, options, and identify the correct answer; it could make an initial draft of abstract, letters; create lesson plans, summaries and paraphrase. It helps unblock 'writer's block' as it could be used as an inspirational tool to generate and further ideas. So, with AI, lecturers and learners may not find themselves being 'stuck' in a task as AI provides some abiding companion like a think pad to come to their aid.[1]

Additionally, AI acts as a personal tutor, which could serve as a friendly teaching aid to get general information on grey areas, similar to how we sometimes employ Wikipedia. Some AI could tailor learning to individual needs with its ability to analyse performance data. It thus serves as a supplementary instructor, giving more explanations, answering questions, and suggesting more reading materials. It also acts as a resource curation tool, recommending educational resources like articles, videos, and blogs, which could help save time. AI tools in

learning management systems could also help identify at-risk students who need more support and how such students could be helped.

Another of AI's advantages is its accessible nature. AI is just a click away with the internet and electricity. It is available 24/7; it neither sleeps nor slumbers, especially with the paid version. The sky is only the starting point, with immediate feedback that transcends the barriers of space and time. AI is also available to people with special needs through its interactive nature and content. The dyslexic reports using GenAI assist in their spelling. Those challenged in their English grammar and vocabulary, or whose first language is not English, also find using GenAI helpful as a correcting tool to fine-tune these aspects of their writing. It could thus assist in learning a new language and serve as a language support system.

Furthermore, AI is a tool that can be employed to support a large number of students concurrently beyond what human instructors could provide to similar audiences at once. This is especially pertinent in the Nigerian context, where the ratio of teachers to learners is high (Clugson, 2024; eSchool News, 2024). In Nigeria, where there is a high teacher-to-student ratio, both students and lecturers can leverage AI assistance. A few studies also demonstrate the potential of AI to enhance learning. De Simone et al (2025) report that AI-powered tutoring with adequate design and deployment can transform the education landscape of resource-limited settings.

Demerits of AI on Nigerian Higher Education
There are several cons of AI in education. One of its major demerits is that it paves the way for cheating, dishonesty, and plagiarism, thus subverting academic integrity (Olojede, 2024). We all know too well that an entire essay, thesis, assignment, or project can be written using AI, and it will only take a discerning mind to note the problem with the write-up. Thus, the ability of AI to generate content that seems accurate and in human language encourages academics to resort to it, with the idea that it assists them in working more effectively and efficiently.

This disadvantage has wide-ranging implications not just in the immediate but also remotely. Firstly, reliance and over-reliance could be detrimental to the continuous use of the brain, thus engendering mental or cognitive atrophy. Furthermore, it could also lead to a loss of relevant skills, such as paraphrasing and summarising, if one continues to use AI tools to do this (Gerlich, 2025). This example comes more to life when we imagine youngsters born in the age of AI who never learned how to paraphrase or summarise on their own. Can we imagine how smart they would grow up to be? How well will they be able to think on their feet without resorting to AI to do this for them? Or even adults who continue to resort to AI to carry out some seemingly mundane tasks? How well would each of these categories of people be able to create, evaluate, synthesise and analyse based on Bloom's taxonomy? (Bloom, 2001; Olojede, 2024).

Many AI users may not realise that they have literally stopped thinking deeply/ruminating about issues and solutions, which sometimes take days or weeks to arrive at something, traditionally called 'brainstorming.' Some AI users literally stopped being mentally active, or the level of their mental activeness has declined as a result of the use of AI. This is because AI use now provides an avenue not to be so active given that users go to it for directions and ideas on a myriad of issues, thus making academics to task the brain less with all the advantages neuroscience has told us are attached to tasking the brain such as its expansion and the ability to do much more. In particular, such as reducing the possibility of dementia conditions such as Alzheimer's (niDirect, 2024). Many now use AI as a thinking pad. How do these ideas impact the Nigerian student's learning development and cognition, given that in recent times, employers have decried the quality of graduates being churned from our higher institutions? If care is not taken, the prevalence of AI could further contribute to diminishing the quality of our graduates.

