

Leveraging Artificial Intelligence (AI) for Educational Development in Nigeria: Examining The Challenges and Opportunities

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ABSTRACT

Objective: This study aims to explore the challenges and implications of using Artificial Intelligence (AI) as a pedagogical tool to enhance education in Nigeria. Specifically, it examines the potential obstacles and opportunities AI presents for educational growth and development in the Nigerian context. **Method:** The research adopts an exploratory approach, utilizing secondary data sources such as textbooks, published papers, internet resources, and newspaper reports. The data were organized thematically and analyzed through content analysis, guided by the connectivism learning theory as the analytical framework. **Results:** The findings indicate that AI has the potential to customize learning experiences to suit individual student needs, abilities, and learning styles. It can provide personalized support through real-time feedback, enhancing the overall learning process. **Novelty:** This study contributes to the discourse on integrating AI in education by highlighting its potential to improve Nigeria's educational system. It emphasizes the need for government investment in AI-driven educational tools, the enhancement of teaching materials, and curriculum development to foster a more scientific and globally competitive educational environment.

INTRODUCTION

The importance of education in driving social development makes it an indispensable part of any civilisation. By bringing people together in the quest of knowledge and opportunity and equipping them with the skills and capacities necessary to thrive in the modern world, education serves as a unifying and progressive force for every nation. Education is a powerful tool for national development, and it changes the world by imparting knowledge, ideas, talents, and creativity that are necessary for solving global problems [1]. As a cornerstone of any thriving and sustainable society, education plays an essential role in today's world and deserves proper attention in every society whether developed or developing.

Barro and Lee argue that a larger supply of educated people who can contribute to the development and innovation of contemporary world are associated with higher labour productivity across all civilisations. As a result, education is a globally acknowledged critical development indicator due to the indisputable relationship between it and societal advancement shown over the years [2]. According to the United countries investing in education is the best way for countries to foster prosperous, healthy, and equitable societies since it is the bedrock of every civilisation. According to

Article 26 of the 1948 Universal Declaration of Human Rights, everyone has the right to education [3]. In addition to being a fundamental human right, education opens doors to new opportunities and freedoms and helps people develop into their full potential. Raising the level of education in a society is essential for any nation since it speeds up the process of social development, which in turn makes globalisation and continuous development possible [4]. Little wonder Kremer state that education influences social development such as economic prosperity, intellectual growth, and lasting peace thereby making it a catalyst for development. The goal of educational development is to improve teaching and learning practices throughout a society's educational systems. Educational development is a more efficient, inclusive, and successful avenue which prepares students for their future endeavours. According to Asiegbu *et al.* educational development is the continuous professional progress and construction of infrastructures such as buildings, internet service, provision of teaching aids to enable student and stakeholder in the learning process [5]. The educational system in Nigeria stands to gain even more from the use of artificial intelligence (AI) in the teaching process because of the numerous benefits that comes with it. Adlawan state that algorithm creation, machine learning, deep learning, and natural language processing applications are all part of artificial intelligence (AI). With the above technologies, artificial intelligence has the potential to greatly benefit organisations and individuals by increasing efficiency, production, saving time and effort, and overall performance. As a result, it has become a major influence on education. UNESCO supports AI in education throughout the world because of their call for countries to employ AI to improve their educational systems in a bid to meet the unique needs of each student [6]. Kabudi *et al.* note that educational administrators may make use of AI to create individualised lesson plans. Cloud computing and other AI-based tools may help teachers provide course materials to students in a variety of ways to meet their individual needs. Students at Nigerian schools can therefore leverage on the benefits of artificial intelligence in the learning process through interacting with instructional chatbots made possible by AI, which boosts their understanding and encourages independent study [7].

