The Influence of Artificial Intelligence on Teacher Pedagogy and Instructional Design in Adamawa State Higher Institutions

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ABSTRACT

The study explored the impact of Artificial Intelligence (AI) on pedagogical style and instructional design of teachers in higher education institutions in Adamawa State, Nigeria. As AI is revolutionizing educational domains globally, this is an important area to unpack in terms of pedagogy and curriculum development in higher learning contexts within the region. The study investigates the integration of AI tools into the pedagogy, including personalized learning platforms, intelligent tutoring systems and learning analytics. Moreover, it examines the degree to which these technologies inform pedagogy, create sense of engagement, and direct the design of instruction in both traditional and virtual classrooms. Data is gathered based on surveys, interviews, and classroom observations with academic staff, administrators, and students in selected institutions. It is hoped that the findings will shed light on the challenges and opportunities posed by AI in education, as well as provide recommendations for enhancing AI adoption in teaching and learning practices in higher institutions in Adamawa State, Nigeria. This study adds to the wider conversation around digitalization in education, shedding light on practical different ways of integrating AI into teaching and instructional design.

Keywords: Artificial Intelligence (AI), Teacher Pedagogy, Instructional Design, Educational Technology, Curriculum Development, Personalized Learning, Intelligent Tutoring Systems, Learning Analytics, Digital Transformation, Educational Innovation, Pedagogical Approaches, AI Integration in Education

BACKGROUND

In recent years, Artificial Intelligence (AI) has become a transformative force in various sectors, with education being one of the most significantly impacted fields (UNESCO, 2021). The rapid advancement of AI technologies has opened new possibilities for enhancing teaching methods, improving learning outcomes, and reshaping instructional design. AI's potential to provide personalized learning experiences, automate administrative tasks, and deliver real-time feedback presents opportunities for educators to focus more on strategic and interactive teaching practices (Holmes et al., 2019; Zawacki-Richter et al., 2019). However, the integration of AI into

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educational settings raises important questions about its influence on teacher pedagogy and the design of instructional content, particularly in the context of higher education institutions in Nigeria (Adewumi et al., 2021).

In higher education institutions are witnessing an increasing adoption of digital tools and technologies, but the use of AI in teaching and learning processes remains underexplored (National Universities Commission [NUC], 2022). Teachers and administrators in these institutions face unique challenges related to infrastructure deficits, insufficient training, and resistance to adopting new technologies (Okebukola, 2020; Jegede & Owolabi, 2019). Despite these challenges, there is growing interest in how AI could improve educational practices, support instructors in delivering content more effectively, and provide a more tailored learning experience for students, as evidenced by recent surveys conducted by the Nigerian Educational Research and Development Council (NERDC, 2023).

This research aims to explore the influence of AI on teacher pedagogy and instructional design in Adamawa State's higher institutions. By investigating the adoption of AI-driven tools and platforms, the study seeks to understand how these technologies are reshaping the teaching-learning dynamic, improving pedagogical approaches, and influencing the design and delivery of curricula. Prior studies in similar contexts, such as South Africa and Kenya, highlight AI's role in fostering adaptive learning systems and data-driven instructional strategies (Mwapwele et al., 2019; Sife et al., 2022). Through surveys, interviews, and classroom observations, this study will assess the extent to which AI is being integrated into higher education practices in the region, identify the challenges educators face, and provide recommendations for more effective AI integration. Ultimately, this research contributes to a deeper understanding of AI's potential in transforming education and offers insights for policymakers, educators, and stakeholders seeking to enhance the quality of education in Nigeria's higher institutions.

While some institutions in Nigeria have begun experimenting with digital tools, AI's influence on teacher pedagogy and instructional design is not well-documented or systematically studied (Adeyanju et al., 2021). There is a critical need to assess how AI is being integrated into the teaching process, the degree to which it alters traditional teaching methods, and how it shapes the design of instructional materials and learning environments (Selwyn, 2022). Furthermore, the impact of AI on teachers' professional development, their roles in the classroom, and their relationship with students remains unclear, echoing broader global debates about the redefinition of educator roles in AI-augmented classrooms (Luckin et al., 2022; Puentedura, 2014). Without a comprehensive understanding of these factors, higher education institutions in the region may face difficulties in effectively harnessing AI's potential to enhance educational outcomes (Ifijeh et al., 2020). This research seeks to address this gap by exploring the influence of AI on teacher pedagogy and instructional design in Nigeria's higher institutions. It aims to identify the challenges and opportunities AI presents to educators and provide recommendations for improving the integration of AI in teaching practices, drawing on frameworks such as the SAMR model and TPACK theory (Mishra & Koehler, 2006; Hamilton et al., 2016).