Beyond conjectures, evidence has emerged on the impact of AI. De Vinci Open Education Study (2024) reported how AI breeds overreliance on AI, with 52% of 1600 students sampled reporting that ChatGPT influences their choices and another 51% stating that they find it hard to do away with ChatGPT. Fan et al. (2024:1) report that AI can make learners rely on it with the possibility of instigating "metacognitive laziness." Lee et al. (2025:1) noted that a "higher confidence in GenAI is associated with less critical thinking, while higher self-confidence is associated with more critical thinking" while Hanstein (2023:127) noted that some students also experience a decline in the quality of learning due to dependence on technology."

As evidence continues to emerge on the impact of AI in higher education, Lehmann et al. (2025) initially did not find any impact of LLMs on general learning. However, exploratory analyses and field research revealed LLMs' impact depends on usage. The scholars thus recommend customised use to suit the contexts of education and learners' needs. In the same vein, Bastani et al (2025:1) note, "Consistent with prior work, our results show that access to GPT-4 significantly improves performance (48% improvement for GPT Base and 127% for GPT Tutor). However, we additionally find that when access is subsequently taken away, students actually perform worse than those who never had access (17% reduction for GPT Base). That is, access to GPT-4 can harm educational outcomes. …thus, to maintain long-term productivity, we must be cautious when deploying generative AI to ensure humans continue to learn critical skills."

Additionally, the advent of AI has also somewhat shifted attention from perennial issues teachers guide students on, such as ensuring students learn how to communicate their ideas in writing in the form of term papers, assignments and long essays (creative writing), to ensuring that they know how to craft effective prompts in their use of AI as they would use it all the same. The prevalence of AI tools has brought about an era where academic institutions are initiating a 'damage control' measure to train students on how to use AI ethically, to ensure that assessments are above the standard of AI, to institute a policy to guide its use, etc. It has

overshadowed many of the traditional issues in academia to initiate new, pressing ones that need immediate attention, thus inadvertently increasing the workload.

Another major disadvantage of AI in Nigerian higher education is the lack of awareness of the risks and its inaccuracy (OpenAI, 2023) and the fact that it sometimes hallucinates (Alkaissi and McFarlane, 2023). OpenAI, for example, underscores the inaccurate nature of ChatGPT: "While tools like ChatGPT can often generate answers that sound reasonable, they cannot be relied upon to be accurate" (OpenAI website). Similarly, UNESCO Guidance (2023: 8) notes, "Moreover, despite its fluent and impressive output, GenAI cannot be trusted to be accurate. Indeed, even the provider of ChatGPT acknowledges. Most often, the errors will go unnoticed unless the user has a solid knowledge of the topic in question."

Beyond these, there is a general lack of awareness of the controversies surrounding the use of AI in education and in Nigeria. Controversies such as "worsening digital poverty, outpacing national regulatory adaptation, use of content without consent, unexplainable models used to generate outputs, AI-generated content polluting the internet, lack of understanding of the real world, reducing the diversity of opinions and further marginalising already marginalised voices, generating deeper fakes" (UNESCO, 2023:14-17). The worsening of the digital divide is especially pertinent to Nigeria as a country in the Global South, already experiencing intra-country and inter-country digital poverty. With the current global digital economy in which AI is one of its key components, Nigeria's digital divide in relation to the Global North is further exacerbated. One disadvantage is that Nigerian students and lecturers are further at a disadvantage compared to the students and lecturers in the Global North. This is not even mentioning how the advent of AI in Nigerian higher education exerts pressure on the lack of or epileptic basic infrastructure, such as electricity and stable internet bandwidth, in schools. It thus has financial implications, worsening existing access to technology already prevalent globally.