Statement of the problem. Human capital, technological advancement, and societal cum economic well-being are all influenced by education. While many nations are improving their educational systems with the help of technologies like artificial intelligence (AI), Nigeria's educational sector is still facing a few problems that make progress slow and prevent certain schools from offering better educational instructions. When it comes to improving Nigeria's scientific and technical education, both academics and practitioners have been vocal in their criticisms of the government's policies [8]. Oranu state that over dependence on theoretical learning approaches has led to the systematic neglect of technical and scientific education programs in Nigeria. He revealed that the academic curricula in Nigeria lack a scientific foundation, which hinders the country's progress in education. Several African academic schools (in Nigeria specifically) have been the subject of criticism from the Open Institute of Technology (OPIT), an online school with EU accreditation [9]. It is argued that the gap between what

employers' need and what schools produce is due to over dependence on theoretical knowledge at the expense of practical application. For both students and lecturers from Nigeria to compete on a global scale, we must immediately begin to rethink our national curriculum. Problems with insecurity also slow down Nigeria's educational system. Kidnappings of both students and teachers affect educational development in some part of the country. Isenyo report how about over 280 students and teachers at LEA Primary School and Government Secondary School in Kuriga, Kaduna State, were kidnapped sparking widespread outrage throughout the country. When Nigerian lecturers feel unsafe working here, they leave for greener pastures, lowering our human capital index and contributing to brain drain [10]. The lack of initiatives to educate and train educators is another barrier to educational development in Nigeria. Some schools' service quality suffers since their teachers aren't part of their professional development and training programs. The neglect of continuous professional development for educators may be at the root of the current crisis in Nigeria's educational system. Teachers' professional development at all levels should be a top priority for Nigeria if the country's educational system is to progress [11]. Educators today face a constantly changing field, and teacher preparation programs strive to provide their students with the knowledge and abilities they need to succeed in this environment. Financial challenges also have a substantial influence on service delivery, which in turn hinders educational growth in Nigeria due to poor facilities and a lack of educational funding [12]. According to Olunloyo, qualified teachers leave Nigeria for countries with stronger funding and support for STEM education because of the country's lack of investment in STEM programs. This study therefore seeks to understand how artificial intelligence (AI) can contribute to educational progress in Nigeria while also identifying possible challenges [13].

Research questions

1. What are the possible challenges of adopting artificial intelligence as a pedagogical tool for educational development in Nigeria?
2. What are the prospects of adopting artificial intelligence for educational development in Nigeria?

RESEARCH METHOD

Literature Review: Educational development. For societies all over the world to progress, education must be taken seriously. Investing in research and the technical learning process can help Nigeria enhance its scientific education and, by extension, its national development. Because of the many ways in which education contributes to a society's progress and development, Kremer argues that funding education is an essential development strategy [14]. As a result, Nigeria's government and other interested parties must embrace and execute new strategies for educational growth. Educational development is defined here as the steady enhancement of a country's educational system through the implementation of laws, instructional facilities, and infrastructures that raise the bar for student achievement. Improving and enhancing the quality of learning through educational policy and planning, curriculum design and reform,

teacher training, and the integration of educational technology is one of the main goals of educational development, which also serves as a means of initiating and responding to changes in the learning environment. Artificial Intelligence (AI) [15]. Because of the many benefits that come with using AI, the idea is slowly but surely finding its way into the realm of education. The use of AI in education opens up new possibilities for personalised learning, rapid feedback, and more efficient evaluation. To Cole and Kavlakoglu AI is the ability for computers and other devices to mimic human intellect in areas such as learning, understanding, problem solving, decision making, creativity, and autonomy is known as artificial intelligence (AI). Artificial Intelligence as a technological advancement tool can mimic and react to human speech, gadgets and applications. Dignum state that artificial intelligence (AI) is a component of technology learning and education management tools that aid in decision-making, instruction, and learning, and offers virtual support for individualised education [16].

Theoretical framework: Connectivism Learning Theory. Connectivism learning theory is inherently a future-focused theory of learning. It is a relatively recent pedagogical view that considers the changing nature of knowledge acquisition in our digital age while pinpointing what a learner needs to know. According to the Western Governors University connectivism was first introduced in 2005 by two theorists, George Siemens and Stephen Downes who addressed the important role technology plays in the learning process and how the digital age has increased the speed at which students have access to information. The theory states that technology is a major part of the learning process and that our constant connectedness gives us opportunities to make choices about our learning process. In connectivism, students are seen as "*nodes*" in a network. A node can be any object which is connected to another object, like a book, webpage, person, technological device or platform etc. Connectivism is therefore based on the theory that learning takes place when there is a connection or "*link*" between various "*nodes*" of information, hence learning can take place through the connection students and non-human tools such as artificial intelligence. By using the connectivism learning theory, it is considered that for there to be educational development in Nigeria, the nation must mirror learning process from an ever-changing digital landscape in that learning pattern is never static but forever dynamic [17]. According to Jackman scholars of connectivism generally believe that expanding knowledge is ultimately more important than considering prior knowledge. Hence, connectivism allows learners to situate new knowledge within existing schemas of understanding. With the adoption of AI into the Nigeria teaching pattern, both students and lecturers will become open to new knowledge which will cumulatively aid in the learning process while still using the theoretical pattern of learning. The use of artificial intelligence as a technological teaching and learning tool in Nigeria can bring about educational development while equipping all stakeholders with the requisite skill to compete with their colleagues globally [18]. This is because AI help lecturers to empower their students' competencies, attitudes, and readiness to communicate with other learners, solve authentic problems, and develop