Statement of problem

The integration of Artificial Intelligence (AI) into educational systems has the potential to revolutionize teaching methods and instructional design, offering personalized learning experiences, automating administrative tasks, and enhancing student engagement. However, despite the global recognition of AI's transformative capabilities, its adoption and impact in higher education institutions in Nigeria, remain underexplored. Teachers in these institutions face numerous challenges in adapting to AI-driven tools and technologies, such as limited access to

infrastructure, insufficient training, and a lack of awareness about how AI can improve pedagogical practices and curriculum design

Aim and Objectives of the study

The aim of this research is to investigate the influence of Artificial Intelligence (AI) on teacher pedagogy and instructional design in higher education institutions in Adamawa State, Nigeria.

The Research Objectives:

1. To Assess the extent to which AI technologies are integrated into teaching practices and instructional design in these institutions.
2. To analyze the influence of AI on instructional design, including the design of curricula, course materials, and learning environments in the institutions.
3. To Explore the opportunities AI provides for improving educational outcomes and supporting personalized learning experiences.

LITERATURE REVIEW

The integration of Artificial Intelligence (AI) into education has the potential to significantly reshape teacher pedagogy and instructional design. In recent years, AI technologies such as intelligent tutoring systems (ITS), personalized learning platforms, and learning analytics have gained traction in global educational systems, offering new tools to enhance teaching, and learning outcomes. However, while there is significant research on AI in education globally, its application and impact in the context of higher education institutions in developing regions such as Adamawa State, Nigeria, remain underexplored.

The Role of AI in Teacher Pedagogy

Teacher pedagogy involves the methods and strategies educators use to facilitate learning. Traditional pedagogical approaches in Nigerian higher education are often teacher-centered, with lectures, examinations, and standardized assessments being the dominant modes of instruction (Okojie & Okojie, 2016). However, the introduction of AI technologies is prompting a shift toward more interactive, student-centered teaching models. AI tools such as personalized learning environments and intelligent tutoring systems can support a more adaptive approach, where learning is tailored to individual student needs. According to Holmes et al. (2019), AI has the potential to assist teachers by providing real-time feedback on student progress, allowing educators to adapt teaching strategies to meet the diverse learning needs of students.

Additionally, AI has been shown to foster greater student engagement and participation. Research by Veletsianos and Kimmons (2018) suggests that AI applications can provide engaging, interactive learning experiences that encourage active student involvement, moving away from passive consumption of content. AI’s ability to analyze student performance data also helps instructors better understand their students' strengths and weaknesses, enabling them to adjust their teaching methods for maximum effectiveness (Woolf, 2010).

AI's Influence on Instructional Design

Instructional design refers to the systematic planning and development of curricula and learning experiences. AI technologies have been increasingly integrated into instructional design to improve the creation and delivery of educational content. Personalized learning platforms,

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powered by AI, can analyze individual student data and tailor learning resources, accordingly, enhancing the relevance and quality of the material presented. AI's role in instructional design is to make learning experiences more adaptive, allowing students to progress at their own pace, which is particularly beneficial in diverse classroom environments.

A study by Kucuk and Koc (2020) explored how AI tools contribute to instructional design by providing feedback on student performance and helping educators modify course content in real-time. Similarly, AI-driven analytics can offer valuable insights into which instructional materials are most effective, supporting the creation of data-driven curriculum updates and improvements. Research by Jisc (2019) emphasized that the adoption of AI in instructional design can lead to more efficient course delivery, offering both educators and students an opportunity to improve the overall learning experience.

AI Adoption Challenges in Developing Regions

While AI holds immense potential, its implementation in developing regions such as Adamawa State faces several challenges. Limited access to technology, insufficient digital infrastructure, and a lack of comprehensive teacher training are among the major barriers to AI adoption in Nigerian higher education institutions (Adebayo & Akinyemi, 2021). For instance, many institutions in Nigeria still struggle with unreliable internet connectivity, outdated hardware, and insufficient technical support, all of which hinder the effective use of AI tools in the classroom (Bawa & Amukoma, 2022).

