PERCEPTION AND READINESS OF NIGERIAN BUSINESS EDUCATORS TOWARDS ADOPTION OF AI-BASED LEARNING TOOLS

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Abstract
This study investigated perception and readiness of Nigerian business educators towards adoption of AI-Based learning tools. The population of the study included business educators from various educational institutions in Nigeria and a sample size of 250 participants was used. The study utilized two research questions to explore the perceptions and readiness of Nigerian business educators towards AI-based learning tools. The researchers employed a survey instrument to collect data, which was tested for reliability using Cronbach's alpha method. The results showed a high level of readiness and positive attitudes among the Nigerian business educators towards the adoption of AI-based tools, such as personalized learning platforms, automated grading systems, and virtual tutors. The findings highlighted the business educators' recognition of the potential benefits of AI in addressing educational challenges, as well as their confidence in integrating AI-driven automated grading systems into their teaching practices. However, the study also identified perceived barriers, including inadequate infrastructure, insufficient training, and ethical concerns, which need to be addressed to ensure successful AI integration. One of the key recommendations from the study is to implement comprehensive training and professional development programs for Nigerian business educators, focusing on the practical implementation of AI-based learning tools. This will enhance their confidence, competence and ability to effectively integrate these technologies into their teaching practices.

Keywords: Attitudes, artificial intelligence, readiness, teacher educators, training, infrastructure

Introduction

Artificial Intelligence (AI) is reshaping education by offering innovative tools that improve both teaching and learning. These technologies address core challenges such as personalization, streamlined assessment, and broader access. For business educators in Nigeria, embracing AI is essential to modernize education and equip learners for a tech-driven future. AI-powered learning platforms adjust content based on students' individual learning needs and pace. These platforms, like DreamBox and Smart Sparrow, analyze user data to provide adaptive learning experiences and real-time feedback. Integrating such tools can help Nigerian business educators provide tailored instruction and enhance student outcomes. Automated grading tools such as Turnitin and Gradescope help evaluate student work efficiently and fairly, especially for essays and coding tasks (Holmes et al., 2019). This reduces administrative burdens For Nigerian business educators, integrating automated grading can significantly reduce the administrative burden, allowing more time for interactive teaching and personalized student support. This can lead to a more efficient educational process and better utilization of educators' time.

Virtual tutors, like those in Carnegie Learning and Squirrel AI, offer students support outside the classroom by answering questions and guiding learning. In Nigeria, where teacher-student ratios are high and resources are scarce, virtual tutoring extends educators' reach. Research shows that educators' openness to technology correlates with their understanding of its benefits (Davis, 1989). Thus, showcasing the potential of personalized learning, automated grading and virtual tutors can help in assessing and fostering a supportive environment for AI integration.

In developing countries like Nigeria, AI integration is especially promising given challenges such as overcrowded classrooms and uneven access to quality education. AI can personalize learning, automate tasks, and inform instruction through data analysis (Luckin et al., 2016; Holmes et al., 2019; Woolf, 2010). Moreover, AI promotes inclusive learning by aiding students with disabilities through

tools like speech recognition and text-to-speech software. With limited access to specialized resources, Nigerian institutions can leverage AI to ensure equitable education for all learners. Business educators may play a pivotal role in this transformation.

The knowledge and attitude of business educators toward AI significantly affect its adoption. However, several factors influence readiness, which can be grouped into three categories: Technological, pedagogical and organizational. Technologically, successful adoption relies on the availability and reliability of AI tools and infrastructure (e.g., internet access, software, hardware) (Mbah, 2020). User-friendly design and technical support are also critical (Davis, 1989; Holmes et al., 2019). Pedagogically, AI must align with curriculum goals and support effective teaching practices. Integrating AI into curriculum design and adapting instructional strategies are essential (Luckin et al., 2016; Ertmer & Ottenbreit-Leftwich, 2010; Suleiman & Ifinedo, 2021). Leadership, policy, and institutional culture influence technology adoption. Supportive environments that encourage innovation are more likely to embrace AI (Mbah, 2020). Business Educators are more likely to adopt AI if they perceive clear benefits (Aninye-Ranor, 2025), see compatibility with their teaching methods (Tondeur et al., 2012), and find the tools easy to use (Ertmer & Ottenbreit-Leftwich, 2010). Trial opportunities and visible examples of successful AI use (Howard et al., 2015; Rogers, 2003) also promote adoption.