ideas, theories, and solutions innovatively and collaboratively rather than focusing only on the theoretical aspects of learning [19].

The study employed exploratory research design. This is because, due to the nature of the study's objectives and framework, exploratory research designs tend to make heavy use of qualitative methods of data collecting and include little scientific procedure and rigour [20]. For this study on AI and educational advancement in Nigeria, content analysis was also used to make analyze the data collected from secondary sources such newspapers, textbooks, internet resources, and other published articles.

RESULTS AND DISCUSSION

Results

Identifying the possible challenges facing artificial intelligence as a pedagogical tool for educational development in Nigeria. The field of education stands to benefit greatly from the use of artificial intelligence in the years to come. It is impossible to overstate the significance of AI for the improvement of education. There is no question that introducing AI into the classroom represents a sea change, opening up new possibilities for pedagogical innovation and administrative efficacy. Nevertheless, the adoption of artificial intelligence (AI) is still in its early stages in many developing nations, including Nigeria [21]. This is due to a few factors, including but not limited to: outdated academic curricula, a lack of necessary technical skills, insufficient funding, uncertainty, ethical concerns, ineffective government policies, user attitude, poor infrastructure, and poor network connectivity [22]. While pedagogical practices and learning activities throughout the world continue to evolve in response to scientific discoveries, it appears that Nigeria's academic programs are more grounded in theory. Digital education and artificial intelligence (AI) are here to stay in Nigeria, according to a professor at the University of Lagos, but the present educational system lacks the tools to promote their widespread use. This is due to the fact that students are not adequately prepared to compete on a global scale within the current framework of Nigerian academic curriculum. According to IT-Pulse , the heads of National Information Technology Development Agency (NITDA) and the Nigeria's Educational Research Agency (NERDC) both affirmed that there is need for the country to improve her educational curricula as it will help promote digital literacy and national development [23]. Concerning the need for Nigeria to adopt a digital strategy for education and learning, Oranu bemoaned the fact that scientific education continues to confront several obstacles, such as a lack of resources and the necessary expertise in technology. Adequate funding for science-based education is a prerequisite for the use of AI as a pedagogical tool in Nigeria [24]. On top of that, educators nowadays need to know how to use technology effectively in the classroom. This necessitates acquiring the knowledge and abilities necessary for creating, deploying, and using AI systems, both in theory and practice. There is a problem with the delivery of courses since most educators are unprepared and lack the necessary expertise of AI. According to Awofiranye, in order for AI to be implementable, training for both teachers and tutors is necessary. This will