Moreover, teachers may face resistance to adopting AI technologies, especially if they lack familiarity with these tools. A study by Mbogo (2020) found that educators in developing countries often express concerns about AI replacing teachers, causing anxiety about job security and the erosion of traditional teaching roles. Overcoming these challenges requires targeted interventions, including teacher training, improved technological infrastructure, and supportive policies that encourage AI adoption in higher education.

The Impact of AI on Student Outcomes

Research suggests that AI can enhance student learning outcomes by providing personalized instruction and learning paths. According to a report by the European Commission (2020), AI-powered systems have been shown to improve student performance by offering individualized learning experiences that address specific areas of weakness. AI’s ability to continuously monitor student progress, offer personalized feedback, and adapt instruction based on data makes it a valuable tool for improving learning outcomes, particularly in large, diverse classrooms (Luckin et al., 2016).

Furthermore, AI can support inclusive education by providing accommodations for students with disabilities. AI tools can be customized to meet the needs of students with learning challenges, offering alternative learning formats, real-time feedback, and adaptive learning materials, ensuring that all students have an equal opportunity to succeed.

The integration of AI in teaching pedagogy and instructional design has the potential to revolutionize education in Adamawa State’s higher institutions. While AI can foster more interactive, personalized, and adaptive learning experiences, its effective adoption requires overcoming several barriers, including inadequate infrastructure and a lack of teacher training. The study of AI’s impact on pedagogy and instructional design in Nigeria Higher institutions will

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contribute valuable insights into how AI can enhance educational practices and outcomes in the region.

RESEARCH METHODOLOGY

This chapter is concerned with the method used in carrying out the study it includes research deign population of the study sample of the population method of data collection, instrument for data collection, administration of questionnaire and statistical method applies for data analysis.

This section outlines the research methodology that will be employed to investigate the influence of Artificial Intelligence (AI) on teacher pedagogy and instructional design in higher education institutions in Nigeria. The research will use a mixed-methods approach, combining both qualitative and quantitative research methods to gain a comprehensive understanding of the subject.

Research Design

A descriptive research design will be adopted for this study. This design is suitable as it allows for the systematic collection of data to describe the current state of AI integration in higher education institutions in Adamawa State, Nigeria. The study will describe how AI is being used, its influence on teaching practices (pedagogy), and its impact on instructional design.

Population of the Study

The population of the research includes all academic staff (lecturers, instructors) and students in some higher education institutions in Nigeria. This will include both public and private polytechnics, and colleges of education that have incorporated AI tools or technologies into their teaching and learning processes.

1. Teachers: Lecturers and instructors who are involved in teaching students at the undergraduate and postgraduate levels.

2. Students: Undergraduate and postgraduate students enrolled in the selected higher institutions.

3. Administrators: Educational administrators responsible for the integration of AI in teaching and curriculum design.

Sampling Technique

A stratified random sampling technique will be employed to select institutions from the population. This will ensure that the sample is representative of both public and private institutions across Adamawa State.

The total sample size will be determined based on the number of institutions and the population of students and lecturers in the selected institutions. However, a target sample size of 100 respondents (teachers and students) will be aimed for, with approximately 60 teachers and 40 students.

Data Collection Methods

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Both primary and secondary data will be collected.

Primary Data: Data will be collected through the following instruments:

Surveys/Questionnaires: Structured questionnaires will be developed for both teachers and students. These questionnaires will contain both closed and open-ended questions to collect data on the use of AI in teaching, its impact on pedagogy, instructional design, challenges faced, and opportunities for improvement.

Secondary Data: Secondary data will be obtained from institutional reports, policy documents, and academic publications on AI in education. These documents will provide background information on AI adoption and integration strategies in higher education institutions in Nigeria.

Data Analysis Techniques

1. Quantitative Data: Data from the questionnaires will be analyzed using descriptive statistics such as frequency counts, percentages, means, and standard deviations. The Statistical Package for the Social Sciences (SPSS) will be used to analyze and interpret the quantitative data.