Further, in particular as academics in Nigeria with a history of colonialism and its subsequent influence and impact on our lives, there are various proposals to decolonise the curriculum as an essential part of our work. Given this, we must be worried about the new form of digital colonialism. (Kwet, 2019; Muldoon & Wu, 2023; Birhane, 2023; Ndiaye, 2024; Hao, 2022; Couldry & Mejias, 2018; Couldry & Mejias, 2022; Zygmunt, 2011; Adams, 2021; Varon, 2021). Digital colonialism is fuelled by international economic disparity in political power, which is intertwined with and furthers historical colonialism. An example of labour exploitation, which signals digital colonialism, is seen in the report on the exploitation of Kenyans by OpenAI to remove toxic content from ChatGPT (Perrigo & Zorthian, 2023). The advent of AI and digital colonialism has thus brought the clamour to decolonise AI. This decolonisation project of AI requires concerted efforts from Nigerian academics and other stakeholders like big tech, policymakers, and civil society organisations from both the Global South and the Global North. First, to clarify what is required to decolonise AI in various contexts, and second, whether mechanisms to assess decoloniality demands are achieved.

There are many other demerits relating to data privacy concerns (Sebastian, 2023; Wieringa et al., 2021), algorithmic biases, technology transfer on education, impacts on culture and work ethic (Olojede, 2024), pedagogical and technological (Olojede & Olakulehin, 2024), dehumanised learning experiences (Clugson, 2024), energy costs of AI (WEF, 2024) that this paper has not discussed.

Recommendation and Conclusion

From the foregoing, the concern with AI in Nigerian higher education revolves around the availability of infrastructure, ethics, cognition, and the environment. How can the goods of AI in Nigerian education be harnessed to mitigate or minimise the numerous disadvantages? Given the impact of technology transfer, its quick diffusion and its ubiquitous nature leave us no choice in its influence and impacts, which we are currently experiencing.

First, critical AI literacy for all lecturers. There is a need to upskill lecturers on integrating AI into teaching and research in a responsible, inclusive, safe/sustainable, and ethical way. The 'critical' caveat precedes mere AI literacy because of the ever-evolving AI landscape with novel challenges hence, lecturers need to be able to query and question issues that may emerge that their initial training may not have covered.

Second, an AI ethics committee should be constituted to oversee all issues relating to AI. While it is usually better not to reinvent the wheel, the current ethics review board or committee might be inadequate to handle the ethical issues AI poses in education. This is because AI technology possesses agency and an epistemic black box, making AI unlike the previous technologies. This agency and black box tend to lock users in AI's parameters (Buijsman et al., 2025). Reconstituting the ethics committee is further pertinent because of data protection issues and access, as data has become an invaluable fluid resource (Glaser, 2007).

Third, establish a data centre. Data in the age of AI has been described in various ways. Some refer to it as 'life', 'the new oxygen', 'water', 'currency', and so on—all these point to the significance of data. It is important to guard our data jealously and be wary of grants, proposals, MOUs, and contracts, especially from the Global North and through channels from unsuspecting colleagues mirroring historical colonialism. Our time in history is even more important not to jump at funding bodies or juicy proposals. There is a need to be more discerning and strive for equitable partnerships rather than mere transactional ones that sap our institutions of invaluable resources.

Fourth, crafting, instituting, and unveiling an AI ethics policy to guide lecturers and students in integrating and using AI is essential. Establishing a policy for AI use for students and lecturers would define what is permissible and impermissible and would go a long way in sanitising and regulating AI use. Fundamentally, there is a need to have a 'pedagogy first' policy, where teaching, learning, and its intended outcomes influence the choice of technology rather than the other way around.

In conclusion, as academics in Nigeria, the time is now to take the bull by the horns and shape the future of AI in our institutions and, indeed, in Nigeria, the lives of our students and wards because AI is still evolving and its full impact will only be felt in the remote future.

Statement on Transparency – No part of this paper was written with AI

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Footnotes

1. One could use AI as a learning companion, especially the paid version. It is important to note that not all AI has this feature, in fact, fewer AI has this, but marketing hype touts all as possessing this capability. Many GenAIs do not have a memory to recall what had previously been exchanged with them.