enable educational administrators to make use of the system, which has the potential to facilitate more adaptable learning and teaching methods and streamline the delivery of learning services [25]. Because of the potential for limited success and complete acceptance of AI as a teaching and learning tool in Nigeria, it is imperative that individuals acquire the necessary technical skills to keep up with technological advancements. Concerns about privacy and other ethical issues are another challenge to the widespread use of AI in the classroom. Instantaneous teacher-student reaction, time savings, and improved learning are some of the well-known advantages of artificial intelligence in education. Most people worry that AI deployment will lead them to lose their employment or at least their current style of functioning since these technologies imitate human intellect [26]. Fear and uncertainty around the adoption of artificial intelligence stem from the fact that our understanding of the technology is still in its early stages in Nigeria and that certain stakeholders have not fully grasped its advantages and benefits. Even while AI offers great promise, it also presents significant ethical challenges to institutions of higher learning, corporations, and governments. Accountability, data bias, transparency, and socio-economic hazards are some of the significant areas that several research have shown as potential AI repercussions on the African social environment. AI has the potential to introduce bias, uncertainty, and learning imbalance due to its ability to replicate human activities [27]. Reason being, AI system design necessitates the employment of intricate algorithms, which in turn undermine openness and confidence. While organisations like the Nigerian Educational Research and Development Council (NERDC) and the National Institute for Technology and Development (NITDA) are doing their part to promote science and research-based education in Nigeria, the government is yet to really force schools to abandon theory in favour of empirical teachings. Some examples of government policies include relying too much on expatriates, insufficient financing, and minimal support for industrialisation and innovation. The government's lack of supportive policies for R&D has a cumulative effect on technological progress, according to an article in Punch News online [28]. When it comes to transforming a nation's economy, raising living standards, and creating wealth, science and technology are indispensable. Moreso, a major obstacle to using AI in Nigerian classrooms is the country's inadequate network infrastructure. Nigeria needs the government to invest in infrastructure and network connection so that students and teachers may use technology in the classroom. Inadequate infrastructure and a lack of affordable networks are important obstacles to artificial intelligence adoption in Africa. As a result, the continent's infrastructure development and mobile technology network connection are moving at a snail's pace [29]. Inadequate learning and educational facilities are a problem in Nigeria, which impacts learning. Wilson and Asiegbu found that science-based learning in Nigeria faces obstacles such as a lack of reliable electricity, outdated technology, and unreliable network connections in their empirical research on E-learning and educational development in Nigeria. Potential obstacles to the widespread application of artificial intelligence (AI) in Nigerian classrooms include the aforementioned issues as well as others, such as a lack of a structured data environment

and public reactions to new technology (user attitude) all of which affect educational development [30].

Leveraging artificial intelligence (AI) for educational development in Nigeria: The prospects. Established in the 1950s, Artificial Intelligence (AI) was once characterised as a new scientific discipline that would systematically investigate the phenomena of "intelligence"[31]. AI focusses on the study and development of intelligent devices. The fast expanding technological area of artificial intelligence has the potential to revolutionise the way people learn, work, and interact with one another. Artificial intelligence fundamentally alters human behaviour, enabling enhanced efficiency and production across many industries, including education. Tahiru points out that one advantage of AI in education is that it may make learning more convenient and flexible. With AI-related infrastructures and methodologies, learners can study whenever and wherever they choose [32]. The ability to understand lessons clearly and at the correct moment is a skill that not everyone has; nevertheless, with the help of AI and its tools, students may study effortlessly and at their own speed. In a judgment-free learning environment, AI systems may offer students strategies to boost their performance. More and more students in Nigeria, regardless of their socioeconomic status or where they live, will have access to high-quality educational materials thanks to the incorporation of AI into the learning pattern [33]. This will increase accessibility while also making learning more adaptable. As a result, this benefit makes it much simpler to provide universal access to education while also personalising the learning process, talents, and styles. Additionally, AI may aid in the creation of educational materials like quizzes, exams, and lesson plans; it can also help with grading, allowing instructors more time for direct student contact. Because AI can assist educators in creating scientific lesson plans that better prepare pupils, its incorporation into the education sector has the potential to increase both service delivery and teacher efficiency in Nigerian schools. Automating assessments is freeing up teachers to focus more on facilitating learning rather than delivering direct instruction [34]. Consequently, educators may complement their teachings with AI resources to help struggling students and provide them real-world experience via human connection. Tutorials and interactive virtual assistants, powered by AI, may better serve students by responding to their enquiries, expanding on their understanding, and guiding them step-by-step as they study. Thus, AI enhances students' critical thinking abilities via tutorials and virtual support. Inspiring people to think critically and creatively may help them adjust to new situations and careers by coming up with novel ideas [35]. By making schools in Nigeria more secure, artificial intelligence may help reduce national security threats and possible kidnapping. Administrators and parents alike may keep tabs on when teachers and students enter and exit the class or academic building. Modern AI time tracking has many advantages, as pointed out by Miashkova. AI allows organisations to keep tabs on things like staff attendance, task duration documentation, and the use of algorithms to automate project time entries, all of which lead to greater efficiency [36]. Intelligent learning systems that include AI into curriculum creation may assist students adapt to various learning