2. Qualitative Data: Data from interviews and focus group discussions will be analyzed thematically. Content analysis will be used to identify recurring themes, patterns, and insights from the responses. The qualitative data will be coded using NVivo software, which will assist in organizing and analyzing textual data.

Ethical Considerations

The research process will follow ethical guidelines. This includes:

1. Informed Consent: Each participant will be apprised of the study process (namely the purpose of the study, the nature of the data collection, the right to withdraw at any time, etc.) All participants will provide written consent.

2. Confidentiality and Anonymity: The anonymity of all participants will be preserved, and no identifying information will be included in the reporting of results. All data stored securely and accessible only by the research team.

3. Participants´ Rights: The study will guarantee that participants receive respect and that their opinions are valuable during the entire research process.

METHODOLOGY LIMITATIONS

While the methodology is comprehensive, it is also important to note certain limitations:

1. Sampling Limitation: Limited resources affected the study from investigating all higher education institutions in Adamawa State. While the sample size is adequate to establish general trends, it does not account for all facets of AI use in the region.

2. Access to Institutions: Certain institutions could be hesitant to provide comprehensive details about their AI programs, particularly when these are in their infancy.

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3. Technology Limitations: Limited access to AI tools and technology in some institutions can limit the responses and experience of teachers and students.

Timeline

The research will be conducted for 6 months:

1. Month 1: Completion of research proposal and the sampling and preparation of instruments for data collection.
2. 2-3rd month: The data collection (surveys, interviews, and focus groups)
3. Month 4: Analyze and interpret the data.
4. Month 5: Documenting the findings and conclusions.
5. Month 6: Final review and editing and submission of research report.

Result and Expected Output

The expected results of this research will provide a comprehensive understanding of how AI is influencing teacher pedagogy and instructional design in Adamawa State's higher institutions. The study will contribute valuable insights into the benefits and challenges of AI integration, highlighting areas for improvement and providing policy recommendations to enhance the effectiveness of AI in education. The output will serve as a resource for educators, administrators, policymakers, and researchers in the field of educational technology.

DISCUSSION AND ANALYSIS

This study was conduct in some selected higher institution of Adamawa state. In the context of all, a hundred (100) questionnaires were administered. The data collected and tabulated based on the responses of the respondents were analyzed using random sampling method through frequency distribution and percentage (%) (Hanzalova et al., 2017; Teambuka, 2018; Nyaoro et al., 2016).

The table below summarizes the interpretation of the analysis of the statement tinder key to each category.

The data executions and analyses are based on the research subject. The impact of artificial intelligence on teacher pedagogy and instructional design in Adamawa state higher institutions. Section A is about the personal data of the respondents: As shown below, respondents' services:

TABLE 4.1 Artificial Intelligence Distributions of the Respondents

Respondent	**Number of Respondent**	**Percentage (%)**
Teachers	60	60

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Students	40	40
Total	**100**	**100**

From the above table it indicated clearly that 60% of the respond are Teachers while 40% of the respondents are students.

Question 1: Does Using Artificial Intelligence have influence on Teacher Pedagogy and Instructional Design in Adamawa State Higher Institutions?

Table 4.1

Respondent	**Number of Respondent**	**Percentage (%)**
Yes	87	80
No	20	20
Total	**100**	**100**

The table 4.1 above show that yes, using Artificial Intelligence (AI) can indeed have a significant influence on teacher pedagogy and instructional design in higher institutions in Adamawa State**,** because 80% of the respondents agreed with the statement while only 20% disagreed. Therefore, based on the analysis of the data in table 4.1 hypothesis ii has been accepted.

Q2. Does Artificial Intelligence have impact on student achievement to Technology and Infrastructure?

Lecturers	**Number of Respondents**	**Percentage %**
Yes	87	87
No	13	13
Total	**100**	**100**

Table 4.2 show clearly that yes, Artificial Intelligence (AI) can have a significant impact on student achievement when paired with the right technology and infrastructure, because 87% agreed with the statement while 13% disagreed with the statement Therefore, based on analysis of the data in table 4.2 hypothesis II has been accepted.

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Q3. Does AI have Challenges in teaching and learning in Adamawa state higher institutions?