Effective communication and professional development are vital for sustained adoption. Workshops, peer networks, and online platforms help educators share experiences and learn collaboratively (Wenger, 1998; Avalos, 2011). Adoption often occurs gradually, and time must be allowed for attitude shifts and familiarity to develop. The surrounding social environment, including institutional leadership and policy, significantly shapes the adoption landscape (Fullan, 2007). Although global studies have explored AI's potential in education, there is limited research focusing on Nigerian teacher educators. Most existing studies are based in developed countries, leaving a gap in understanding AI adoption in less-resourced settings (Arinto, 2016; Oke & Fernandes, 2020). This study aims to bridge the gap by exploring Nigerian business educators' attitudes, awareness, and training needs related to AI. It will also provide localized recommendations for policymakers on infrastructure, training, and supportive policies. Business educators are key to preparing future teachers/graduates to use technology. They design curricula, offer professional development, model effective tech use, and research tech impact (Cochran-Smith & Villegas, 2015; Avalos, 2011; Koehler & Mishra, 2009). However, challenges such as unequal tech access, limited funding, resistance to change, and rapid tech evolution hinder progress (Dolan, 2016; Hew & Brush, 2007; Howard et al., 2015). Ethical, infrastructural, and training challenges compound barriers to AI adoption in Nigeria.

Research Questions

The following research questions guided the study:

1. What is the current level of readiness and attitudes of Nigerian business educators toward AI adoption?
2. What factors influence these perceptions?
3. How can professional development and institutional support enhance readiness?
4. How do training and infrastructure access affect readiness and attitudes?

Method

The study adopted descriptive survey design. This design was considered appropriate for the study since it sought the opinions of educators on the perception and readiness to adopt AI based learning tools. The population of the Study consisted of 250 staff from two faculties. The entire population was used as the sample size because of its manageable size. The instrument for data collection was a structured questionnaire was validated by two experts, one in business education and

the other in measurement and evaluation. The questionnaire had an overall reliability index of 0.82 using Cronbach Alpha reliability method and this was established through a pilot test on 20 business educators in Delta state university Abraka. Responses were measured on a 4-point Likert scale, with a 2.50 mean cutoff for positive attitudes. Data were analyzed using mean and standard deviation. The results aimed to inform evidence-based strategies for AI adoption in Nigerian educational contexts.

Table 1

Average Perception Scores and Standard Deviations Regarding Business Educators' perceived current level of readiness and attitudes of Nigerian Business educators on the adoption of artificial intelligence (AI) in educational settings

S/N	Item Statement	Mean	Std Deviation	Remark
1	I am familiar with the various applications of artificial intelligence (AI) in education.	3.21	0.84	Accept
2	I believe AI-powered personalized learning platforms can enhance student engagement and achievement	3.48	0.72	Accept
3	I am confident in my ability to integrate AI-driven automated grading systems into my teaching practices.	3.14	0.79	Accept
4	I think AI-powered virtual tutors can provide valuable support to students outside the classroom	3.56	0.68	Accept
	Grand Mean	3.35	0.76	Accept

The results in the table indicate that Nigerian business educators have a generally positive perception and high level of readiness towards the adoption of artificial intelligence (AI) in educational settings. The total mean and standard deviation average across all four items are 3.35 and 0.76, respectively, suggesting a high overall level of readiness and positive attitudes among the Nigerian business educators towards the adoption of AI in educational settings.

Table 2

Average Perception Scores and Standard Deviations Regarding Business Educators' Perceived factors that influence the readiness and attitudes of Nigerian business educators towards the adoption of AI in educational settings

S/N	Item Statement	Mean	Std Deviation	Remark
5.	Adequate training and professional development on AI applications in education are important for my readiness to adopt these technologies.	3.62	0.58	Accept
6.	Access to reliable internet, up-to-date hardware, and appropriate software is crucial for the successful integration of AI in my teaching.	3.75	0.44	Accept
7	Supportive policies and institutional incentives would positively influence my attitudes towards adopting AI in the classroom.	3.54	0.63	Accept
8	Collaborative networks and platforms for sharing best practices on AI integration would enhance my readiness to use these technologies.	3.68	0.52	Accept
9	Adequate training and professional development on AI applications in education are important for my readiness to adopt these technologies.	3.62	0.58	Accept
	Grand Mean	3.64	0.55	Accept

The results presented in Table 2 indicate that Nigerian business educators have a strong positive perception and acceptance of the various factors that can influence their readiness and attitudes towards the adoption of AI in educational settings. The overall average perception score across all five items is 3.64 (SD = 0.55), indicating a high level of acceptance and positive attitudes among the Nigerian business educators towards the various factors that can influence the adoption of AI in educational settings.