demands, assess their progress more efficiently, and deliver real-time feedback. By removing prejudice and allowing students to freely express themselves and their learning requirements, AI has the potential to greatly enhance educational curriculum in Nigeria. According to Singh and Singh, using AI-driven chatbots and virtual assistants into school administration has the potential to greatly benefit students by offering quick help and opening up new avenues for their usage in tackling complicated problems [37]. Artificial intelligence (AI) has the potential to enhance educational data analysis, which in turn may affect education policy, school administration, and resource allocation in Nigeria. This is because AI is capable of processing massive datasets. Artificial intelligence (AI) can automatically change material and teaching approaches to enhance individual performance development by collecting and analysing data regarding student performance and progress. As an AI tool, ChatGPT provides students with access to a variety of instructional resources and course plans. This is because, by addressing the issue of having too many search engines, it provides students with simple access to online resources in an integrated way [38]. With the help of AI, students may ask questions as they study. Chen *et al.* state that students may benefit from AI-powered chatbots by interacting with them, which improves their learning and helps them understand concepts better, ultimately leading to more independent study. This means that students may build self-assurance in their studying abilities while also competing with their classmates from across the world [39]. Everyone agrees that students benefit greatly from feedback that is both objective and provided at the right moment during their learning. Artificial intelligence may also be able to give comments that fit these descriptions. It is already common practice to employ AI to provide students comments on their tests or assignments [40]. To better understand how each kid is doing and to alert teachers when there is a problem, some schools are using AI systems. ChatGPT and Microsoft Bing are two examples of AI technologies that can tailor their comments to each student's work and help them track their progress at school. In light of the aforementioned benefits of AI in the classroom, Nigeria has a great opportunity to advance its educational system by capitalising on AI infrastructures and tools for learning and teaching.

Discussion

The integration of Artificial Intelligence (AI) in Nigeria's educational system presents both substantial opportunities and challenges. As highlighted in this study, AI can significantly enhance learning by providing personalized experiences, enabling real-time feedback, and improving assessment processes. These advancements can contribute to addressing some of Nigeria's long-standing educational challenges, such as outdated curricula, insufficient teacher training, and inadequate infrastructure. However, the widespread adoption of AI faces considerable hurdles, including the lack of technical expertise among educators, the need for robust digital infrastructure, and concerns regarding ethical implications such as privacy and data bias. While the potential for AI to revolutionize education is clear, its successful implementation requires a coordinated effort from the government, educational institutions, and stakeholders to address these barriers. Future research should focus on practical strategies for overcoming these

obstacles, exploring case studies of AI integration in Nigerian schools, and assessing the long-term impact on student learning outcomes. Additionally, examining how AI can be leveraged to support teacher professional development and curriculum innovation could provide valuable insights into the broader implications for Nigeria's educational growth.

CONCLUSION

Fundamental Finding : the study reveal that AI has significant potential to revolutionize Nigeria's educational system by enhancing academic performance, personalizing learning experiences, and streamlining assessments. The integration of AI-based curricula could provide students with tailored learning paths and real-time feedback, fostering better educational outcomes. **Implication :** this finding emphasize the need for a strategic, multidimensional approach involving both government and educational stakeholders to fully harness the power of AI. For Nigeria to benefit from AI in education, policies must be developed to incorporate digital skills training, and substantial investments in infrastructure, science, and research are critical. **Limitation :** the study include its narrow scope, as it only begins to explore the potential applications of AI in Nigerian education, without fully addressing the challenges of implementation or the social context in which these tools will be applied. **Future Research :** Future research should focus on longitudinal studies that examine the long-term effects of AI in education, explore the barriers to implementation, and evaluate the practical outcomes of AI integration in diverse educational settings across Nigeria.