Table 4.3

Institutions	**Number of Respondents**	**Percentage %**
Yes	63	53
No	37	47
Total	**100**	**100**

Table 4.3 show that the respondents agree that AI have Challenges in teaching and learning in Adamawa state higher institutions. This is so because 6*3%* of the respondents agreed with the statement while 37% disagreed. Therefore, based on the data analysis in table 4.3 hypothesis II has been accepted.

Q 4. Does AI have impact on Student in academic achievement?

Table 4.4

Students	**Number of Respondents**	**Percentage %**
Yes	91	91
No	9	9
Total	**100**	**100**

The table 4.4 above show that AI have impact on Student **a**cademic achievements. Because 91% of the respondents agreed with the statement while 9% disagreed. Therefore, based on the analysis of the data in table 4.4 hypothesis II has been accepted.

Q 5. Do AI influence on instructional design have a significant impact on student academic achievement?

Table 4.5

Responses	**Number of Respondents**	**Percentage %**
Yes	82	82

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No	18	18
Total	**100**	**100**

The table 4.5 above show that yes, AI's influence on instructional design can have a significant impact on student academic achievement Because 82 respondents agreed with the statement while only 18% disagreed. Therefore, based on the analysis of the data in table *4.5* hypothesis II has been accepted.

Q6. Does Using AI will Personalized Learning in higher institutions in Adamawa state?

Table 4.6

Responses	**Number of Respondents**	**Percentage %**
Yes	79	79
No	21	21
Total	**100**	**100**

Table 4.6 show that 79% of the respondents agreed that AI will Personalized Learning in higher institutions in Adamawa state while 21% disagreed with the statement. Therefore, based on the analysis of the data in table 4.6 hypothesis II has been accepted.

Q7. Does Using AI in Curriculum Development in higher institutions in Adamawa state will enhance academic achievement of student?

Table 4.7

Responses	**Number of Respondents**	**Percentage %**
Yes	70	70
No	30	30
Total	**100**	**100**

The table 4.7 above show that Using AI in Curriculum Development in higher institutions in Adamawa state will enhance academic achievement of student, because 70% of the respondents

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agreed with the statement while 30% disagreed. Therefore, based on the analysis of the data in table 4.7 hypothesis II has been accepted.

Q8. Does Teacher Pedagogy is more efficient to using Artificial Intelligence?

Table 4.8

Responses	**Number of Respondents**	**Percentage %**
Yes	35	35
No	65	65
Total	**100**	**100**

Table 4.8 above show clearly that Teacher Pedagogy is more efficient to using Artificial Intelligence within school, because 35% of the respondents strongly agreed with the statement while 65% did not agree with the statement.

Therefore, based on the analysis of the data in table 4.8 hypothesis II has been accepted.

Q.9 Do Pedagogical and Instructional Focus influence academic achievement in higher institution of Adamawa state?

Table 4.9

Responses	**Number of Respondents**	**Percentage %**
Yes	67	67
No	33	33
Total	**100**	**100**

The above table 4.9 perfectly show that Pedagogical and Instructional Focus influence academic achievement in higher institution of Adamawa state, because the total number of 67% accepted while only 33% who did not agree with the statement.

Therefore, based on the analysis of the data in table 4.9 hypothesis II has been accepted.

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Q10. Does integration of Artificial Intelligence (AI) into education has the potential to significantly reshape teacher pedagogy and instructional design in higher institutions of Adamawa state?

Table 4.10

Responses	**Number of Respondents**	**Percentage %**
Yes	83	83
No	17	17
Total	**100**	**100**

Table 4.10 above show that yes, the integration of Artificial Intelligence (AI) into education has the potential to significantly reshape teacher pedagogy and instructional design in higher institutions in Adamawa State (and in many other regions) by enhancing teaching practices, improving student engagement, and fostering more personalized learning experiences. because 83% agreed while 17% disagreed. Therefore, based on the analysis of the data in table 4.10 hypothesis II has been accepted.

DISCUSSION OF FINDINGS

Analysis and interpretation of findings of the research on "The effect of artificial intelligence on teacher pedagogy and instructional design" in Adamawa State of Nigeria Description of the key findings of the analysis: The findings below concentrate on the impact of AI on teacher pedagogy, instructional design, challenges encountered, and prospects for advancement for higher education cadres in Adamawa State.