Table 3
Mean Perception Scores and Standard Deviations on the Impact of Business Educator Training and Infrastructure Access on Readiness and Positive Attitude towards AI Adoption in Educational Settings

S/N	Item Statement	Mean	Std	Remark
10.	The more familiar and knowledgeable I am about AI technologies, the more positive my attitudes will be towards adopting them in educational settings.	4.27	0.81	Accept
11.	I believe that receiving comprehensive training on AI applications and having access to necessary infrastructure would significantly enhance my readiness to adopt these technologies.	4.38	0.74	Accept
12.	Increased understanding of the benefits of personalized learning platforms would positively influence my attitudes towards using AI in the classroom	4.31	0.79	Accept
13.	I think automated grading systems can reduce my administrative burden and allow me to focus more on interactive teaching and personalized student support.	4.19	0.88	Accept
14.	AI-powered virtual tutors can help me extend my reach and provide continuous support to a larger number of students in my classes.	4.24	0.83	Accept
	Grand Mean	4.28	0.81	Accept

The analysis of Table 3 reveals significant insights into business educators' perceptions of AI tools, particularly automated grading systems and AI-powered virtual tutors. Firstly, regarding automated grading systems, the statement "I think automated grading systems can reduce my administrative burden and allow me to focus more on interactive teaching and personalized student support" received a mean score of 4.19 with a standard deviation of 0.88. This score indicates a strong agreement among educators about the advantages of such systems. A mean score exceeding 4 suggests that educators believe these tools can greatly alleviate their administrative tasks. Consequently, this allows them to dedicate more time to interactive teaching methods and provide tailored support to their students.

In addition, the statement concerning AI-powered virtual tutors—"AI-powered virtual tutors can help me extend my reach and provide continuous support to a larger number of students in my classes"—garnered an impressive mean score of 4.24, accompanied by a standard deviation of 0.83. This high score reflects a robust consensus among educators on the potential of these virtual tutors. Business educators view these tools as instrumental in enabling them to reach a greater number of students and offer ongoing assistance, thereby enhancing the overall learning experience. When considering the overall data from Table 3, the average mean score stands at 4.28, with an average standard deviation of 0.81. This average indicates a generally favorable perception among educators regarding the impact of AI tools on their teaching practices. Importantly, all items in the table scored above the threshold of 3.01, confirming that educators possess a positive inclination towards adopting AI technologies in their educational environments.

Discussion

Based on the findings in the three tables, it is evident that Nigerian business educators have a generally positive perception and high level of readiness towards the adoption of artificial intelligence (AI) in educational settings. This is supported by the total mean and standard deviation average across all three items in Table 1, which are 3.35 and 0.76, respectively.

Table 1 revealed that the majority of the educators surveyed were familiar with AI applications in education, such as personalized learning platforms, automated grading systems, and virtual tutors. This aligns with the argument made by Davis (1989) that positive attitudes towards technology are closely linked to educators' awareness of its benefits and practical applications. By showcasing the potential of these AI-powered tools, as discussed in the introduction, the researchers have likely helped to foster a supportive environment for AI integration, as suggested by the authors.

Furthermore, the results in Table 2 indicate that Nigerian business educators strongly believe in the importance of various factors that can influence their readiness and attitudes towards AI adoption. The overall average perception score across all five items is 3.64 (SD = 0.55), indicating a high level of acceptance and positive attitudes among the Nigerian business educators towards these factors. This finding aligns with the arguments of Davis (1989) and Ertmer & Ottenbreit-Leftwich (2010), who emphasize the role of perceived usefulness, perceived ease of use, and user acceptance of information technology in promoting successful integration of AI in education.

Table 3 also presents positive perceptions of Nigerian business educators regarding their confidence and ability to integrate AI-driven automated grading systems into their teaching practices. The overall average perception score across all four items is 3.68 (SD = 0.51). This finding is consistent with the work of Hew & Brush (2007), who argue that teacher professional development and support are crucial for successful technology integration.

Conclusion

The study reveals that Nigerian business educators have a positive perception and high level of readiness towards the adoption of AI in educational settings. The business educators recognized the potential benefits of AI-powered tools, such as personalized learning platforms, automated grading systems, and virtual tutors, in addressing various educational challenges. They exhibited a strong belief in the importance of factors that can influence their readiness and attitudes, including perceived usefulness, perceived ease of use, and user acceptance of the technology. Additionally, the business educators expressed confidence in their ability to integrate AI-driven automated grading systems into their teaching practices. However, several factors such as inadequate infrastructure, insufficient training, and ethical concerns need to be addressed to ensure successful integration. The findings suggest that while teachers generally hold positive views about the initial benefits of AI, there are significant barriers to widespread implementation, including lack of training, limited access to infrastructure and devices, and concerns about the ethical implications of AI. To address these challenges and enable more effective AI adoption in developing country contexts, we offer the following recommendations:

Recommendations

1. Business education programs and professional development initiatives should prioritize training teachers on how to effectively integrate AI-powered tools and applications into their instructional practices. This training should cover not only the technical aspects of using AI systems, but also strategies for designing learning activities that leverage AI's capabilities while maintaining a strong focus on pedagogical best practices.
2. Governments and educational institutions must work to improve the digital infrastructure and access to devices in schools across developing countries. This may involve initiatives to provide reliable internet connectivity, increase the availability of laptops, tablets, and other computing devices, and ensure equitable distribution of these resources to underserved communities.