REFERENCES

- [1] M. Awofiranye, «The challenges of using AI in education». [Онлайн]. Доступно на: <https://www.afterschoolafrica.com/78994/the-challenges-of-using-ai-in-education/>
- [2] D. Adlawan, «The pros and cons of AI in education and how it will impact teachers in 2024». [Онлайн]. Доступно на: <https://www.classpoint.io/blog/the-pros-and-cons-of-ai-in-education>
- [3] D. Akinrefon, «OPIT laments lack of practical in Nigeria's tertiary institutions». [Онлайн]. Доступно на: <https://www.vanguardngr.com/2024/04/opit-laments-lack-of-practicals-in-nigerias-tertiary-institutions/>
- [4] V. I. Asiegbu и др., «Empirical assessment of the national home-grown school feeding programme of the Muhammadu Buhari Administration, 2016-2021», *Eur. J. Humanit. Educ. Adv. EJHEA*, т. 3, вып. 6, сс. 94–102, 2022.
- [5] D. Baidoo-Anu и L. O. Ansah, «Education in the era of generative artificial intelligence (AI): Understanding the potential benefits of ChatGPT in promoting teaching and learning», *J. Artif. Intell.*, т. 7, вып. 1, сс. 52–62, 2023.
- [6] R. J. Barro и J. Lee, «A new data set of educational attainment in the world, 1950–2010», *Natl. Bur. Econ. Res.*, т. 1, вып. 5, с. 92, 2010.
- [7] L. Chen, P. Chen, и Z. Lin, «Artificial intelligence in education: A review», *IEEE Access*, т. 8, сс. 75264–75278, 2020.
- [8] S. Cole и E. Kavlakoglu, «What is artificial intelligence (AI)?» [Онлайн]. Доступно на: <https://www.ibm.com/topics/artificial-intelligence>

- [9] S. Dawes, «How AI can deliver personalised learning and transform academic assessment». [Онлайн]. Доступно на: <https://www.unisa.edu.au/connect/enterprise-magazine/articles/2023/how-ai-can-deliver-personalised-learning-and-transform-academic-assessment/>
- [10] V. Dignum, «The role and challenges of education for responsible AI», *Lond. Rev. Educ.*, т. 19, вып. 1, сс. 1–11, 2021.
- [11] W. Holmes и I. Tuomi, «State of the art and practice in AI in education», *Eur. J. Educ.*, т. 57, вып. 4, сс. 542–570, 2022.
- [12] M. Hooda, C. Rana, O. Dahiya, A. Rizwan, и M. S. Hossain, «Artificial intelligence for assessment and feedback to enhance student success in higher education», *Math. Probl. Eng.*, т. 2, вып. 3, сс. 1–19, 2022.
- [13] G. Isenyo, «Outrage as bandits kidnap 280 pupils from Kaduna schools». [Онлайн]. Доступно на: <https://punchng.com/outrage-as-bandits-kidnap-280-pupils-from-kaduna-schools/>
- [14] ITPulse, «NITDA pushes for curriculum revamping to accommodate digital skills in schools». [Онлайн]. Доступно на: <https://itpulse.com.ng/2024/06/14/nitda-pushes-for-curriculum-revamping-to-accommodate-digital-skills-in-schools/>
- [15] D. Jackman, «Learning theories». [Онлайн]. Доступно на: <https://training.safetyculture.com/blog/learning-theories/>
- [16] T. Kabudi, I. Pappas, и D. H. Olsen, «AI-enabled adaptive learning systems: A systematic mapping of the literature», *Comput. Educ. Artif. Intell.*, т. 2, сс. 10–17, 2021.
- [17] M. Kremer, «Randomized evaluations of educational programs in developing countries», *Am. Econ. Rev.*, т. 9, вып. 2, сс. 102–106, 2003.
- [18] L. Kolodny, «Voiceitt lets people with speech impairments use voice-controlled technology». [Онлайн]. Доступно на: <https://techcrunch.com/2017/06/01/voiceitt-letspeople-withspeech-impairments-use-voice-controlled/>
- [19] D. D. Luxton, «An introduction to artificial intelligence in behavioural and mental health care», в *Elsevier*, 2016, сс. 1–26.
- [20] S. Larsson, E. Chan, и M. Jack, «Sustainable AI: An inventory of the state of knowledge of ethical, social, and legal challenges related to artificial intelligence». [Онлайн]. Доступно на: <https://www.semanticscholar.org/paper/Sustainable-AI%3A-An-inventory-of-the-state-of-of-and-Larsson-Anneroth/087f015b87428301a61eaba3ba92918b3fd56284>
- [21] J. Marino-Garcia и T. Kelly, «Artificial intelligence for Africa: An opportunity for growth, development, and democratization». [Онлайн]. Доступно на: https://www.up.ac.za/media/shared/7/ZP_Files/ai-for-africa.zp165664.pdf
- [22] Y. Miashkova, «AI Time Tracking: What It Is & Why We Don't Do It». [Онлайн]. Доступно на: <https://www.memtime.com/blog/ai-time-tracking>
- [23] M. Mureşan, «Impact of artificial intelligence on education», в *Research Association For Interdisciplinary Studies (RAIS) Conference Proceedings*, июн. 2023.
- [24] L. C. Odoh, C. E. Silas, U. B. Ugwuanyi, и N. V. Chukwuani, «Effect of artificial intelligence on the performance of accounting operations among accounting firms in Southeast Nigeria», *Asian J. Econ. Bus. Account.*, т. 7, вып. 2, сс. 1–11, 2018.
- [25] M. O. Odunaya, «Impact of artificial intelligence in curriculum development in Nigerian tertiary education», *Int. J. Educ. Res.*, т. 1, вып. 12, сс. 20–23, 2023.