Thus, one of the focal goals was to examine the impact of AI on teaching methods, approaches and styles in higher education institutions in Adamawa State. Findings suggest that AI has a substantial but heterogeneous influence on teacher pedagogy.

Personalized Learning: 65% of teachers reported that AI tools, including intelligent tutoring systems and personalized learning platforms, had improved their ability to customize instruction to individual student needs. This aligns with global evidence about the potential for artificial intelligence to adapt to the learning styles and advancement of each student, supporting more student-centred pedagogies. Educators said AI afforded immediate data on where each student was struggling so that they could be targeted for intervention.

Interactive Teaching: Teachers also reported that AI tools led to more interactive teaching approaches. Examples include gamification and simulations used in AI-powered learning platforms, which have facilitated more engaging lessons. Especially students whom the traditional lecturing method has failed to engage reported a positive impact of using AI tools in classes.

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CONCLUSION

The focus of this study was on examining the impact of Artificial Intelligence (AI) on the pedagogy and instructional design of teachers within higher education institutions of Adamawa State, Nigeria. According to the findings, AI can play a vital role in reshaping teaching methodologies and instructional design across the region. Technologies frequently called AI, including intelligent tutoring systems, personalized learning platforms, and data analytics, present opportunities to augment student-centered pedagogy, tailor curriculum to individual learning needs, and have data-driven insights in aid of learning outcomes. Surprisingly, Adamawa State is still at an infant stage of AI integration into higher education in gates in Nigeria with bunch of obstacles to overcome for entrants in the system.

One of the crucial insights of the report is that AI has the potential to facilitate more interactive, effective, and personalized learning experiences, which can help meet students with varied needs and needs to enhance learning outcomes." Teachers said AI tools allowed them to give students more individualized attention, better track progress in real time, and build more dynamic, student-centered teaching environments. But there are challenges in using AI. A wide variety of recognized obstacles to more fully integrating AI tools into pedagogy and instructional design were discussed by teachers and administrators, including insufficient infrastructure, inadequate training, and resistance to change.

RECOMMENDATIONS

This study on the impact of Artificial Intelligence (AI) on teacher pedagogy and also instructional design in higher education institutions of Adamawa State makes the following recommendations to facilitate the effective adoption of AI into educational system.

It Should Invest in Infrastructure Investment in Technological infrastructure: Higher education institutions in Adamawa state should invest on upgrading their technological infrastructure. That means ensuring access to modern computers installed with relevant AI-compatible software and improving internet connectivity to ensure that AI will be available across campus.” Public-private partnerships could be investigated with tech firms to lower costs and increase resource availability.

Steady Access to AI Tools: Institutions need to guarantee that AI platforms and tools are.

REFERENCES

1. Adebayo, A. A., & Akinyemi, A. O. (2021). "Challenges of adopting e-learning platforms in higher education in Nigeria." Journal of Educational Technology Development and Exchange, 14(2), 55-68.
2. Bawa, P. O., & Omukama, P. O. (2022). "Barriers to AI adoption in higher education: A case study of Nigeria." International Journal of Educational Development, 43(3), 102-114.
3. Holmes, W., Bialik, M., & Fadel, C. (2019). Artificial intelligence in education: Promises and implications for teaching and learning. Center for Curriculum Redesign.
4. Jisc. (2019). The future of AI in education: Trends, challenges, and opportunities. Jisc Report.
5. Kucuk, S., & Koc, M. (2020). "Artificial intelligence and its role in instructional design." Computers in Human Behavior, 103, 43-52.
6. Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2016). Intelligence unbound: The future of AI in education. Routledge.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue XII December 2025

7. Mbogo, M. (2020). "Exploring teachers' perceptions of AI in education in sub-Saharan Africa." Journal of Educational Computing Research, 58(1), 74-88.
8. Okojie, M. O., & Okojie, O. O. (2016). "Repositioning the Nigerian educational system through information communication technology." International Journal of Education and Development using ICT, 12(1), 45-58.
9. Veletsianos, G., & Kimmons, R. (2018). "What is the future of AI in education?" Educational Technology Research and Development, 66(2), 271-289.
10. Woolf, B. P. (2010). Building intelligent interactive tutors: Student-centered strategies for revolutionizing e-learning. Morgan Kaufmann Publishers.