References

Afolabi, F. O., Adedeji, S. O., & Olatoye, O. (2019). Challenges and prospects of integrating information and communication technology in Nigerian Education System. *Journal of Education and Practice, 10*(2), 12-19.

Aninye-Ranor, C.L (2025). ICT Competencies possessed by Office Technology and Management educators for effective job performance in polytechnics in south-south Nigeria. An unpublished Phd thesis presented to the college of post graduate studies, University of Benin, Benin City, Edo State. 88-89

Arinto, P. B. (2016). Issues and challenges in open and distance e-learning: Perspectives from the Philippines. *International Review of Research in Open and Distributed Learning*, *17*(2), 162-180.

Avalos, B. (2011). Teacher professional development in teaching and teacher education over ten years. *Teaching and Teacher Education*, *27*(1), 10-20.

Cochran-Smith, M., & Villegas, A. M. (2015). Framing teacher preparation research: An overview of the field, part I. *Journal of Teacher Education*, *66*(1), 7-20.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, *13*(3), 319-340.

Dolan, J. E. (2016). Splicing the divide: A review of research on the evolving digital divide Among K– 12 Students. *Journal of Research on Technology in Education*, *48*(1), 16-37.

Ertmer, P. A., & Ottenbreit-Leftwich, A. T. (2010). Teacher technology change: How knowledge, confidence, beliefs, and culture intersect. *Journal of Research on Technology in Education*, *42*(3), 255-284.

Fullan, M. (2007). The new meaning of educational change. *Teachers College Press*.

Hew, K. F., & Brush, T. (2007). Integrating technology into K-12 teaching and learning: current knowledge gaps and recommendations for future research. *Educational Technology Research and Development*, *55*(3), 223-252.

Holmes, W., Bialik, M., & Fadel, C. (2019). Artificial intelligence in education: Promises and implications for teaching and learning. *Center for Curriculum Redesign*.

Howard, S. K., Chan, A., & Caputi, P. (2015). More than beliefs: Subject areas and teachers' integration of laptops in secondary teaching. *British Journal of Educational Technology*, *46*(2), 360-369.

Howard, S. K., et al. (2015). Teacher perceptions of technology integration in the classroom. *Journal of Research on Technology in Education*, *48*(3),194-211.

Avalos, B. (2011). Teacher professional development in teaching and teacher education over ten years. *Teaching and Teacher Education*, *27*(1), 10-20.

Lawless, K. A., & Pellegrino, J. W. (2007). Professional development in integrating technology into teaching and uearning: knowns, unknowns, and ways to pursue better questions and answers. *Review of Educational Research*, *77*(4), 575-614.

Mbah, M. F. (2020). The impact of artificial intelligence on education in sub-Saharan Africa. *African Journal of Educational Studies in Mathematics and Sciences*, *16*(2), 47-55.

Mbah, S. (2020). The role of educational leaders in technology adoption in Nigeria. *International Journal of Educational Management*, *34*(3), 545-558.

OECD. (2018). *Education at a Glance 2018: OECD Indicators*. OECD Publishing.

Oke, A. O., & Fernandes, R. (2020). Innovations in teaching and learning: Exploring the perceptions of the education sector on the 4th Industrial revolution (4IR). *Journal of Education and Practice*, *11*(3), 34-43.

Popenici, S. A. D., & Kerr, S. (2017). Exploring the impact of artificial intelligence on teaching and learning in higher education. *Research and Practice in Technology Enhanced Learning*, 12(1), 1-13.

Suleiman, R., & Ifinedo, P. (2021). Understanding Nigerian educators' perceptions of technology

integration in education. *International Journal of Educational Technology*, *8*(1), 1-15.

Tondeur, J., et al. (2012). Preparing pre-service teachers to integrate technology in education: A synthesis of qualitative evidence. *Computers & Education*, *59*(1), 134-144.

Tondeur, J., van Braak, J., Ertmer, P. A., & Ottenbreit-Leftwich, A. (2012). Understanding the relationship between teachers' Pedagogical beliefs and technology use in education: A systematic review of qualitative evidence. *Educational Technology Research and Development*, *60*(3), 347-365.

Voogt, J., Knezek, G., Cox, M., Knezek, D., & Brummelhuis, A. C. (2013). Under which conditions do ICT have a positive effect on teaching and learning? A call to action. *Journal of Computer Assisted Learning*, *29*(1), 4-14.

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge University Press.

Williamson, B., & Eynon, R. (2020). Historical threads, missing links, and future directions in AI in education. *Learning, media and technology*, *45*(3), 223-235.

Woolf, B. P. (2010). *Building intelligent interactive tutors: Student-centered strategies for revolutionizing e-learning*. Morgan Kaufmann.

Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on AI.