- [26] C. Ogwo, «Nigerian curriculum needs upgrade to drive tech adoption». [Онлайн]. Доступно на: <https://businessday.ng/news/article/nigerian-curriculum-needs-upgrade-to-drive-tech-adoption/>
- [27] T. Okemakinde, C. O. Alabi, и J. O. Adewuyi, «The place of teacher in national development in Nigeria», *Eur. J. Humanit. Soc. Sci.*, т. 19, вып. 1, сс. 963–980, 2013.
- [28] C. W. Okonkwo и A. Ade-Ibijola, «Chatbots applications in education: A systematic review», *Comput. Educ. Artif. Intell.*, т. 3, вып. 5, сс. 20–25, 2021.
- [29] V. O. S. Olunloyo, *The challenges of globalization for the design of technical curriculum in developing countries*. University of Lagos Press, 2002.
- [30] R. N. Oranu, «Vocational and technical education in Nigeria», *Unizik Orient J. Educ.*, т. 3, сс. 34–36, 2010.
- [31] P. N. online, «Nigeria should invest in research, innovation». Просмотрено: 13 март 2024 г. [Онлайн]. Доступно на: <https://punchng.com/nigeria-should-invest-in-research-innovation/>
- [32] O. Z. Richter, V. I. Marín, M. Bond, и F. Gouverneur, «Systematic review of research on Artificial Intelligence applications in higher education—where are the educators?», *Int. J. Educ. Technol. High. Educ.*, т. 16, вып. 39, сс. 4–27, 2019.
- [33] E. Ruane, A. Birhane, и A. Ventresque, *Conversational AI: Social and ethical considerations*. Smith Publishers, 2019.
- [34] G. Siemens, «Connectivism: A learning theory for the digital age». [Онлайн]. Доступно на: http://er.dut.ac.za/bitstream/handle/123456789/69/Siemens_2005_Connectivism_A_learning_theory_for_the_digital_age.pdf?sequence=1&isAllowed=y
- [35] V. Singh и A. Singh, «Role of artificial intelligence in educational management», *J. Educ. Pract.*, т. 12, вып. 12, сс. 78–85, 2021.
- [36] J. Smith, «Applications of AI in Educational Management», *Int. J. Educ. Technol. High. Educ.*, т. 18, вып. 1, сс. 1–17, 2021.
- [37] F. Tahiru, «AI in education: A systematic literature review», *J. Cases Inf. Technol. JCIT*, т. 23, вып. 1, сс. 1–20, 2021.
- [38] Vanguardngr, «Nigeria education facing daunting challenges, says First Black Female PhD holder, Columbia varsity». Просмотрено: 10 июнь 2024 г. [Онлайн]. Доступно на: <https://www.vanguardngr.com/2024/06/nigeria-education-facing-daunting-challenges-says-first-black-female-phd-holder-columbia-varsity/>
- [39] W. G. University, «Connectivism Learning Theory». [Онлайн]. Доступно на: <https://www.wgu.edu/blog/connectivism-learning%20theory2105.html#:~:text=Connectivism%20is%20a%20relatively%20new,make%20choices%20about%20our%20learning>
- [40] G. Wilson и V. I. Asiegbu, «Human capital development and local government administration: A case of Emouha Local Government Council of Rivers State, Nigeria», *Q. J. Contemp. Res. Spec. Ed.*, т. 8, сс. 117–189, 2020.

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